Submitted to:

Exh 2.5

City of Nashua
New Hampshire

Proposal

Volume III – Appendix Volume

RFP1305-061505

Operation and Maintenance of the Water Utility

July 14, 2005

VEOLIA
Water

September 6, 2005

Ms. Katherine Hersh
Community Development Division
City of Nashua
Central Purchasing Office
229 Main Street
Nashua, NH 03060

Subject: Volumes I (Technical Proposal), II (Price Proposal) and III (Appendix) - RFP1305-061505 - Operations and Maintenance of the Water Utility

Dear Ms. Hersh:

In response to the clarifications requested by Mr. George Sansoucy in the letter of August 31, 2005, **Veolia Water North America – Northeast, LLC (Veolia Water)** has revised our Proposal to reflect the changes and additions requested. The items provided with this letter serve to update and/or replace pages, sections and, in the case of the Price Proposal, the volumes submitted as a part of our Proposal of July 14, 2005.

Included with this letter are the following items:

- **Volume I – Technical Proposal** – Changed pages and sections that are to be replaced in our original submittal. The changes are as follows:
  - Executive Summary – Replace the entire section.
  - Section Two – Replace the entire section.
  - Section Three – Replace the entire section.
  - Section Four – Replacement pages have been provided for I.4-1, I.4-5, I.4-6, 1.4-7 and I.4.-13.
  - Section Six – A replacement page has been provided for I.6.16.

- **Volume II – Price Proposal** – As requested in the letter of August 31, a full-revised Price Proposal is being submitted. This new volume supersedes our previous submittal.

- **Volume III – Appendix A** – Additional resume for staff added on organizational chart revisions from Volume I.

- **Volume III – Appendix F** – Replacement pages for III.F-11 and III.F-12

All of the revisions have been dated September 6, 2005 to reflect the meeting and presentation scheduled for that date.

VEOLIA WATER NORTH AMERICA – NORTHEAST, LLC
200 Cordwainer Drive, Suite 202, Norwell, MA 02061
TELEPHONE: 781-792-0640 - FACSIMILE: 781-792-0653
Veoliawaterna.com

VEOLIA Environment

As the President for Veolia Water's Northeast LLC, I will be the Project Principal and primary point of contact, and I have executed this Proposal transmittal letter.

Veolia Water's contact person for the procurement process will be:

Ms. Sandra Sullivan
Vice President Municipal Business Development
Veolia Water North America- Northeast, LLC
140 Pettaconsett Avenue, Cranston, RI 02920

Telephone: 401-467-7210, ext. 110
Cell Phone: 401-965-8922
Fax: 401-781-5260
E-Mail: sandra.sullivan@veoliawaterna.com

I invite you to contact Ms. Sullivan, or me, if you need any additional information or have any questions regarding this Proposal. We look forward to the opportunity of working with the City of Nashua through this public-private partnership.

Sincerely yours,

VEOLIA WATER NORTH AMERICA – NORTHEAST, LLC

Philip G. Ashcroft
President

VEOLIA
Water

July 14, 2005

Ms. Janice Tremblay, C.P.M.
Purchasing Manager
City of Nashua
Central Purchasing Office
229 Main Street
Nashua, New Hampshire 03061-2019

Subject: **Volume III – Proposal Appendix Volume**
RFP1305-061505 -
Operations and Maintenance of the Water Utility

Dear Ms. Tremblay:

In response to your specific Request for Proposals (RFP), **Veolia Water North America – Northeast, LLC (Veolia Water)** has prepared and presented as a part of this submittal our separate Technical and Price Proposals for the management and operation of the water systems that will be acquired from the Pennichuck Corporation. We understand that this project will involve providing operation, maintenance and management (O&M) services for what is collectively referred to as the Water Utility, which includes the water utility assets of the Pennichuck Corporation, namely, those of Pennichuck Water Works.

This volume provides Appendices, supplemental information that supports the detailed information presented in our separate Technical Proposal and Price Proposal volumes.

This Proposal submittal has been prepared to be responsive to your RFP of March 25, 2005 (and the addenda and clarifications issued to date). As the President for Veolia Water's Northeast, LLC, I will be the Project Principal and have executed this Proposal transmittal letter. Veolia Water's contact person for the procurement process will remain:

Mr. Richard Johnson, Project Vice President
Veolia Water North America – Northeast, LLC
200 Cordwainer Drive, Suite 202, Norwell, MA 02061
Telephone: 781-792-0640 - Fax: 781-792-0653 - E-Mail: richard.johnson@veoliawaterna.com

I invite you to contact Mr. Johnson, or me, if you need any additional information or have any questions regarding this Proposal submittal. We look forward to working with the City of Nashua through this project initiative.

Sincerely yours,

VEOLIA WATER NORTH AMERICA – NORTHEAST, LLC

Philip G. Ashcroft
President

VEOLIA WATER NORTH AMERICA – NORTHEAST, LLC
200 Cordwainer Drive, Suite 202, Norwell, MA 02061
TELEPHONE: 781-792-0640 - FACSIMILE: 781-792-0653
Veoliawaterna.com

VEOLIA Environment

Volume III
Proposal – Appendix Volume

Submitted to:

City of Nashua
New Hampshire

RFP1305-061505

Operation and Maintenance of the Water Utility

July 14, 2005

The information contained on each page of this document which has been stamped with the legend "Company Confidential - Trade Secret and Proprietary Information – Veolia Water" is confidential and proprietary information which constitutes a trade secret of Veolia Water North America Operating Services, LLC and Veolia Water North America – Northeast, LLC (Veolia Water). Veolia Water asserts a business confidentiality claim covering all data and information contained on each page of this document bearing this legend. No such data and information shall be disclosed outside of the agency to which this document has been submitted or be duplicated, used or disclosed, in whole or in part, for any purpose other than to evaluate this document.

VEOLIA Water

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Appendix A

David W. Ford, P.E.

Senior Project Manager/Engineering Services Manager

Education:

BS, Civil Engineering, Worcester Polytechnic Institute, 1979

Registrations/Certifications:

Registered Professional Engineer, New Hampshire, 1987
Wastewater Treatment Operator, New Hampshire (currently inactive)
Water Distribution System Operator, New Hampshire (currently inactive)

Professional Memberships/Activities:

Water Environment Federation
American Water Works Association
American Public Works Association

Background:

Mr. Ford is a Senior Project Manager and Engineering Services Manager with the Capital Program Management group (CPM) of Veolia Water North America – Northeast, LLC (Veolia Water). In this role he is responsible for managing and supporting design/build, design/build/operate (DBO) and capital project work at contract operations, maintenance and management (O&M) projects sites in the State of New Hampshire, as well as in the other areas served by Veolia Water's Northeast Business Center.

Mr. Ford is experienced in directing and supporting all manner of design and construction projects for municipal water and wastewater facilities. This experience includes directing labor resources and managing operations, maintenance, budgeting, permit compliance, design and construction of water and wastewater systems, plus other public infrastructure. Mr. Ford has been responsible for developing capital improvement and operating budgets, engineering contract and construction contract administration, and for projects that were accomplished using the DBO approach.

Prior to joining Veolia Water, Mr. Ford was Director of Public Works for the City of Rochester, New Hampshire. In that role he was responsible for operation, maintenance and new construction associated with City's water and wastewater systems, roadways and drainage systems. His duties also included communicating with state and federal regulating agencies and making presentations to clients, planning boards, various elected officials and the public.

Mr. Ford has also served as a Quality Assurance Engineer, with responsibility for implementing and coordinating design activities associated with the Quality Assurance Program at a nuclear power station. Among his quality assurance duties were multidisciplinary audits of design calculations, drawings and specifications, and development and presentation of training classes on design quality control procedures. In addition, he has prepared construction drawings and specifications, cost estimates and permit applications for various civil and environmental engineering projects for private, municipal and institutional clients.

Experience:

- ***2000-Present***: Serves as Senior Project Manager with Veolia Water's Capital Program Management group (CPM), with responsibility for supporting O&M projects in the State of New Hampshire and the other areas served by the Northeast Business Center. Prior to this, served as the Northeast Regional Service Center Manager for Veolia Water's engineering and construction group. Both roles have involved responsibility for providing engineering and construction oversight and support for capital improvement and related projects in New England and New York, and for providing engineering and construction support for water and wastewater treatment plants being contract operated and managed by Veolia Water in that service area. Key experience includes:
  - Oversight and management of facility improvements completed using a DBO approach for the City of Cranston, Rhode Island's 23-MGD secondary wastewater treatment plant. Plant is being upgraded to a tertiary wastewater treatment facility. Direct responsibility for the management of $1.5 million in improvement projects, providing oversight of engineering and construction contractors.
  - Managing the final phases of upgrades for the City of Lynn, Massachusetts' wastewater facilities, and providing support for the combined sewer overflow design/build project for the City.
  - Member of the startup and transition team, and will provide project management support for a 20-year DBO contract to provide Total Asset Management for regional merchant biosolids operations for the Borough of Naugatuck, Connecticut. This agreement involves providing O&M for the Borough's 10-MGD secondary wastewater treatment plant and sludge incineration facilities. Veolia Water is also providing oversight of a $19 million capital improvement program, which includes upgrade of the biological nutrient removal treatment units, as well as the installation of a new 70-wet-ton-per-day fluidized bed incinerator and sludge dewatering equipment.

- ***1997-2000:*** Served as the Public Works Director for the City of Rochester, New Hampshire, with direct responsibility for:
  - Directing the design of upgrades for a 5-MGD advanced wastewater treatment plant. (Design and Construction Cost: $20 million).
  - Directing the design of 4.5-MGD water treatment plant and activated carbon filter replacement project.
  - Directing engineering and construction for multiple sewage pumping station upgrades.
  - Directing a water treatment plant SCADA system upgrade project implemented using the design/build approach. (Construction Cost: $150,000).

- ***1992-1997:*** Served as the Superintendent of Public Works for the City of Wolfeboro, New Hampshire's Public Works Department. Had direct responsibility managing the design of $500,000 in improvements as part of the upgrade of a secondary wastewater treatment plant.

- ***1990-1992:*** Served as a Project Manager with Provan & Lorber, Inc., Contoocook, New Hampshire.

- ***1986-1990:*** Served as a Project Engineer with Phillips Engineering, Ossipee, New Hampshire.

- ***1981-1986:*** Worked as an Engineer with Stone & Webster Engineering, Boston, Massachusetts.

- ***1981:*** Worked as an Engineer with Tibbets Engineering Corporation, New Bedford, Massachusetts.

- ***1979-1980:*** Worked as an Engineer with Bernard Johnson, Inc., Washington, D.C.

Richard Johnson

Vice President – Municipal Project Development

Education:

MS, Public Administration and Public Policy, Suffolk University, 1987
Honorary Masters, Public Policy, Southeastern Massachusetts University, 1987
BA, History, Bridgewater State College, 1975

Professional Affiliations:

National Association of Housing and Redevelopment Officials, Massachusetts Chapter
Massachusetts Housing and Finance Agency
Southeastern Massachusetts Economic Development Corporation
Lowell Finance Development Corporation
Lowell Plan
Bank of Taunton, Vice Chairman of the Board of Directors

Background:

Mr. Johnson is a Vice President of Municipal Project Development with Veolia Water North America – Northeast, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). In this role, he works with municipal and governmental clients on the development of contract operations, maintenance and management (O&M); design/build/operate (DBO); and related public-private partnership opportunities.

Mr. Johnson has more than 32 years of experience in public service, as a government employee and as an industry employee. He has worked with public agencies in the Northeast and New York to promote water/wastewater partnerships, building successful efforts for communities including: Woonsocket, Rhode Island; Plymouth and Lynn, Massachusetts; and Naugatuck, Connecticut, among others.

As Mayor for 10 years in the City of Taunton, Massachusetts, and a City Manager for five years with the City of Lowell, Massachusetts, Mr. Johnson is familiar with municipal government procedures and has assisted numerous Veolia Water clients with public policy issues. He has also worked as an Adjunct Professor at Suffolk University in Boston, Massachusetts.

Experience:

- ***1995-Present:*** Serving as Project Vice President of Business Development for Veolia Water in the Northeast business center. Responsible for the development of public/private partnerships in the water and wastewater industry throughout the Northeast and the New York State service area. Interacts with consultants, public officials, unions and public work administrators to develop a strategy of shared responsibility between the public and private sector for operations and capital improvements of water/wastewater systems. Coordinates all corporate participants to meet goals established by local communities through their procurement processes. Provides oversight for the submittal of Veolia Water' response to community requests including legal, marketing, technical, engineering, operations and finance departments of Veolia Water.

- ***1992-1995:*** Served as the City Manager for Lowell, Massachusetts. Major accomplishments achieved during his term in office included:
  - Closed a municipal landfill and implemented alternative collection methods, privatized trash pickup, initiated curbside recycling program
  - Initiated and developed Lowell Pride campaign
  - Reorganized and streamline municipal workforce, saving $3 million annually
  - Balanced the City of Lowell's three-year, $13 million budget deficit in seven months
  - Balanced City budget for fiscal years 1992-1995 with surpluses in years 1993 and 1994
  - Increased the City of Lowell's bond rating to BAA!
  - Negotiated six union contracts with 1% salary increase per year
  - Introduced Section 108 revolving loan pool
  - Established Lowell 2000 steering committee
  - Originated new economic development and housing strategy
  - Established new Convention Bureau
  - Created new Human Services Department
- ***1982-1992:*** Served as the Mayor of the City of Taunton, Massachusetts. Major accomplishments achieved during his term in office included:
  - Negotiating all municipal contracts
  - Relining and replacing over 50 miles of water lines, expanded sewer service
  - Revitalizing and rehabilitating the Taunton School District and municipal buildings
  - Initiating and implementing one of the first curbside recycling plans in the state
  - Establishing trust funds for health insurance and workman's compensation, saving $2 million annually
  - Instituting a community development department to maximize state and federal grants, which resulted in $10 million in grant funds in five years
  - Launching energy improvements, saving over $300,000 annually
  - Developing 200 subsidized housing units for elderly, Taunton Housing Authority
- ***1989-1990:*** Served as County Commissioner for Bristol County, Massachusetts.
- ***1976-1982:*** Served as the Executive Director of the Taunton Housing Authority.
- ***1974-1976:*** Worked as an Administrative Assistant to the Mayor of Taunton, Massachusetts.
- ***1970-1974:*** Served as the Director of Recreation for the City of Taunton, Massachusetts.

Philip G. Ashcroft

President - Veolia Water North America – Northeast LLC

Education:

London Executive Program, London Business School
BSc, Geology, Physics, Chemistry, Durham University

Professional Affiliations:

Institute of Directors
Institute of Water Officers, Eastern Region President

Background:

Mr. Ashcroft is the President of Veolia Water North America – Northeast, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). In this role he is responsible for managing a business operations group that provides operations, maintenance and management (O&M), design/build/operations (DBO) and related services to municipal, other government and industrial clients in the State of New Hampshire, the other New England states and New York. This includes over 40 current projects, employing over 550 operations, administrative and management staff.

Mr. Ashcroft has more than 34 years of business and corporate management experience, which has included work experience in the process and manufacturing industries. Prior to joining the Veolia Water operations group in North America, he managed the operations of Three Valleys Water, a water supply system that serves 2.4 million people in communities north of London, England; a utility operations group that is a subsidiary of Veolia Water.

Mr. Ashcroft's work has involved the management of organizational changes, both direct and line-functional responsibilities, bringing to bear his ability to restructure major business environments by reviewing business performance, implementing new working practices and improving labor utilization to radically improve efficiency and profit performance. This has included the successful merger of North Surrey Water and Three Valleys Water in England.

Experience:

- ***2005-Present:*** Serves as the President of Veolia Water's Northeast regional operations group, which is responsible for the delivery of O&M, DBO and related services to municipal/governmental and industrial clients in the Northeast business center's service area. Serves as the Project Principal for O&M and other projects undertaken by the Northeast Business Center in the State of New Hampshire and other parts of the region.
- ***2001-2004***: Served as Senior Vice President of Major Utility Operations for Veolia Water North America, with responsibility for transitioning major utility operations in North America to the management systems and operating and administrative standards of Veolia Water Canada and Veolia Water. Participated in strategic planning and the development of the corporate-wide asset management program.
- ***2001-2002:*** Served as Operations Director of Three Valleys Water, directing the merger of Three Valleys Water with North Surrey Water. Three Valleys (a subsidiary of Veolia Water, S.A.) is responsible for the entire water system serving an area north of London, England (population of 2.4 million). O&M responsibilities included the maintenance of the surface water and groundwater treatment plants; supervision and maintenance of the distribution system, including meter reading and connections; and billing, collections, connections and customer information requests. Two major water treatment plants are a part of this system, including the Iver Treatment Works (a 63-MGD water facility,

which uses physical treatment, advanced chemicals, polishing and disinfection with ozone and granular activated carbon adsorption), and the Clay Lane Treatment Works (a 42-MGD plant that uses physical treatment, advanced chemicals, polishing and disinfection treatment plant with granular activated carbon adsorption).

- ***2000***: Served as Managing Director, North Surrey Water, and Head of Operations, Three Valleys Water Plc./Veolia Water. Managed the merger of North Surrey Water with Three Valleys Water to achieve greater synergies and operational efficiencies while driving a major change program in both companies.
- ***1998-2000:*** Served as Operations Director, Three Valleys Water Plc/Vivendi, the largest of the Veolia Water UK Water Operations companies. This system served approximately 1 million customers and a population base of more than 3 million. Key accomplishments included reducing operating expenditures by £3 million in the first year, for a system with annual revenues of over £145 million. Developed and introduced processes to fundamentally review business performance and then to radically improve efficiency.
- ***1993-1998:*** Served as Divisional General Manager and Divisional Director, South West Water Services, Ltd., England. Held profit and loss responsibility within a geographical area of 2,500 sq km for all clean and wastewater products and services. Developed a company-wide integrated distribution networks strategy and HR strategy.
- ***1990-1993:*** Served as Director and General Manager, Armitage Shanks Integrated Systems, a manufacturer and distributor of washroom systems. Restructured the company, introduced Total Quality Management to achieve ISO 9000. Re-equipped the manufacturing facility with leading edge technology and introduced systems to achieve computer integrated manufacturing.
- ***1988-1989:*** Served as Vice President and General Manager, Williams Brothers, a subsidiary of Blue Circle, Inc., Atlanta, Georgia. Responsible for three businesses, two ready-mix concrete and one aggregates.
- ***1986-1988:*** Served as Human Resources Manager, Blue Circle Cement in England. Introduced radical improvements in labor utilization and a new package of terms and conditions at all of this company's cement producing plants.
- ***1982-1986:*** Served as Operations Manager, Blue Circle Cement, Dunbar Cement Plant, England. Responsible for operations at a multi-kiln plant with one million tones per year output. Increased productivity by 100% while maintaining plant output through the introduction of new working practices and the rebuilding of the plant with new technology and processes.
- ***1980-1982:*** Served as Industrial Relations Manager, Blue Circle Cement, Corporate Office, England. Advised line managers across the spectrum of Industrial Relations issues within an aggressive multi-union environment.
- ***1970-1980:*** Worked as a Graduate Trainee, Plant Operations Manager, then Deputy General Manager, Blue Circle Cement. Held various line management roles in Production and Distribution at the Northfleet plant in Kent and the Maison plant in Suffolk.

J. Joseph Burgess

President - Veolia Water North America

General Background:

Mr. Burgess is the President of Veolia Water North America Operating Services, LLC. In this role, he manages the company's operations and project performance, with responsibility for customer satisfaction, service delivery and overall performance for industrial and governmental clients.

Mr. Burgess joined Veolia Water in 2002 as the Vice President and General Manager of the Northeast Business Center of Veolia Water North America Operating Services, LLC (Veolia Water), and in that role, he managed a business operation that provides contract operations, maintenance and management (O&M), design/build/operations (DBO) and related services to municipal, other government and industrial clients in the six New England states and New York.

Mr. Burgess then served as the Senior Vice President and Chief Operating Officer for Veolia Water, directing the delivery of O&M, DBO and related services throughout North America.

Mr. Burgess has a strong base of experience with strategic planning, operations management and leadership. He was a founding member of the Water Partnership Council, a water industry group dedicated to helping communities and companies in the U.S. meet their water and wastewater needs in the safest, most environmentally sound and cost effective manner possible. This group is formed of Veolia Water, together with other leading providers of operational services for water and wastewater treatment facilities, and was established in 2001 to advance the cause of sustainable water quality.

Mr. Burgess joined Veolia Water from Covanta Water Systems, where he was the Executive Vice President for that company's water systems operations. While with that company, he was responsible for the startup of this firm's water business, currently a $70 million a year division, and was instrumental in establishing the company as a design/build and DBO services provider.

Experience:

- ***1/2005-Present:*** Serves as the President of Veolia Water North America Operating Services, LLC, the parent company for the regional entities of Veolia Water which are involved in the delivery of O&M, DBO and related services to municipal/governmental and industrial clients throughout North America. Provides oversight and management support for the operations of Veolia Water North America – Northeast, LLC, which is responsible for the delivery of services to clients in the State of New Hampshire and other parts of the Northeast.
- ***2003-Present:*** Served as Senior Vice President and Chief Operating Officer for Veolia Water, with responsibility for directing the performance and ensuring the quality of contract O&M, DBO and related services for municipal and industrial clients throughout North America.
- ***2002:*** Served as General Manager for the Veolia Water Northeast Business Center, which provides O&M, DBO and related services to government and municipal clients in New England and New York. Responsible for regional management and direction of multiple projects to ensure client satisfaction, contract compliance and budget control. This included providing oversight and management support for Veolia Water's O&M projects in the State of Rhode Island, including our current contract with the Narragansett Bay Commission for the O&M of the Bucklin Point Wastewater Treatment Facility.

- ***1997-2002:*** Served as the Executive Vice President for Covanta Water Systems, Fairfield, New Jersey. Responsible for startup of Covanta's water business, a provider of DBO services for water, wastewater, stormwater and desalination treatment facilities; a business unit with over $70 million in revenue.
  - Directed and provided oversight of over $200 million of construction activity with Covanta acting as prime contractor. Coordinated design/estimating activities on all bids. Responsible for final pricing decisions, project execution and performance.
  - Acquired the DualSand™ technology patent in 2000; this business unit achieved $15 million in revenue in the first year of commercial operations of this technology.
  - Established the company as a leading competitor in the DBO, filtration and desalination markets.
- ***1989-1996:*** Served as Vice President of Business Operations for Covanta Energy, Fairfax, Virginia.
  - Held profit and loss (P&L) responsibility, and served as the primary client contact for the region with 10 operating waste-to-energy facilities and revenues exceeding $225 million. Generated income/cash growth of over 10% annually through maximizing waste deliveries, special waste programs and cost control.
  - Created a regional management structure that improved service delivery for financial analysis, cash flow, budgeting, planned maintenance, environmental compliance and safety services.
  - Re-permitted the Alexandria, Virginia, and Lake County, Florida, facilities to allow for medical waste processing, increasing income at those facilities by more than 20%.

  Prior to this he served as the Regional Business Manager for Covanta Energy in Fairfax, Virginia, the largest waste-to-energy facility in North America.
  - Renegotiated facility service agreements to allow for outside jurisdiction waste streams and special waste streams to be processed at facility, which increased the facility's revenues by over $10 million annually.
  - Renegotiated the Fairfax facility's power purchase agreements to reduce costs by over $2 million annually.
  - Managed change order requests for the Fairfax facility construction effort within 3% tolerance budget.
  - Petitioned the State of Virginia for sales tax exemptions on all environmental equipment, including odor control equipment, successfully and saved the project $2 million.
  - Established a steering committee to develop an initial safety program for Covanta waste-to-energy facilities. Sat on initial corporate safety committee and established the company's safety reporting and audit programs.
- ***1981-1985:*** Worked in various positions with Monsanto Company in Houston, Texas.
  - Joint Venture accountant for Monsanto/Cononco petrochemical JV. Served on the JV divestiture team, with responsibility for developing methodologies for setting sales price and ongoing cost sharing for over $600 million of shared site utility and services infrastructure. Developed and assisted with negotiating pricing for sale of phenolic resin business. Served as Cost Control Supervisor for construction and startup of $110 million Alimet™ manufacturing facility.

Education:

BA, Accounting and Finance, University of Florida, Gainesville, Florida, 1981

Professional Affiliation:

Water Partnership Council – Founding Member

C. Jill Beresford

Business Manager/Financial Partner – Northeast Business Center

Education:

University of Guelph, (English) Canada
M.B.A., Boston University, 1991

Background:

Ms. Beresford is the Business Manager and Financial Partner for Veolia Water North America – Northeast, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). In this role she is responsible for coordinating the delivery of support resources for Veolia Water O&M teams at various facilities in the New England and New York service area. Ms. Beresford draws from the regional resource team of Veolia Water, which provides experts in management, technical and operations areas.

Ms. Beresford's background and experience includes more than 27 years of finance and business management experience in the U.S. and internationally.

Experience:

- ***2005-Present***: Serving as the Business Manager and Financial Partner for Veolia Water in the Northeast Business Center.
- ***2003-2005:*** Served as the Vice President of Business Operations with Adelphia Media Services. Hired to implement the turn-around, bankruptcy emergence/sales process plans and infrastructure building for one of Adelphia's three regions. Adelphia is the third largest bankruptcy in U.S. history and the largest surviving Chapter 11. Job responsibilities included working with bankruptcy team for legal review of over 10,000 contracts for the region; re-statement of financials for S.E.C. purposes back to 1999; documenting, writing and implementing Sarbanes-Oxley processes; building infrastructure of $100 million region with 200 employees.
- ***1988-1999:*** Worked in a variety of roles with BPI Packaging Technologies, Inc., a company that converted plastic resins into film for industrial applications and retail carry-out bags for the grocery, convenience store and food packaging markets. The Company conducted an IPO in 1990 to fund an aggressive expansion, following a successful turn-around from near bankruptcy in 1989. The Company grew from $6 million to $30 million annual sales by 1997. A strategic decision by the CEO mid-1997 resulted in a reduction of sales to $10 million within six months and a return to near-bankruptcy conditions. In June 1998, the Board of Directors replaced the CEO and Chairman of the Board, resulting in a promotion to the interim CEO, Chairman of the Board position. The balance sheet was restructured in early 1999 through a combination of debt and equity financing funded by a private investor and resulted in a change of control.

  - Interim Chairman of the Board/CEO/CFO (1998 – Jan 1999) - Promoted by Board of Directors to Interim Chairman/CEO/CFO position following the termination of former Chairman/CEO.

  - President and Chief Operating Officer (1996 – 1998) - Responsible for all performance improvement in day-to-day activities of 24/7/363 manufacturing facility with primary focus on developing strategy to increase sales of patented and proprietary high margin products.

  - Chief Operating Officer (1993 – 1996) - Responsible for all day-to-day activities of the Company with primary focus on start-up of a new facility and requisite infrastructure.

- Vice President of Marketing (1988 – 1993) - Responsible for niche-marketing the Company in a commodities industry.

- ***1978-1986:*** Served as Vice President and Account Director with Grey Advertising in Canada. Responsible for management of Procter & Gamble (six brands), General Foods (two brands) and Beecham Products (five brands).

William (Benn) B. Bullock, II

Environmental, Health, Safety and Security (EHS&S) Manager

Education/Training:

AS, Management, Johnson and Wales University, Providence, Rhode Island, 1978
BS, Management, Johnson and Wales University, Providence, Rhode Island, 1980
Supervisory Training Program - USFilter and General Dynamics
Veolia Water EH&S Train the Trainer Courses
HAZWOPER – Spill Response Training
Process Safety Management Training
Hazardous Waste Management/SARA Title III Training
Fleet Safety/DOT Training

Background:

Mr. Bullock is an Environmental, Health, Safety and Security (EHS&S) Manager for Veolia Water North America – Northeast, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). He provides oversight, management and enforcement for the EHS&S programs at contract operations, maintenance and management (O&M), design/build, and design/build/operate (DBO) projects sites throughout New York and New England. In addition, he manages environmental compliance and health and safety for process water and related business units for other affiliated company facilities and operations.

Mr. Bullock is skilled in developing and implementing site-specific health and safety plans and emergency response plans and performing injury and accident investigations. He also has over 33 years of experience in project management, health and safety management and industrial operations.

Experience:

- ***2000-Present:*** Serves as the Veolia Water EHS&S Northeast Regional Manager, with responsibility for health and safety and environmental compliance for operations, facilities and projects in the Northeast Region and Eastern Canada. This includes oversight for more than 180 facilities in the states of Massachusetts, New Hampshire, Connecticut, Washington, D.C., Delaware, Maryland, Maine, New Jersey, New York, Pennsylvania, Rhode Island and Vermont, as well as Eastern Canada.

- ***1996-2000:*** Served a Plant Manager with Veolia Water for a Regeneration Plant in South Windsor, Connecticut. Was instrumental in bringing this Process Water facility and into HS&E compliance.

- ***1969-1996:*** Worked in progressively responsible positions with General Dynamics Corporation's Electric Boat Division in Groton, Connecticut, ending career at this firm as a Facilities Manager. Spent 25 years involved in the submarine construction business. Responsibilities at General Dynamics included supervision of the management and trade's personnel in charge of maintenance, testing and certification of the facilities 365 cranes. Had direct involvement with the facility EH&S department, the Navy, OSHA, NRC (nuclear regulatory commission), Connecticut State and Federal agencies.

- ***1966-1969:*** Served in the U.S. Navy stationed in New London, Connecticut.

Robert R. Burton

Director of Special Projects

Certifications:

Grade IV water Plant Operator, Iowa
Grade III Wastewater Plant Operator, Indiana

Professional Memberships/Activities:

American Water Works Association

Background:

Mr. Burton is a Director of Special Projects with Veolia Water North America – Central, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). He is assigned to Veolia Water Indianapolis, and is responsible for the development and implementation of the Operations Division's annual Business Plan, including process improvements and benchmarking, and budget management for the $39 million annual budget.

Mr. Burton has more than 12 years of experience in the operations and environmental management of water and wastewater treatment facilities, water distribution systems, sewer collection systems, public works departments, including client relations, budget renewals, new project development, compliance monitoring, budget preparation and reporting, and monthly and annual reports.

Experience:

- ***2003-Present:*** Serves as the Director of Special Projects with Veolia Water Indianapolis LLC, which operates and manages Veolia Water's 20-year, $1.5 billion contract with the City of Indianapolis, Indiana, which includes all operations, maintenance and management (O&M), capital project work and customer service facets of the City's waterworks system, a system that currently serves 1.1 million people. Responsible for budget management for the Operations Division's $39 million annual budget. Developed a forecasting and variance reporting system for the Division. Led process improvement activities for all aspects of the Division; field services, distribution, production, procurement, fleet and warehousing. Led the development of the Operations Division's 2005 operating budget. Currently leading a team to develop an IT disaster recovery/emergency response plan for the Indianapolis project.
  - Served as the Director of Field Services (2003-2004), responsible for the Distribution, Field Services and CCS areas of the company. Assisted with the transition of the newly formed department, reorganization of the department personnel, work flow process improvements, budget development and development of the interdependencies and synergies between Field Services and other departments as well as outside agencies and contractors.
- ***2000-2003:*** Served as Project Manager for Veolia Water's O&M project with the City of Boonville, Indiana. Managed the daily operations of a 1.44-MGD wastewater treatment plant, 2.1-MGD water treatment plant, distribution and collection systems, combined sewer overflows, 12 lift stations, and meter reading. Assisted the City with plans and oversight for the construction and startup of a new 5-MGD wastewater treatment facility.
- ***1998-2000:*** Served as Project Manager for Veolia Water's O&M project with the City of Storm Lake, Iowa. Responsibilities included oversight of daily operations and maintenance activities of the 4.65-MGD water treatment plant, 10 water wells, 5-MGD wastewater treatment plant and 17 lift stations. Ensured effective facility performance, budget management and permit compliance.
- ***1997-1998:*** Served as Operations Manager for Professional Services Group's (predecessor company) O&M project with the City of Boonville, Indiana. Managed the operations of the 2.1-MGD groundwater

treatment facility and 1.7-MGD activated sludge wastewater treatment plant. Responsibilities included laboratory supervision, QA/QC program implementation, telemetry operation, regulatory reporting, training and computer operation. Supervised the construction of a 500,000-gallon elevated storage tank, prepared monthly operations and financial reports to the City.

- ***1993-1996:*** Served as Water Treatment Plant Operator for the City of Henderson, Kentucky. Responsible for the operation of a 12-MGD surface water treatment facility. As Wastewater Plant Maintenance Operator (1992-1993), provided maintenance to the 7-MGD activated sludge wastewater treatment plant.

Scott A. Edwards

Vice President - Marketing Communications

Education:

BA, Psychology, Louisiana State University

Background:

Mr. Edwards is Vice President of Marketing Communications for Veolia Water North America Operating Services, LLC (Veolia Water). He provides strategic direction to the company's marketing and communications activities.

At Veolia Water, Mr. Edwards is responsible for marketing communications and community relations functions related to the company's operations in the U.S. and Canada, playing a leadership role in the development of the company's public relations, public affairs, community relations, strategic business development and industry relations nationwide.

He has more than 15 years of experience in the marketing communications field and eight years of experience in environmental services. He has received a number of communications industry awards for his clients. Mr. Edwards also plays an active role in Veolia Water's corporate communications program.

He actively travels throughout the country understanding how water impacts our nation's communities and businesses. Given his experience and expertise, he understands that Veolia Water must continue to serve as a good corporate steward and citizen.

Experience:

- ***1997-Present***: Responsible for integrated marketing and communications programs for the water and wastewater outsourcing/privatization market leader. Responsible for all facets of marketing communications including national and local communications, advertising (print and broadcast), media relations, trade shows, community relations, advertising, direct marketing, sales literature, newsletters/magazines, speech writing, videos, editorials, event and trade show management, market research and related functions.

- ***1994-1997***: Responsible for market information, sales support and all communications for a publicly traded environmental services and recycling company.

- ***1989-1994***: Managed business-to-business and issues accounts for various governmental affairs, industrial, energy and real estate clients at a leading Houston advertising and public relations firm.

- ***1986-1989***: Began career and received strong public relations experience in a variety of settings for consumer, professional services and industrial clients.

Donald G. Ellis

Vice President and Human Resources Manager

Education/Training:

BS, Business Administration, University of Dayton

Training Seminars: Hiring, FMLA, ADA, Workers Compensation and DER compliance

Professional Membership:

Pittsburgh Human Resources Association

Background:

Mr. Ellis is Vice President and Human Resources and Labor Relations Manager with Veolia Water North America Operating Services, LLC (Veolia Water). He is responsible for managing human resources support for Veolia Water Canada, Inc. project sites, as well as those of Veolia Water at other sites across North America. Mr. Ellis is responsible for working with local management teams to transfer staff and to hire any other local staff required for operations and related projects.

Mr. Ellis has more than 25 years of experience and has been involved in developing human resources policies and procedures and worked with managers to administer benefits and other personnel programs. He has a strong base of experience in supporting the human resource needs of contract operations, maintenance and management (O&M) project sites.

Experience:

- ***2000-Present:*** Serves as the Human Resources and Labor Relations Manager for VWCanada and Veolia Water, and supports startup and transition activities nationally. Provides human resource management for the general administration of Veolia Water's Human Resources department.
- ***1996-1999:*** Served as Human Resource Supervisor for Cutler-Hammer/Eaton Corporation, Beaver, Pennsylvania. Duties included performing all human resource functional activities in support of a plant employing 680 people with two unions and sales of $150 million. Administered all personnel policies, AA Plans, ADA/FMLA guidelines, and other routine plant activities; coordinated and developed training programs; obtained labor agreements; recruited and staffed hourly and salaried personnel.
- ***1988-1996:*** Served as Human Resource Manager for WHEMCO, West Homestead, Pennsylvania. Primary human resource focal point for four plants spread throughout three states, employing 500 people in both union and non-union settings. Developed employee handbook, implemented self-funded medical and workers compensation programs, negotiated labor agreements, established job requirements and training programs in support of ISO 9001 and improved training process.
- ***1984-1988:*** Served as Personnel Superintendent for Wheeling Pittsburgh Steel Corporation, Steubenville, Ohio. Served as a labor contract administrator responsible for the administration of personnel policies, employee benefit programs, labor contracts, grievance resolution, expediting arbitration and recruiting involving 3,500 employees. Initiated meetings with state representatives.
- ***1973-1984:*** Worked with United States Steel (USX), Mon Valley Works, Pittsburgh, Pennsylvania. Held various positions throughout the Works including Labor Contract Administrator, Safety Engineer, Industrial Engineer and Laborer.

William J. Fahey

Project Manager

Education:

MBA, University of Massachusetts, 2000
BS, Marine Engineering, Massachusetts Maritime Academy, 1987

Registration/Licenses:

Grade 5-C Wastewater Treatment Plant Operator
United States Coast Guard License – Third Assistant Engineer of unlimited horsepower, steam or diesel

Professional Affiliations:

American Water Resources Association
American Society of Civil Engineers

Background:

Mr. Fahey is a Project Manager with Veolia Water North America – Northeast, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). He has more than 18 years of engineering, construction and operations and maintenance and management (O&M) experience related to wastewater collection and treatment systems.

Mr. Fahey is involved in supporting projects in the State of New Hampshire, as well as other parts of the region. Prior to this, he served as the Asset Manager for Maintenance at the Massachusetts Water Resources Authority's (MWRA's) Deer Island Wastewater Treatment Plant. In this role, Mr. Fahey directed a group of engineering and operations staff, consultants and others in providing maintenance services for this facility, which is the second largest secondary treatment plant in the U.S.

Mr. Fahey is experienced in managing staff, budgets, asset management programs, and capital replacement plans. His background also includes process engineering and project management in industrial wastewater, industrial pretreatment as well as all aspects of preventive, predictive and corrective maintenance.

Experience:

- ***1999-Present:*** Serves a Project Manager with Veolia Water in the Northeast business center, providing support to engineering and O&M projects in the region.
  - Served as the Asset Manager, Maintenance, for Veolia Water Systems (the engineering and construction arm of Veolia Water), assigned to the MWRA, Boston, Massachusetts. Responsible for developing long-term strategic maintenance plan for the $3.4 billion Deer Island Wastewater Treatment Plant. This plan includes a balance of preventive, predictive, corrective and reliability centered maintenance. Other responsibilities include managing a staff of 13 and a budget of $1.5 million; developing and maintaining the capital replacement plan; and implementing and managing the Facility Asset Management Program. Mr. Fahey also develops the model for all plant maintenance and asset management; ensuring optimization of the plant's

Computerized Maintenance Management System and plans and schedules all maintenance work and inventory resource allocation.

- Served as owner representative on a comprehensive maintenance optimization strategy implementation on a Primary Clarifier Battery, which resulted in substantial savings for the Authority. It is anticipated that this program will reduce maintenance costs by 40% to 60%.

- ***1996-1999:*** Served as Program Manager, Construction Coordination, with Veolia Water Systems, assigned to the MWRA. Responsible for the management of $13 million in warranty claims for the Deer Island plant. Responsibilities included coordinating activities of the maintenance staff and contractors to ensure timely completion of warranty items; managing daily activity of the Construction Coordination Department; and serving as technical liaison to the Authority's legal division on all warranty claims.

- ***1994-1996:*** Served as Project Manager, Process Engineering, for Veolia Water Systems, assigned to the MWRA. Managed all process engineering activities for the operation of the wastewater systems from initial check out and startup, through integration and then final operation. Responsible for coordinating and completing operability surveys of assigned construction packages. Worked with multidisciplinary design teams and construction personnel to resolve and correct defective design and construction. Worked with process control and operations staff to troubleshoot problem systems. Represented Deer Island O&M departments at startup meetings.

- ***1988-1994:*** Held various engineering and project management positions with Veolia Water Systems, assigned to the MWRA. Responsibilities included conducting inspections of industrial wastewater discharges in the MWRA district to ensure compliance with federal, state and local laws; inspecting various industrial process and wastewater treatment systems; providing technical support to MWRA legal staff in regard to wastewater compliance issues; reviewing proposed industrial treatment plant designs to ensure that systems adhered to proper engineering design practices; and conducting inspections of new and existing gas/oil separators, ensuring that new construction complied with applicable regulations.

- ***1987-1988:*** Served as Diesel Power Plant Operator for E&C, assigned to the MWRA. Responsible for O&M of diesel and electric pumps; and monitoring water flow, chlorine residual, and reservoir levels.

John H. Fritsch

Project Manager

Education:

AA, Applied Science, North Shore Community College 1971
New England Regional Wastewater Institute
Coursework in Wastewater Treatment and Laboratory, Lowell University
Coursework in Power Plant Operations, The Peterson School of Steam Engineering

Certifications/Licenses:

Grade I Water Operator Certification, New Hampshire, #2169
Grade 4 Wastewater Operator Certification, New Hampshire, #608
Grade 4 Wastewater Operator Certification, ABC, #S487226R5
Grade 7 Wastewater Operator Certification, Massachusetts, #0767
CPR/First Aid Certification
40-Hour Hazardous Waste Site Operations Health and Safety Training
8-Hour Hazardous Waste Site Supervisor Health and Safety Training
24-Hour Hazardous Material Technician Certification

Professional Memberships:

New England Water Pollution Control Association
New Hampshire Wastewater Treatment Plant Operators Association
New Hampshire Water Pollution Control Association; Education Committee

Background:

Mr. Fritsch is a Project Manager with Veolia Water North America – Northeast, LLC, and is based in New Hampshire. He has over 28 years of experience operating treatment facilities, with an emphasis on managing groundwater remediation facilities.

Mr. Fritsch has been involved in nearly every phase of facility operation, from managing startup activities, to daily facility operation and through to site closure procedures.

Experience:

- ***1991–Present:*** Serving as Project Manager for Veolia Water's contracts with the New Hampshire Department of Environmental services for remediation activities at the OK Tools Site and Gilson Road Superfund Site in Nashua, New Hampshire. Administered the contract O&M of a 0.43-MGD groundwater treatment facility. Responsibilities included contract negotiation, client relations, and management of the annual budget. Oversaw daily standby maintenance activities, including sludge landfill closure, supervised a staff of 14, forecasted and monitored budget, and performed process troubleshooting. Currently managing the dismantling of the treatment system and post-closure activities for this site.

- ***1991:*** Served as Startup Manager for Metcalf & Eddy Services, Inc. (a Veolia Water predecessor company). Responsible for startup activities at a groundwater treatment facility in Garden City, New York. Treatment involved groundwater extraction, air stripping and liquid- and vapor-phase carbon with on-site regeneration.

- ***1986-1991:*** Served as Chief of Operations for Metcalf & Eddy Services, Inc. Managed operations of a groundwater treatment facility in Nashua, New Hampshire. Operations included contaminated groundwater pumping, metal removal, multi-media sand filtration, high-temperature air stripping, vapor incineration, extended aeration, wastewater treatment, a 180-kW steam turbine and generator and soil gas extraction system.

- ***1977-1986:*** Worked as a Senior Operator for the Greater Lawrence Sanitary District of North Andover, Massachusetts. Responsible for the operation of a 52-MGD activated sludge wastewater treatment plant with primary sedimentation, cyclonic grit removal, activated sludge, chlorination, dissolved air flotation, vacuum filtration, belt filter presses and multiple hearth incineration systems.

- ***1973-1977:*** Worked as an Operator for the Boston Metropolitan District Commission in Deer Island, Massachusetts. Participated in the operation of the 400-MGD Deer Island primary wastewater treatment plant with sludge thickening, anaerobic sludge digestion and chlorination.

James P. Galipeau

Senior Area Manager - Northeast Business Center

Education:

Coursework in Business, University of Massachusetts (Dartmouth)
Business Studies, American Management Association
Wastewater Treatment, California State University, Sacramento
Multiple Hearth Incineration Process, Jones & Henry
Wastewater Technology Collection Systems, NEIETC
Hazardous Waste Operations/Emergency Response, Operations Level
Hazardous Waste Operations/Emergency Response, Technician Level

Certifications/Licenses:

Grade 7C Wastewater Treatment Plant Operator, Massachusetts
Grade 2 Collection System, New England Water Pollution Control Authority
Grade IV Wastewater Treatment Plant Operator, Association of Boards of Certification

Professional Memberships:

Water Environment Federation
New England Water Pollution Control Association

Background:

Mr. Galipeau is a Senior Area Manager with Veolia Water North America - Northeast, LLC (Veolia Water), an autonomous business unit of Veolia Water North America Operating Services, LLC. He has more than 16 years of experience in the operation and maintenance (O&M) of industrial and municipal wastewater treatment facilities. Mr. Galipeau has additional experience in safety, hazardous waste labeling, handling and storage and in compliance and reporting responsibilities with OSHA, DEP and the U.S. Environmental Protection Agency.

Experience:

- ***1998-Present:*** Serving as an Area Manager with Veolia Water, with responsibility for providing oversight, management and support for O&M and design/build/operate (DBO) projects in New Hampshire, Massachusetts and Rhode Island, as well as other parts of the region. Responsibilities include contract, financial and technical oversight and support to facility project managers, as well as client support and customer service for projects including:
  - Total asset management of the City of Taunton, Massachusetts' wastewater treatment facility and Pollution Prevention (P2) program. The City is funding $11 million in capital improvements at its 8.4-MGD wastewater plant. In addition to traditional operation and maintenance, Veolia Water assumed complete responsibility for all facility maintenance and repair expenses as well as capital repair or replacement items. Project work is being implemented using a design/build/operate approach.
  - Contract O&M for the Town of Smithfield, Rhode Island's wastewater facilities.
  - Contract O&M for the Narraganset Bay Commission's 31-MGD Bucklin Point, Rhode Island, wastewater treatment facility. Upon assuming responsibility for the wastewater treatment plant, Veolia Water immediately funded and implemented numerous capital improvements to improve

facility performance that included installation of Stamford baffles in the final clarifier; electrical soft starts on the four 25-MGD tidal effluent pumps; a dissolved air flotation pump; return sludge variable frequency drives; and dissolved oxygen monitors. These enhancements improved performance while reducing electrical costs.

- Contract O&M for water and wastewater facilities for the cities of Brockton, Cohasset, New Bedford, Lynn, and Fall River, Massachusetts.

- ***1994-1998:*** Served as Project Manager for the contract O&M for the City of New Bedford, Massachusetts' 30-MGD wastewater treatment facility. Responsibilities included management of the technical operation, physical maintenance and analytical programs; development of maintenance, clerical, technical and subordinate supervisory staff positions; administration of contract and assisting with pre-startup activities related to the City's new secondary treatment facility.

- ***1993-1994:*** Served as Operations Manager for the contract O&M of the City of New Bedford, Massachusetts' water pollution control facility. Responsible for ensuring effective plant performance and compliance with permit standards. Planned, organized, directed and controlled the operation of the City of New Bedford's water pollution control facility on all shifts.

- ***May 1993-September 1993:*** Served as Regional Safety Supervisor for contract O&M projects in the Northeastern U.S. Developed comprehensive safety, risk management and hazard communication programs at 12 privately contracted water and wastewater plants in New Jersey, New York, Rhode Island, Massachusetts and Ontario, Canada.

- ***1990-1993:*** Served as Chief Operator for contract O&M of the maintenance of the City of New Bedford's 30-MGD wastewater treatment plant, Massachusetts. Responsible for technical operation and physical maintenance of the City's wastewater treatment plant during scheduled shifts. Duties included operation of a multiple-hearth incinerator, daily laboratory analysis and liquid stream process control.

- ***1987-1990:*** Worked as an Environmental Technician for Olin-Aegis, Inc., New Bedford, Massachusetts. Responsible for the operation and maintenance of a privately owned wastewater treatment plant and fluorocarbon solvent recovery system. Duties included liquid stream process control, solids handling and effluent analysis using an atomic absorption photo spectrometer.

- ***1991-1997:*** Served as Analyst in Finance and Accounting Department of Indianapolis Water, the private company that managed the City of Indianapolis, Indiana's water system prior to the current contract with Veolia Water. Responsible for forecasting cash flow and managing banking relationships and $20 million credit lines.

Daniel C. Moran, P.E.

Process Engineer

Education:

MS, Civil Engineering, University of Texas at Austin, 1992
BS, Mechanical Engineering, University of Notre Dame, Indiana, 1985

Registrations/Licenses:

Professional Engineer, Indiana
Grade WT-5 and WT-3 Water Treatment Plant Operator Certification, Indiana
Class A-SO Wastewater Treatment Plant Operator Certification, Indiana

Professional Memberships/Activities:

American Water Works Association (AWWA)
AWWA Academic Awards Committee (1999-2002)
AWWA Taste and Odor Committee (2000-2003)

Background:

Mr. Moran is a Process Engineer with Veolia Water North America – Central, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). He is assigned to Veolia Water Indianapolis, and is responsible for process and water quality issues for the drinking water production facilities.

Mr. Moran has more than 20 years of engineering experience, including evaluation and implementation of process modifications to optimize water treatment plant performance; oversight of capital improvement upgrades to water treatment facilities; and negotiation with regulatory agencies on compliance issues. Process evaluations include design of pilot and/or bench scale testing programs aimed at meeting increasingly stringent water quality goals. Previous experience includes planning, design and implementation of environmental engineering projects for commercial and industrial clients.

Experience:

- ***2003-Present:*** Serves as Process Engineer for Veolia Water Indianapolis, LLC, which manages and operates Veolia Water's 20-year, $1.5 billion contract with the City of Indianapolis, Indiana, which includes all O&M, capital project work and customer service facets of the City's waterworks system, a system that currently serves 1.1 million people. Responsible for process and water quality issues for the drinking water production facilities, which consist of 12 water treatment plants with a combined capacity of 212 MGD. Also responsible for process control, operational troubleshooting, capital integration and research and development. Manages algaecide application program to mitigate problematic algal blooms in three water supply reservoirs. Coordinates research partnership with Indiana University-Purdue University at Indianapolis on watershed and reservoir management aimed at understanding and improving quality of Indianapolis water supplies, particularly related to problematic algae blooms. Coordinates Indianapolis Water involvement with various outside groups, including universities, consultants, and governmental agencies, on other treatment and water quality research and development activities.
- ***2002-2003:*** Served as Production Director, Veolia Water Indianapolis, during one-year transitional period, with responsibility for management of a $14 million budget and 86 personnel. Department responsible for operation, maintenance and water quality of 12 water treatment plants and control of 22 pumping stations.
- ***1998-2002:*** Served as Process Engineer for Indianapolis Water Company. Professional responsibilities consisted of evaluation and implementation of process modifications to optimize water treatment plant

performance; oversight of capital improvement upgrades to water treatment facilities; and negotiation with regulatory agencies on compliance issues. Process evaluations included design of pilot and/or bench scale testing programs aimed at meeting increasingly stringent water quality goals. Specific projects included development of operations protocol for disinfectant application at a 16-MGD water treatment plant, which resulted in reducing disinfection by-product concentrations while directly saving over $1,500,000 in planned facility upgrades; design review and construction oversight for the conversion of gaseous and solid water treatment chemicals to equivalent liquid chemicals at four water treatment plants with a combined capacity of 172 MGD; disinfection benchmark evaluations calculations used as the basis for design of three chlorine contact basins with over 11 MG of combined capacity; operation of conventional treatment, ozone disinfection and UV pilot plants.

- ***1995-1998***: Served as Senior Project Engineer, EarthTech, Indianapolis, Indiana. Provided consulting engineering services to commercial, industrial and governmental clients related to environmental regulations. Projects included groundwater remediation, hazardous waste treatment and management, and industrial permitting.
- ***1992-1995***: Served as Engineer, Hargis and Associates, Inc., La Jolla, California. Provided consulting engineering services primarily related to groundwater contamination and remediation. Worked extensively with large aerospace manufacturing clients on chlorinated solvent contamination issues.
- ***1990-1992***: Served as Graduate Research Assistant, Department of Civil Engineering, University of Texas at Austin, Texas. Conducted laboratory experiments to evaluate the effect of particle size and operating parameters on deep-bed water filtration. Operated a pilot-scale filter column and monitored for head loss, turbidity, and particle counts. Experiments were conducted at various flow rates and using various sized media on softened water from the Davis Water Treatment Plant in Austin, Texas. Developed laboratory procedures for accurate particle size measurements
- ***1985-1990***: Served as Design Engineer, LTV Aerospace & Defense, Dallas, Texas. Designed mechanical and hydraulic systems for advanced aircraft. Provided oversight and evaluation of full-scale system tests for first flight qualification of mechanical and hydraulic systems. Developed installation specifications to ensure proper operation of systems prior to flight.

Publications:

- Moran, D.C., A. Brassart, and J.M. Jeter. 2001. Variable Source Water Quality and Enhanced Coagulation Step 2 Testing: A Potential Compliance Nightmare. Proc. of the 2001 AWWA Annual Conference. Washington, D.C.: AWWA.
- Malley, Jr., J.P., B.A. Petri, G.V. Hunter, D. Moran and M. Nadeau. 2001. Full-Scale Implementation of Ultraviolet Disinfection in Groundwater Treatment Systems. Denver, Colorado. AwwaRF and AWWA.
- Petri, B.M., G. Fang, J.P. Malley, Jr., D.C. Moran, and H. Wright. 2000. Groundwater UV Disinfection: Challenges and Solutions. Proc. of the 2000 AWWA Water Quality Technology Conference. Salt Lake City, UT: AWWA.
- Moran, D.C., M.C. Moran, R.S. Cushing, and D.F. Lawler, 1993. Particle Behavior in Deep-Bed Filtration: Part 1 – Ripening and Breakthrough. JAWWA 85(12) 69.
- Moran, M.C., D.C. Moran, R.S. Cushing, and D.F. Lawler, 1993. Particle Behavior in Deep-Bed Filtration: Part 2 – Particle Detachment. JAWWA 85(12) 82.
- Moran, D.C., M.C. Seib, R.S. Cushing, and D.F. Lawler, 1992. Particle Size in Filtration: Dynamics of Ripening, Breakthrough and Breakoff. Proc. of the 1992 AWWA Annual Conference. Vancouver, B.C.: AWWA.

Chandra Mysore, PhD, PE, DEE

Director for Drinking Water Programs

VEOLIA Water

Education:

Ph.D., Environmental Engineering, University of Colorado
MS, Water Resources and Environmental Engineering, University of Hawaii
MS, Irrigation Engineering, University of Hawaii
BE, Civil Engineering, National Institute of Engineering, India

Registrations:

Professional Engineer: Georgia and Louisiana
Diplomate in Environmental Engineering, with expertise in Water and Wastewater Treatment

Professional Memberships/Activities:

American Academy of Environmental Engineers
American Water Works Association
International Ozone Association
International UV Association

Background:

Dr. Mysore is the Director for Drinking Water Programs with the Central Technical Support (CTS) group of Veolia Water North America Operating Services, LLC (Veolia Water). The role of this group is to provide technical support services to facilities owned, operated and managed by Veolia Water companies throughout North America.

Dr. Mysore has more than 20 years of experience in water, wastewater, soil and groundwater treatment systems employing advanced oxidation processes (Ozone/UV/H_2O_2), membranes, and biological filtration while working for local, federal, private and academic institutions.

Dr. Mysore has participated in numerous bench-scale, pilot and full-scale studies and has extensive experience in the design, construction, startup and commissioning of water and wastewater treatment systems. He was a part of the Veolia Water team for the design of Tampa Bay Water's new 66-MGD surface water treatment plant. This included managing and directing a bench-scale study aimed at characterizing the NOM (DOC=12-40 mg/L) and conducting enhanced coagulation studies (simulating the ACTIFLO® process) to determine coagulant dosages. Recommended static mixer with side stream for ozonation and participated in the preparation of the proposal, equipment selection, reviewing computations, plans, and specifications, design, permitting of the ozonation process. This static mixer design resulted in tremendous savings in capital, operation and maintenance costs with a small footprint for the ozonation process. He supported process studies at pilot-scale and studied bromate formation. Dr. Mysore also participated in partnership meetings and startup for Tampa Bay Water's new surface water plant.

Dr. Mysore has performed considerable research work in the area of membrane treatment, dealing with many of the issues and challenges that face your current desalination plant. He is currently managing the development of a low-pressure membrane knowledge base, which is focused on developing a comprehensive source of knowledge related to MF/UF membrane system planning, permitting, startup, and operations and maintenance. For this project, Dr. Mysore is overseeing the data garnering effort from Veolia Water utilities around the globe.

Experience:

- ***1998–Present:*** Serves as the Director for Drinking Water Programs with the CTS group of Veolia Water. The role of this group is to provide technical support services to facilities owned, operated and managed by Veolia Water companies throughout North America. Prior to this work as a part of the research and development team for Veolia Water's North American Technology Center in Atlanta. Involved in managing projects related to water and wastewater, submission of proposals to the USEPA, writing reports, presenting papers at national and international conferences, publishing in peer-reviewed journals and assisting in privatization efforts (operations, maintenance and management, O&M, and design/build/operate, DBO, projects) and troubleshooting at water plants. Also supervises several engineers, scientists and technicians.

  - Served as part of the Veolia Water due diligence, startup and support teams for the 20-year, $1.5 billion contract with the City of Indianapolis, Indiana. This project includes all O&M and customer service facets of the City's waterworks system, which serves more than 1.1 million people. This system is being managed and operated by Veolia Water under a long-term privatization agreement, and includes four surface water treatment plants, ranging in size from 16 to 96 MGD, and eight groundwater treatment plants, ranging in size from 0.86 to 12 MGD. Identified ozone-BAF process as the most suitable process to control taste and odor problems, reduce DBPs, algal toxins and inactivate microorganisms such as Cryptosporidium.
  - Provided technical support for the Wilsonville, Oregon project (15-MGD) design/build/operate project for a new water treatment plant. Reviewed water quality data and recommended static mixer with side stream for ozonation over the conventional fine bubble diffusion process with a technical report. The technical report compared the two process on a qualitatively and quantitative basis. Provided sections in the preparation of the proposal. Veolia Water was awarded the contract to operate the plant. Assisted in troubleshooting problems at the plant.

  Current and completed research work includes:

  - Micro- and Ultrafiltration Performance Specifications Based on Microbial Removal Efficiency" - This project was awarded is focused on developing a systematic performance testing protocol and specification for microfiltration (MF) and ultrafiltration (UF) membranes with respect to removal of viral and submicron bacterial pathogens thru bench-scale and pilot-scale studies. Dr. Mysore oversaw the pilot studies in the U.S. at various water utilities.
  - "Natural Organic Matter Fouling of Low Pressure Membranes " - This project focuses on improving the understanding of fouling of low pressure membranes by NOM through bench- and pilot-scale studies. Dr. Mysore will be overseeing the piloting effort in the U.S.
  - "Integration of Membrane Filtration into Water Treatment Systems" – This project will provide performance and operating data including a look at how effective membranes address water quality and public health issues. The review will also address the rationale of why membranes were added to the treatment train. Various configurations of membrane integration will be outlined (from RO to MF). Non-technical data, such as public perception of quality, will be included. Dr. Mysore oversaw gathering of the information at the various Veolia Water utilities that have integrated membranes into their processes.
  - "Optimization of Membrane Treatment for Direct and Clarified Water Filtration" - This project focuses on conceptual assessment, bench-scale investigations and field–scale evaluations to provide a comprehensive database from which the drinking water community can best decide when and how to integrate MF/UF technologies into their treatment plants particularly for integration of membranes into direct or clarified water filtration plants. Dr. Mysore is overseeing the pilot-study effort at the Atlanta/Fulton County water treatment in Georgia, a facility that is contract operated by Veolia Water.

- ***1996-1998:*** Served as Principal Engineer with Gwinnett County, Georgia. Performed hydraulic modeling of the water distribution system for Gwinnett County. System serves 500,000 residents, includes three pressure zones, 2,300 miles of water mains, 12 pump stations and 13 storage tanks. Reviewed existing storage and determined any additional storage that may be required to help meet peak demands and fire flow requirements, predicted future water requirements, impact of new lines and pump stations on the distribution system and evaluated low pressure conditions in several areas around the country. Participated in the upgrading and expansion of the water treatment plant (100 MGD to 150 MGD) and provided technical support in the installation of an ozone disinfection system at the Lanier water treatment plant in Georgia. Ozone is transferred to water by a side-stream venturi injection-downflow tube system, which achieves high ozone transfer efficiency.

Keavin L. Nelson, P.E.

Operations Manager and Vice President/Engineering Services Manager

Education:

BS, Civil Structural Design/Construction Management, Pennsylvania State University, 1977
MBA studies in progress, Pennsylvania State University

Registrations/Certifications:

Registered Professional Engineer: Pennsylvania, Maryland and the District of Columbia
Grade AO STP Wastewater Treatment Certification, Pennsylvania

Background:

Mr. Nelson is the Operations Manager for Veolia Water North America – Northeast, LLC, and has dual responsibility as the Vice President and Engineering Services Manager with the Capital Programs Management (CPM) group of Veolia Water North America Operating Services, LLC (Veolia Water) in the Northeast. In this role, he is responsible for directing and supporting design/build, design/build/operate (DBO) and capital project work at contract operations, maintenance and management (O&M) projects sites in the State of New Hampshire, as well as in the other areas served by Veolia Water's Northeast Business Center.

Mr. Nelson has over 28 years of progressive experience in the water and wastewater service industry, including 15 years of senior level management with responsibilities for multi-site operations, profit and loss, strategic planning, process re-engineering, design/build project team development, management and execution, business development and client and labor relations. With Veolia Water, Mr. Nelson has served in a variety of roles, ranging from Development Manager on major procurements to Vice President of Operations for projects in the U.S. and Canada.

Experience:

- ***2005-Present***: Serves Operations Manager for Veolia Water's O&M and related projects in the Northeast Business Center, and also as the regional Engineering Services Manager with Veolia Water's CPM group. In this dual role, focuses on managing and growing Veolia Water's existing O&M business, and also on seeking new DBO and capital project opportunities with existing and new clients in the Northeast.
- ***2003–2005***: Served as a Technical Manager with Veola Water, with responsibility as a national project resource, and as the Team Leader on major project development efforts. Most recently worked on addressing the O&M and capital project issues at the Wilmington, Delaware, wastewater O&M project.
- ***2001-2003:*** *Ser*ved as Regional Vice President of Municipal Business Development in Veolia Water's Mid-Atlantic Service Center. Responsible for the development and execution of municipal infrastructure and utility system privatization opportunities in a six-state region.
- ***2000-2001:*** Served as General Manager, North Region, of ADS Environmental, Inc. Managed all metering and assessment contracts, including profit and loss, marketing, and resource management. Services included sewer flow surveys, sanitary sewer evaluation surveys, metering equipment sales and installation, with regional gross revenue of $12 million. Managed marketing and operations staff for a 15-state territory.

- ***1997-2000:*** Served as Vice President of Engineering for U.S. Water, LLC. Directed the engineering and technical approach in the development of privatization project proposals, including assembling design/build teams in joint venture partnerships and managing project development. Activity included the direction and management of project teams to formulate the operational and technical strategic approach and design/build capital projects execution and transition to private operations. Operations responsibility included management of privatization transition, labor contract negotiations, process and operations optimization and environmental compliance.
- ***1994-1997:*** Served as Vice President and Project Manager for Wheelabrator EOS, Inc., a Veolia Water predecessor company. Developed privatization project strategies in the U.S. and Canada including development and management of project teams to formulate the technical approach, develop the required design/build teams and projects from conceptualization to execution. Joined the company in 1994 as the Vice President of Operations, responsible for the execution of all contracts for operation and ownership of water and wastewater facilities in the U.S. and Canada; also managed contract negotiations and labor agreements.
- ***1977-1994:*** Served in increasingly responsible positions for Buchart-Horn, Inc., an engineering and architectural firm specializing in water and wastewater projects. As Vice President/Regional Manager (1989-1994), was responsible for regional profit and loss, sales and client relations. As Assistant Vice President/Director of the Construction Management Division (1984-1989), managed the 55-person division, which executed all construction management and design/build services throughout the Mid-Atlantic region. Held full profit and loss responsibility for the Division. Joined the company as a Staff Engineer and served in this position for seven years.

Paul F. Noran, P.E.

Technical Manager

Education:

MS, Civil Engineering, University of Southern California
BS, Civil Engineering, San Jose State University

Registrations:

Professional Engineer:
Maine, New Hampshire, New Jersey, North Carolina, Pennsylvania, New York, Ohio, Illinois and California

Professional Memberships/Activities:

Chairman of the Engineering and Construction Division of the American Water Works Association (AWWA) – 1995-1999
Chair of Strategic Planning Committee for the Technical and Educational Council of the AWWA
Member of American Society of Civil Engineers

Background:

Mr. Noran is the Collection and Distribution Systems Technical Services Manager with Veolia Water North America Operating Services, LLC's (Veolia Water's) Central Technical Support (CTS) group. The role of this group is to provide technical support services to facilities owned, operated and managed by Veolia Water companies throughout North America.

In this role, Mr. Noran provides leadership for maintenance and asset management for Veolia Water and Veolia Water Canada Inc. contract operations, maintenance and management (O&M), design/build/operate (DBO) and related projects. He is also involved in recommending changes to improve operations, performance and customer satisfaction and in performing due diligence on systems being considered for operating contracts.

Mr. Noran has more than 32 of years of progressively responsible experience in the management of water supply systems, and in solving problems related to engineering, construction, operation, water supply, and wastewater collection and treatment facilities. He has specialized expertise in implementing best management practices for operating and managing water utilities.

Nationally, Mr. Noran was a participant in the U.S. Environmental Protection Agency's (EPA's) Blue Ribbon Committee to review treatment technologies and costs for small systems compliance. He has also been active in the AWWA and served as Chairman of the Engineering and Construction Division from 1995 to 1999.

Experience:

- ***2002-Present:*** Serves as the Collection and Distribution Systems Specialist with the CTS group of Veolia Water. Involved with project support, technical assistance and research and development activities related to solving problems in engineering, construction, operation, water supply, and wastewater collection and treatment facilities.
- ***2000-2002:*** Served as a Technical Manager with Veolia Water, involved in developing products that will enable our firm to gain the advantage in competing for new operating contracts and in recommending process changes to improve operations, performance and customer satisfaction.

- Worked as part of the due diligence, technical, transition and startup teams for the 20-year, $1.5 billion contract with the City of Indianapolis, Indiana. This project includes all O&M and customer service facets of the City's waterworks system, which serves more than 1.1 million people. This system is being managed and operated by Veolia Water under a long-term privatization agreement, and includes four surface water treatment plants, ranging in size from 16 to 96 MGD, and eight groundwater treatment plants, ranging in size from 0.86 to 12 MGD.

- ***1979-1999:*** Served as Vice President of Consumers Water Company, a publicly traded company with $100 million of annual revenues, with responsibility for water supply systems serving 750,000 people in a five-state area. Provided overall leadership and quality assurance for the multi-state utility, including all aspects of utility engineering and operations, with emphasis on major capital projects including infrastructure renewal and replacement. Overall responsibilities included working with operating companies to identify and implement process improvements and managing capital investments of $30 million of new investment each year. Led company's initiatives in the areas of environmental compliance, risk management and protection of shareholders investments. Directed engineering and construction for all major projects. Developed recommendations for capital investment to deliver shareholder earnings, improve customer satisfaction, improve the existing infrastructure and grow the business. Identified and developed strategic alliances to enhance growth.

- ***1973-1979:*** Served as Assistant Director of Hialeah Water and Sewer Department, Hialeah, Florida, a major utility serving 100,000 people. Responsible for planning and managing water and wastewater operations, including a staff of 115. Provided mission and direction to employees, and developed successful customer quality service.

David L. Peterson

Laboratory Supervisor

Education:

Bachelors Degree in Chemistry and Biology
Masters Degree in Biochemistry
Doctorate in Biochemistry

Registrations:

Grade WT3, Water Treatment Plant Operator, Indiana Department of Environmental Management
Grade WT5, Water Treatment Plant Operator, Indiana Department of Environmental Management
Grade DSL, Water Distribution System Operator, Department of Environmental Management
Class A-SO, Wastewater Treatment Plant Operator, Indiana Department of Environmental Management
American Chemical Society Member
American Society for Quality Member
American Water Works Association Member

Background:

Dr. Peterson is a Laboratory Supervisor with Veolia Water North America – Central, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). He is assigned to Veolia Water Indianapolis, is responsible for supervising a unique, state-of-the-art laboratory in instrumentation and methodology. Taste and Odor Compounds are quantified down to the parts per trillion level using Solid Phase Microextraction (SPME) methodology. Besides performing compliance and incentive monitoring, the laboratory has piloted process optimization using both traditional and new approaches. Using both his laboratory and plant operations experience, he provides sound direction to the team concerning treatment chemicals and techniques.

Experience:

- ***1994-Present:*** Serves as the Laboratory Supervisor for Veolia Water Indianapolis, LLC, which operates and manages Veolia Water's 20-year, $1.5 billion contract with the City of Indianapolis, Indiana, which includes all O&M, capital project work and customer service facets of the City's waterworks system, a system that currently serves 1.1 million people. Responsible for the operation and supervision of the purification laboratory. Performs TOX analysis on special basis and serves as alternate for all other analyses during absences. Supervises compliance, incentive and process testing and reporting. Prepares capital budget and plan for laboratory needs.
- ***1985-1994:*** Served as Corporate Quality Assurance Officer for Heritage Laboratories, Inc. Responsible for certifying all reports to clients and assuring compliance to EPA methods. Managed numerous large projects. Audited other laboratories and maintained and administered State, federal and private certifications.
- ***1982-1985:*** Served as Corporate Environmental Laboratory Supervisor for Cummins Engine Company. Operated and maintained Hewlett Package GC/MS. Performed study on raw rubber vulcanization off gases. Analyzed samples per OSHA/EPA/SM methodology. Calibrated and maintained sampling equipment. Served as Corporate authority on methods and chemistry. Supervised union laboratory technicians. Set up and maintained all laboratory instruments.
- ***1976-1982:*** Served as OSHA/RCRA Laboratory Supervisor for the Indiana State Board of Health. Supervised analytical chemists performing analyses, Served as Department of Labor laboratory expert. Calibrated and maintained all laboratory instrumentation. Performed special projects and special monitoring. Performed XRD analysis of bulk asbestos samples for schools.

Michael Schnack

Manager of Human Resources - Northeast

Education:

MBA, Management, University of Rhode Island
BA, Liberal Arts, Providence College

Professional Memberships/Activities:

Society for Human Resource Management
Planning Commissioner, Town of Jamestown, Rhode Island

Background:

Mr. Schnack is the Manager of Human Resources for Veolia Water North America – Northeast, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). He has over 10 years of human resources experience, and has managed all areas of Human Resources, including employment, employee relations, wage and benefit administration, labor relations, regulatory compliance and training.

Experience:

- ***2001-Present***: As Manager of Human Resources for Veolia Water in the Northeast, responsible for human resource activities and employee and labor relations in the service area that includes projects in the State of New Hampshire. Involved in coordinating benefits, human resources support and transition support for Veolia Water contract O&M projects in New England and New York.

- ***1998-2001:*** Directed all human resource activities, including benefits administration, compensation, compliance, recruiting and payroll administration for United Methodist Elder Care, East Providence, Rhode Island. Experienced with labor and employee relations, training, and developing personnel policies and procedures. Served as a labor contract administrator responsible for the administration of personnel policies, labor contract, grievance resolution and arbitration.

- ***1997-1998:*** Managed branch business and employment activities for Arbor Associates, a temporary staffing firm with offices in Boston, Worcester and Providence. Responsible for job development, customer and employee relations, compliance and training.

- ***1992-1997:*** Managed employment programs in the mental health field, providing employment training and counseling, job development, job analysis, career planning, job and skills training, and program marketing. Also experienced in employee relations, recruiting, screening and interviewing job candidates and supervision of personnel.

M. Scott Schrang

Assistant General Counsel

Education:

JD, University of Arkansas School of Law

BA, Business Administration and Economics, Austin College

Professional Memberships:

State Bar of Texas

American Bar Association

Background:

Mr. Schrang is the Assistant General Counsel for Veolia Water North America Operating Services, LLC (Veolia Water) and the Legal Counsel for Veolia Water North America – West, LLC, an autonomous business unit of Veolia Water. He has more than 15 years of experience in corporate law, specializing in litigation management, municipal law and environmental matters.

Experience:

- ***1997-Present:*** As Assistant General Counsel for Veolia Water, responsible for litigation management, employment and labor matters, contract drafting, municipal law, environmental and general corporate legal matters.

- ***1993-1997:*** Served as Counsel for a large industrial and residential overhead door company and its subsidiaries. Responsibilities included contract drafting, litigation management, patent and trademark administration, antitrust matters, acquisitions, product liability, labor relations, real estate and all distributor matters concerning the firm and its subsidiaries.

- ***1990-1993:*** Served as Staff Attorney for a large consumer electronics company. Responsible for all legal matters for the firm and subsidiaries, emphasizing contract drafting, litigation, patent and trademark administration, licensing agreements, antitrust, product liability and personnel matters.

- ***1988-1990:*** Served as Assistant City Attorney for the City of Fort Worth. Drafted and revised City ordinances and handled zoning and litigation matters.

- ***1987-1988:*** Served as an Associate for a private law firm. Handled commercial litigation and bankruptcy.

Joey J. Tolbert

Financial Analyst, Municipal Business Development

Education:

MS, Management Information Systems, Southern Illinois University at Edwardsville
AS, Accountancy, Southern Illinois University at Edwardsville
AAS, Accounting, Lewis & Clark Community College

Certification:

Certified Illinois Municipal Treasurer

Professional Memberships/Activities:

Southern Illinois University at Edwardsville Accounting Club
Phi Theta Kappa Honorary Fraternity
Phi Kappa Phi Honor Society
Beta Gamma Sigma
Rotary International (Past President, Wood River Rotary Club)
Loyal Order of the Moose, Lodge 1349
Southwestern Illinois Manager's Association
Government Finance Officers Association
Downstate Illinois Government Finance Officers Association
Illinois Municipal Treasurer's Association
River Bend Growth Association
Wood River Jaycees (Past President)
Southern Illinois University at Edwardsville Alumni Association Board of Directors
International City Management Association

Background:

Mr. Tolbert is the Financial Analyst, Municipal Business Development, for Veolia Water North America Operating Services, LLC (Veolia Water). He provides a financial and management support for operations, maintenance and management (O&M), design/build/operate (DBO) and related project and new business efforts in the U.S. and Canada.

Mr. Tolbert has more than 25 years of experience in finance, with and emphasis in the area of municipal finance. He has specialized experience in the areas of: personnel management, governmental administration and compliance; collection and disbursement of municipal funds; management of pension funds; preparation of budgets and financial statements; and oversight of all municipal financial obligations.

Experience:

- ***1999–Present***: Serves as the Financial Analyst, Municipal Business Development, for Veolia Water, with involvement in supporting ongoing projects and new business efforts.
- ***1998–1999***: Served as Financial Marketing Manager for Professional Services Group (PSG), a Veolia Water predecessor company. Provided financial analysis and marketing support to senior business development staff. Assisted client cities in developing alternative, innovative approaches to achieving

funding for capital improvements. Provided support to senior management and business development staff to aid their understanding of municipal finance.

- ***1994-1998***: Served as City Manager and City Chief Administrative Officer for City of Wood River, Illinois. Responsible for the overall operations and functions of the City, including personnel and administrative issues and governmental compliance.

- ***1987-1998:*** Served as City Treasurer for City of Wood River, Illinois. Responsible for the collection and distribution of all City funds; had fiduciary responsibility for pension funds.

- ***1995-1987:*** Served as Director of Finance for City of Wood River, Illinois. Had oversight of all City accounting functions, including general ledger, payroll, accounts payable and receivable, utility billing, investments, budget preparation, annual tax levy and timely preparation of City financial statements.

- ***1991-1994:*** Served as part-time instructor for Lewis and Clark Community College, Godfrey, Illinois. Taught Accounting I and II and Govemmental and Fund Accounting.

- ***1989:*** Served as Acting City Manager for City of Wood River, Illinois. In a temporary capacity, was the City's Chief Administrative Officer, with responsibility for the overall operations and functions of the City, including personnel and administrative issues and governmental compliance.

- ***1987-1998:*** Served as City Treasurer for City of Wood River, Illinois. Responsible for the collection and distribution of all City funds; had fiduciary responsibility for pension funds.

- ***1984:*** Served as Office Manager for Missouri Mills, Inc., St. Louis, Missouri. Responsible for oversight of all functions of operations and provided support services for the trade floor of Merchants Exchange.

- ***1979-1984:*** Served as Grain Accountant for Peavey Company, Alton, Illinois. Responsible for the daily position of the firm in relation to the Chicago Board of Trade. Assisted grain traders in local, national and international grain trades.

Joe Tomashosky, CPA

Vice President of Finance

Education:

BA, Business Economics with Accounting Concentration, University of Pittsburgh, 1979

Certification:

Certified Public Accountant, Pennsylvania, 1981

Background:

Mr. Tomashosky is a Vice President of Finance for Veolia Water North America Operating Services, LLC. (Veolia Water). He is responsible for the financial aspects for business development of long-term contracts, and project financing analysis and risk assessment.

Since joining Veolia Water in 1994, Mr. Tomashosky has held positions of increasing responsibility, including Vice President of Finance and Group Controller for the Industrial Equipment Group of Veolia Water; Vice President, Assistant Treasurer, Assistant Secretary and Officer of Veolia Water North America.

Mr. Tomashosky has more than 25 years of experience in finance with emphasis on business growth through acquisition and long-term contract development.

Experience:

- ***1994-Present***: Serves as a Vice President of Finance for Veolia Water, with responsibility for project finance analysis, risk assessment and support for new business initiatives.
- ***1991-1994:*** Served as Chief Financial Officer for Koppel Steel Corporation, Koppel, Pennsylvania, the largest wholly owned subsidiary of the publicly traded NS Group.
- ***1987-1991***: Served as Vice President of Finance and Chief Financial Officer for Genesis Packaging Systems, Pittsburgh, Pennsylvania, formerly a Greenfield startup of ALCOA and CMB.
- ***1985-1987:*** Self-employed CPA, Baltimore, Maryland.
- ***1983-1985:*** Served as CPA for Arthur Andersen, Baltimore, Maryland.
- ***1981-1983:*** Served as Chief Financial Officer for Key Oil Company, Weston, West Virginia, and Titusville, Pennsylvania.
- ***1981-1991:*** Adjunct Instructor of Accounting, University of Pittsburgh, Titusville, Pennsylvania; University of Charleston, West Virginia; and York College, York, Pennsylvania.
- ***1978-1981:*** Served as CPA for Donald Sarp & Company, Greensburg, Pennsylvania.

James Washburn

Director of Network and Infrastructure

Education/Training:

Technical courses for MCSE
CCDA Course for Cisco Certification

Certifications:

Cisco Certified Design Associate
3.12, 4.11 and 5.1 CNE

Background:

Mr. Washburn is the Director of Network and Infrastructure for Veolia Water North America Operating Services, LLC. He was responsible for building the network and infrastructure for Veolia Water's 20-year water system management and operations contract with the City of Indianapolis, Indiana.

Mr. Washburn currently manages Veolia Water's corporate data center, which is located in Indianapolis, as well as the company-wide network for Veolia Water.

Mr. Washburn has over 24 years of experience, which includes project management, help desk management, hardware and software support and local and wide are network installations and support.

Experience:

- ***2000-Present:*** Serves as the Director of Network and Infrastructure for Veolia Water. Manages IT policies, procedures and service level agreements; the IT departmental budget and process improvements. Review, analyzes, recommend and implements network hardware, software, topologies, architecture and tools. Technical responsibilities include server management, network monitoring, telephony management, data security, virus/security protection, server/data availability and remote accesses. Project lead for the corporate data center relocation to Veolia Water's Indianapolis facility. Facilitated migration of corporate held desk support to Veolia Water in Indianapolis. Project lead for 300 user Office 97 to Office CP migration.
- ***1999-2000:*** Served as Senor Systems Engineer for Microage, Indianapolis, Indiana. Managed 300-user help desk. Provided technical support for Local and Wide Area network products. Installed and managed Novell 4.11 server and NT 4.0 server. Consultant for various clients on Lan/Wan server, and desktop issues.
- ***1998-1999:*** Served as Systems Engineer for Vanstar, Indianapolis, Indiana. Managed a 3,270 terminal replacement with IBM PC for Indianapolis Water. Developed and implemented corporate Indianapolis Water LAN/WAN.
- ***1985-1998:*** Served as Systems Network Engineer for Memorex Telex Computer Products. Provided PC hardware and software support, and local and wide area network installation and support.
- ***1981-1985***: Served as Avionic Sensor Systems Specialist for the U.S. Air Force. Maintained computerized infrared and laser target designation systems.

Debbie Willis

Director - Customer Relations

Education:

University of Indianapolis – Supervisor Certificate
Dwyer School of Business – Data Entry Certificate

Professional Memberships:

American Water Works Association (AWWA)
Society of Consumer Affairs Professionals (SOCAP)

Background:

Ms. Willis is a Customer Relations Director with Veolia Water North America – Central, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). In this role, she is primarily involved with the provision of customer services and client relations for Veolia Water's water system operations and management contract with the City of Indianapolis, Indiana.

Ms. Willis has over 25 years of experience in the utility service business, with 10 of those years in Business Supervision. She coordinated the transition and training for her area when the sewer billing process for the City of Indianapolis was combined with the billing and customer relations operations of the Indianapolis Water Company.

Over the past year, Ms. Willis has been instrumental in contractual incentives for call answer and abandoned rates for Veolia Water's contract with the City of Indianapolis. She also worked closely with the Information Technology staff to implement technology and program enhancements as well as working with other Veolia resources. Additionally, Ms. Willis has assisted in directing a customer relations team that provides billing, cash application, collections and contact center services to some 18 municipal clients.

Experience:

- ***2003-Present:*** Serves as Director for Customer Relations with Veolia Water in Indianapolis. Responsible for a customer service staff of approximately 60 which includes call center operations, customer complaint resolutions, collections and cash applications, remittance processing and billing services quality assurance.
- ***2000-2003:*** Served as the Manager of Customer Contact for Indianapolis Water, prior to transitioning to Veolia Water. Managed team leaders for call center operations, and successfully implemented Interactive Voice Response (IVR) and recording system technology.
- ***1998-2000:*** Worked as an Accounts Payable Clerk for Grand Strand Water & Sewer, Myrtle Beach, South Carolina.
- ***1993-1995:*** Served as the Supervisor Customer Accounts for Indianapolis Water. Responsible for coordinating and prioritizing the work load for 10 accounting clerks, initiating new customer accounts, auditing accounts for billing accuracy, and approving billing adjustments and refunds. Duties also included supervising reconciling payments to deposits and cash collected to daily receipts and reconciling bank statements. Also responsible for supervising wire transfers in excess of $100,000 daily and approving agent invoices for payment.

- ***1988-1993:*** Worked as the Supervisor of Customer Accounts for Indianapolis Water. Supervised and trained data entry clerks, billing adjustment clerks and relief clerks, coordinated and scheduled relief for three departments and interviewed and hired new employees. Also served as backup for the customer contact supervisor and administered progress reports and annual reviews.
- ***1985-1988:*** Worked as a Customer Service Trainer Representative with Indianapolis Water. Was responsible for training new employees, preparing training and reference manuals and assisting with supervision. Also served as relief in all positions.
- ***1977-1985:*** Worked as a Customer Service Representative with Indianapolis Water. Performed all customer contact functions in the water industry, including orders to restore service, discontinue service, high bill complaints, billing adjustments, payment arrangements, water quality and cold weather problems.
- **1972-1977:** Worked as a Data Entry Operator with Indianapolis Water.

William J. Wolf, CPA

Controller

Education:

BS, Business/Accounting, Indiana University School of Business

Professional Memberships:

Indiana State Board of Public Accountancy

Background:

Mr. Wolf is a Controller with Veolia Water North America – Central LLC, an autonomous business unit of Veolia Water North America Operating Services LLC (Veolia Water). In this role, he is responsible for oversight of all financial reporting and audits as well as developing and implementing business plans.

Experience:

- ***2004-Present:*** Serves as Controller for Veolia Water in the Central U.S. and with Veolia Water Indianapolis LLC, which operates and manages Veolia Water's 20-year, $1.5 billion contract with the City of Indianapolis, Indiana. Oversees financial closing, reporting and reconciliation. Coordinates annual independent audits and compiles annual reports. Supervises and reviews recording of utility plan and operation and maintenance expense accounting records maintained under regulatory accounting.

- ***2000-2004:*** Served as Comptroller for American Water Works Service Company, Indiana. Oversaw preparation of annual strategic business plan including market plan, business development plan, regulatory/rate plan, detailed five-year financial plan and balanced scorecard. Monitored and investigated actual-plan variances, initiated cost control initiatives, reviewed financial position and profitability, and coordinated with operations in execution of business plan. Implemented and oversaw ongoing application of International Accounting Standards for consolidation of data with parent company. Devised and executed action plans to integrate acquired companies, including information systems and procedures, with goal to maximize accretion to EPS. Provided financial counsel and advice to al functions for strategic and operational decision-making. Administered information technology services function for three-state region including oversight of five-member professional staff. Coordinated annual independent audit; compiled annual report; analyzed effect of new and proposed tax law, GAASP and IAS; and prepared Form 1120.
- ***1999-2000:*** Served as Director, Accounting and Assistant Treasurer for Indiana-American Water Company, Inc., Indiana. Automated the tax provision and return process by integrating directly from general ledger to Insource CS tax system. Analyzed tax effects of proposed transactions; analyzed and forecasted effective tax rates; identified tax savings opportunities.
- ***1993-1999:*** Served as Assistant Director, Accounting and Assistant Treasurer, Indiana-American Water Company, Inc., Indiana. Implemented JD Edwards ERP system, including job cost, inventory, fixed assets, PO, payroll and GL. Maximized integration of all modules and trained end users. Prepared income, property and other tax returns and calculated current and deferred income tax provisions. Oversaw financial closing, consolidation, reporting and reconciliation.

- ***1992-1993:*** Served as Comptroller and Assistant Treasurer for Consolidated Water Services, Inc., Indiana. Administered loan agreements and cash position. Coordinated banking services and issuance of long-term securities with institutional investors through private placement, including issuance of tax exempt financing under state program. Responsible for administration of accounting, reporting, budgeting and financing for nine subsidiaries in five states.
- ***1990-1992:*** Served as Assistant Director of Accounting and Assistant Treasurer, Consolidated Water Services, Inc., Indiana. Prepared accounting, financial, regulatory and tax reports. Performed financial closing and reporting for five entities with over 25 operating locations. Coordinated year-end audit and preparation of schedules and documentation for independent accountants. Implemented automated property and customer billing mainframe computer systems.
- ***1985-1990:*** Served as Supervising Senior Accountant for KPMG Peat Marwick, Indiana. Simultaneously managed several client audit engagements while meeting strict reporting deadlines. Supervised staff testing and performance, coordinated audits directly with client senior management from planning state to completion. Reviewed accounting systems and controls in various industries including manufacturing, financial institutions, transportation, agribusiness and utilities. Analyzed financial statements for compliance with GAAP, SEC and IRS reporting requirements. Coordinated specialized engagements including acquisition auditing, compilation and review and tax services. Assessed client risk and designed appropriate audit procedures and reviewed and performed analytical and detail substantive audit testing. Prepared tax returns.

Roy P. Wood, Jr.

Area Manager

Education/Training:

AS, Dundalk Community College, Baltimore, Maryland

Other Training:

- Zenger Miller Effective Supervision
- Water Fluoridation Operating Training Certificate of Competency
- Lead and Copper Rule
- Well Rehabilitation and Maintenance
- Road Safety for Water Utilities

Certifications:

Grade VI Wastewater Plant Operator, Massachusetts
Grade IV Water Distribution Operator, Massachusetts
Grade IV Water Treatment Operator, Massachusetts

Professional Memberships:

American Water Works Association
Massachusetts Water Pollution Control Association
New England Water Pollution Control Federation
Water Environment Federation

Background:

Mr. Wood is an Area Manager with Veolia Water North America – Northeast, LLC, an autonomous business unit of Veolia Water North America Operating Services, LLC (Veolia Water). He has more than 20 years of experience in the management of water and wastewater treatment facilities.

Mr. Wood's specialized expertise includes water treatment and distribution operation and maintenance, advanced wastewater treatment and collection system operation and maintenance, technical evaluations, proposal preparation, community and customer relations, and facility economics.

Experience:

- ***1997-Present:*** Serves as Area Manager for Veolia Water, providing oversight, management and support for operations, maintenance and management (O&M) and related services in the State of New Hampshire, and other parts of the region. Provides direct supervision and oversight for water and wastewater treatment facilities in this services area. Manages a staff of project managers in the operation and maintenance of these facilities and ensures contract obligations are met. Also assists with financial management, personnel selection, client interfacing and technical troubleshooting. Provides support to the sales group and is routinely engaged in due diligence efforts.

- ***1996-1997:*** Served as Plant Manager for Veolia Water's contract operations for the Town of Westborough, Massachusetts' water treatment plant and 11 remote water stations. Responsibilities

included process control, maintenance management, budgeting, staffing, training, scheduling, accounting, client and public relations, and all other activities associated with plant operations.

- ***1989-1996:*** Served as Plant Manager for Veolia Water's contract operations for the Town of Sturbridge, Massachusetts' wastewater treatment plant and collection system and water treatment plant and distribution system. Responsibilities included process control, maintenance management, budgeting, staffing, training, scheduling, accounting, client and public relations, and all other activities associated with operating the plant consistent with the terms of the contract.

- ***1987-1989:*** Served as Assistant Plant Manager for Veolia Water's contract operations at Leominster, Massachusetts. Coordinated operations and maintenance activities at the wastewater treatment plant, including scheduling personnel, purchasing, and providing input relative to process control.

- ***1986-1987:*** Served as Operations Coordinator for Veolia Water at the Blue Plains Wastewater Treatment Facility, Washington, D.C.

- ***1985-1986:*** Served as Lead Operator for Veolia Water at the wastewater treatment facility at the Calvert Cliffs Nuclear Power Plant in Maryland.

- ***1984-1985:*** Served as Plant Operator for the Howard County Department of Public Works at the Little Patuxent Wastewater Treatment Facility, Howard County, Maryland.

Mark L. Wetzel, P.E.
Project Manager

Mr. Wetzel has 27 years of waterworks engineering experience including planning, design and construction of new supplies, water mains, pumping stations, storage facilities and water treatment facilities.

Projects with applicability to the proposed project include:

Well No. 6 VOC Treatment Study; Merrimack, New Hampshire: Responsible for a report to evaluate treatment options and costs for a well that was contaminated with volatile organic chemicals. Treatment alternatives that were evaluated included packed tower aeration and granular activated carbon.

Master Plan; Water Supply District of Acton, Massachusetts: Project manager for Master Plan updates completed in 1987 and 1995 to evaluate the impacts of growth on the water system and determine supply development options and plans. A computerized hydraulic model of the system was used to evaluate the distribution system capacity and required capital improvements.

Master Plan; Auburn Water District, Massachusetts: Project manager for a Water System Master Plan that addressed water supply needs, water quality problems, distribution system restrictions and distribution storage needs. The report recommended specific distribution system improvements, replacement of undersized water mains, installation of corrosion control facilities, iron and manganese treatment and an optimization plan for maximizing the District's existing supplies.

Master Plan; Grafton Water District, Massachusetts: Project engineer/manager responsible for Water System Master Plan. A computer model of the system was developed and all proposed system expansions and improvements are simulated to determine available flows, pressures and potential problems. The Master Plan was prepared to evaluate flow restrictions, pressure problem areas and the implementation of new improvements including tanks, new well supplies and water mains. An AutoCAD base map of the Water District system was also developed.

Master Plan; Westford, Massachusetts: Project manager for a comprehensive Water System Master Plan for the Water Department. A comprehensive computer model was developed and calibrated and existing future flow scenarios were simulated. The model included high and low service zones, seven supply sources, four storage facilities and pressure reducing valves. A short- and long-term capital improvement plan was prepared.

Facility Evaluation Report; Wayland, Massachusetts: Project manager responsible for an evaluation of all water department facilities for compliance with regulatory standards, reliability and efficiency and a detailed hydraulic analysis of the system utilizing a computer model was performed. Improvements were recommended.

Master Plan, Tyngsborough Water District; Massachusetts: Project manager responsible for completing a Master Plan that considered the needs of the complete Town and the eventual interconnections and consolidation of the six systems presently serving the Town. Improvement alternatives were evaluated using an AutoCAD-based computer model. AutoCAD water system maps of the existing and proposed water systems were developed.

EDUCATION

B.S. Civil Engineering
University of Vermont 1978

PROFESSIONAL REGISTRATION

Licensed Professional Engineer in Massachusetts, Vermont and New Hampshire

PROFESSIONAL AFFILIATIONS

American Water Works Association

New England Water Works Association

Massachusetts Water Works Association

Tau Beta Phi Eng. Fraternity

Chi Epsilon Honor Society

AWARDS

Mass Water Works Association – *William McGuiness Award*, 2000

ACEC Massachusetts - *Engineering Excellence Platinum Award - Spruce Road Well Water Treatment Facility*, 2003

Dufresne-Henry

Mark L. Wetzel, P.E.
Project Manager

Water System Study; Plainville, Massachusetts: Project manager for preparation of a comprehensive water study including analyses of supply capacity, storage and distribution system. AutoCAD-based computer model was used for analysis of distribution system. A short- and long-term capital improvement plan was developed.

Master Plan; Norfolk, Massachusetts: Project manager responsible for water system Master Plan and update in 1985 and 1993. The study included development of capital improvement plan addressing implementation of new supplies, storage and distribution system improvements.

Comprehensive Water System Study; Watertown, Connecticut: Project manager responsible for preparing a Comprehensive Water System Study, in compliance with Connecticut State Requirements. Project evaluated existing system, water supply, future service areas, financial planning and emergency contingency planning. A distribution system model and detailed water system maps were developed.

Water Distribution and Transmission Systems; Grafton Water District, Massachusetts: Project manager, responsible for the design and construction of more than 14,000 linear feet of distribution and transmission mains throughout the District that have included a long-skewed embankment-type railroad crossing, bridge crossings and downtown area replacement mains.

Water Distribution and Transmission Systems; Norfolk, Massachusetts: Project manager responsible for the design and construction of over 10 miles of new large-diameter distribution and transmission system water mains that included state highway, railroad bridge crossings, wetlands crossings, and downtown area replacement. Some projects involved DEP grant funding.

Water Distribution and Transmission System; Westford, Massachusetts: Project manager responsible for the design and construction of over 8 miles of distribution and transmission main improvements. These projects were based on the implementation of recommendations in the system Master Plan Study.

Iron and Manganese Removal Water Treatment Plant Design; Bourne, Massachusetts: Project manager for the North Sagamore Water District's Church Lane water treatment plant. The water treatment plant has a capacity of 2 mgd and greensand pressure filters for removal of iron and manganese. Backwash is to on-site infiltration basins. The project is funded by DWSRF low interest loans.

Iron and Manganese Removal Plant Assessment for Compliance with SDWA; Plainville, Massachusetts: Project manager responsible for the evaluation of the Town's iron and manganese removal plant for compliance with the SWTR as an alternative filtration technology. One of the three wells feeding the treatment plant was determined to be under the direct influence of surface water. The focus of the report was to evaluate simulated *Giardia* and *Cryptosporidium* removal through the pressurized greensand filtration plant through the assessment of particle counts.

Globe Hollow Water Treatment Plant; Manchester, Connecticut: Project engineer responsible for the design and construction services of a 6-mgd surface water treatment facility utilizing conventional treatment process.

Dufresne-Henry

Mark L. Wetzel, P.E.
Project Manager

Aquifer Protection Planning; Warren Water District, Massachusetts: Provided consulting services to the Water District to develop a water resource zoning overlay district to protect the Town's water resources and supplies.

Aquifer Protection Planning; Westford, Massachusetts: Provided consulting services to a town committee to update the water resources protection bylaws and maps including development of water resource protection boundaries based on geological data.

Interbasin Transfer Permitting; Plainville, Massachusetts: Project manager for the permitting of a new water supply well which required a State Interbasin Transfer Permit. The services included stream flow evaluation, mass water balance, withdrawal analysis, water conservation planning and development of a groundwater management plan.

Aquifer Impact Study; Westford, Massachusetts: Project manager for evaluation of large municipal development on the Town's existing and proposed wells. Study included computer modeling of aquifer and development of a mitigation plan.

Highland Tank; Plainville, Massachusetts: Project Manager responsible for planning, design and construction services for a new 1.5 MG concrete storage tank with an 84-foot diameter and 36-foot side water depth for the Town of Plainville Water & Sewer Department. The project also included 2,600 LF of new 12-inch water main to connect a new water storage tank to the distribution system.

Pondville Water Storage Tank; Norfolk, Massachusetts: Project manager responsible for the design and construction services for a 1.1-MG precast, prestressed concrete water storage standpipe. The standpipe is 75 feet high, one of the tallest concrete tanks in the country. The project also included a dechlorination facility.

Webster Farm Standpipe; Groveland, Massachusetts: Project manager responsible for the design of the tallest precast, prestressed concrete standpipe in New England, with a water depth of 85 feet. The project required special design considerations due to the height and also included a hydrodynamic (mixing) system.

SCADA System; N Sagamore Water District: Project manager responsible for the design/construction services for water system supervisory control and data acquisition (SCADA) system implemented as part of a new well project. Design was computer based for three pumping stations and three storage facilities and utilized radio telemetry for communication to the control office.

SCADA System; Westford, Massachusetts: Project manager responsible for the design/construction services for town-wide water system supervisory control and data acquisition (SCADA) system. Design was computer based for seven pumping stations and three storage facilities and utilized radio telemetry for communication to the control office.

SCADA System; Norwell, Massachusetts: Project manager responsible for design and bidding services for a Supervisory Control and Data Acquisition (SCADA) System for 9 pumping stations and 2 storage tanks. The system used radio telemetry for communications and state-of-the-art software for water system control and monitoring.

Mark L. Wetzel, P.E.
Project Manager

Water System Vulnerability Assessment and Revised Emergency Response Plan; Concord, New Hampshire: Project officer responsible for overseeing the preparation of a vulnerability assessment and emergency response plan for the City of Concord, NH water system. Provided project input on methodology and performed quality control reviews.

Water System Vulnerability Assessment; Watertown, Massachusetts: Project manager responsible for preparing vulnerability assessment for the Town of Watertown, MA, which is part of the MWRA supply system.

Vulnerability Assessment and Emergency Response Plan; Norfolk, Massachusetts: Project manager for preparation of a vulnerability assessment and Emergency Response Plan for a medium-size system with two groundwater supplies and two water storage tanks.

Vulnerability Assessment and Emergency Response Plan; Chelmsford Water District, Massachusetts: Project manager for preparation of a vulnerability assessment and Emergency Response Plan for a medium-size system with 12 wells and five water storage tanks.

Vulnerability Assessment and Emergency Response Plan; North Sagamore Water District, Massachusetts: Provided technical assistance to small water system in order to complete the Vulnerability Self-Assessment in accordance with EPA requirements.

Plainville Water & Sewer Department: Project manager responsible for reviewing water/sewer system extensions, subdivision design plans and providing technical assistance on miscellaneous water and sewer department needs. Some specific assignments include hydraulic analysis, leak detection, water treatment operation, evaluation and DEP regulatory compliance.

Grafton Water District: Project manager responsible for hydraulic analysis, design review, field inspection and testing and miscellaneous engineering services as requested by the Water District. Specific assignments include water quality problems, water distribution upgrades, and regulatory assistance.

Westford Water Department: Project manager responsible for technical services and engineering as requested by the Water Department, including plan review, water quality monitoring/evaluation, CAD mapping and hydraulic analysis. Other assignments include wellhead protection, capacity analysis, and landfill monitoring.

Christopher A. Cockshaw, P.E.
Capital Planning & Modeling

EDUCATION

BS, Civil Engineering
Northeastern University
Boston, MA - 1995

MS, Environmental Engineering,
Northeastern University
Boston, MA - 2001Cum Laude

MBA, Suffolk University
Boston, MA
May, 2005

PROFESSIONAL REGISTRATION

Registered Professional Engineer in Massachusetts and New Hampshire

PROFESSIONAL AFFILIATIONS

- New England Water Works Association
(Recipient of the NEWWA Francis X. Crowley Scholarship)

- American Water Works Association - Society of American Military Engineers

PUBLICATIONS AND PRESENTATIONS

"Drought Management Planning" NEWWA 2002 Joint Regional Conference and Exhibition

"Six Leadership Styles" NEWWA, December 2004 Meeting

"Canadian Geese- Effective Team Building in your Organization" NEWWA 2005 Joint Regional Conference and Exhibition

Mr. Cockshaw has over 10 years of experience in water and wastewater system engineering from work performed with previous employers and Dufresne-Henry in Massachusetts and New Hampshire communities. He has direct and current experience on design and construction administration of collection and distribution systems, water storage tanks, water pumping stations, and water treatment facilities. He has authored reports and planning studies including drought management plans, water conservation plans, and watershed management plans.

Projects with applicability to the proposed project include:

Massachusetts Water Resources Authority: Lead design engineer responsible for the design of 18,000 linear feet of new 48-inch diameter water main through Belmont, Watertown and Boston, Massachusetts. The project consisted of a pipe crossing across the Charles River, a pipe and pedestrian underpass under an active railroad, extensive utility relocation, street reconstruction, and traffic management. Critical issues included an extensive alternatives analysis of methods to cross the Charles River and coordination with local, state, and federal agencies.

Water Transmission Main Design - Cape Haze Drive to Fiveland Storage Tank; Charlotte County Utilities, Charlotte County, Florida: Project manager and primary designer for the development of plans and specifications for a one-half mile of 10-inch water transmission main. Work also included the design of an automatic control system for flow into the existing Fiveland Water Storage Tank along with a tank bypass system. The control and monitoring equipment was tied into the existing Data Flow Telemetry.

Water Main Flushing Programs; Melrose, Massachusetts and Washington, D.C.: Project Manager responsible for conducting a unidirectional flushing program for these cities. Duties include creating a water distribution map including all hydrants and valves, establishing flushing methodology and criteria, establishing flushing criteria, creating record keeping procedures, and training local water department personnel on effective flushing program implementation.

Drought Management Plan and Water Conservation Program, North Andover, Massachusetts: Project Manager responsible for development of a Drought Management Plan and Water Conservation Program. The project consisted of defining the limits of the existing water supply by conducting a firm yield analysis, conducting a supply-demand assessment, establishing drought trigger levels, establishing drought mitigation measures, and estimating the expected water consumption savings. Conservation measures included the creation of water system bylaws for lawn watering, the encouragement of low flow plumbing fixtures, and xeriscaping.

Water Distribution System Studies; Amesbury, Massachusetts, Melrose, Massachusetts: Project Manager responsible for the creation of a water distribution model using Haestad Methods software. This study led to a capital improvements plan to implement water distribution system improvements within the town.

Water Distribution System Study; Boston Water and Sewer Commission, Boston, Massachusetts: Project Manager responsible for the creation of a 22,000 pipe water distribution model using H_2ONET software. This study also included a water quality analysis model, for use in tracking contamination or chlorine residual throughout a distribution system. This water model is currently the largest water quality model in the world.

Dufresne-Henry

Christopher A. Cockshaw, P.E.
Capital Planning & Modeling

Water Distribution System Study; City of Fitchburg, Massachusetts: Project Manager responsible for the update of a water distribution model for the City of Fitchburg using H_2ONET software. Since Fitchburg is the second hilliest city in the United States (behind San Francisco, CA), this study focused on the design of three extra-high service areas for the City to address their water storage needs at all their higher elevations. The project involved pump station and storage tank siting, service area boundaries, and cost-benefit analyses.

Water Distribution System Study; Hazardville Water District, Connecticut: Project Manager responsible for the creation of a water distribution model. This model utilized KY-pipe, one of the first hydraulic water models that did not use punch-cards. Although this model is now obsolete, it established the foundation for all water models today.

County-Wide Water Supply Master Plan, Charlotte County Utilities, Charlotte County, Florida: Project manager responsible for the development of a water supply master plan to meet the current and future water resource needs for Charlotte County. The plan evaluated current water sources, potential future water sources, water conservation, and existing water resources including stormwater and groundwater. The infrastructure required to serve the current future water needs was also evaluated. The plan also described the County's position as a part of the Peace River/Manasota Regional Water Supply Authority and the Regional Water Planning Alliance and will describe current regional planning initiatives and directions.

Water Supply System Management Plan/Master Plan; Bristol County Water Authority: Project Manager responsible for development of a Water Supply System Management Plan/Master Plan for the upgrade of a water supply system in Barrington, Bristol, and Warren, Rhode Island. Duties included data acquisition, coordination with local and state agencies, water supply management, water demand analysis, an emergency response action plan, GIS mapping of all facilities and infrastructure, and water quality protection.

Watershed Protection Plan; Newburyport Water Works: Project Manager responsible for the development of a Watershed Protection Plan for the Towns of Newburyport, Newbury, and West Newbury, Massachusetts. Duties included defining the watershed around the existing water supply reservoirs, GIS mapping all land use and areas of environmental concern, creating a sampling program, and establishing controls to protect the watershed and water quality.

Comprehensive Wastewater Management Plan; Plainville Massachusetts: Project Manager responsible for the development of a Comprehensive Wastewater Management Plan for the Town of Plainville, Massachusetts. Duties included an analysis of current wastewater conditions, a projection of build out conditions, a review of on-site systems, GIS mapping all land use and areas of environmental concern, and establishing measures to control wastewater collection system growth. Recommendations included wastewater treatment, wastewater collection, on-site system, and infiltration and inflow improvements.

Vulnerability Assessment and Emergency Response Plan; Concord, New Hampshire: Project Manager responsible for the development of a vulnerability assessment and emergency response plan for the City of Concord's water treatment, distribution, and storage system. The vulnerability assessment included a risk assessment of every resource (infrastructure, personnel, assets) of the water system. A three-phase plan was prepared to provide increased security throughout the system.

Christopher A. Cockshaw, P.E.
Capital Planning & Modeling

Water Audits; Town of Wrentham and City of Brockton, Massachusetts: Project Manager responsible for performing water audits for these communities. Duties included establishing water use history in an effort to establish unaccounted-for water. End result was to define unaccounted-for water locations and analyze water rate structure.

Second Groundwater Source; Milton Water District, Milton, New Hampshire: Project Manager responsible for the design of a second groundwater source for the district by redeveloping an existing wellfield, which was originally installed in 1990 and never put online. Duties included: Completing an alternatives analysis to determine if a surface water solution would be more effective, rehabilitating the existing test wells, water quality testing, groundwater source approval, permit applications, and a large groundwater notification process. Future work includes the design and construction of production wells, a water pumping station, and ductile iron water main to connect to the existing system. Part of this project involves horizontal directional drilling under Milton Pond.

Thomas J. Mahanna, P.E.
Capital Project Execution

Mr. Mahanna is a civil engineer with over 16 years of experience in the field of municipal water works. He has extensive experience in all aspects of water treatment engineering, with particular focus on water storage and distribution design. Mr. Mahanna has managed dozens of water works projects for municipal clients. He is a member of the Massachusetts Water Works Association and New England Water Works Association.

Projects with applicability to the proposed project include:

Master Plan, Tyngsborough Water District, Massachusetts: Project Engineer, responsible for developing a Master Plan that considered the needs of the complete Town and the eventual interconnections and consolidation of the six systems presently serving the Town. Improvement alternatives were evaluated using an AutoCAD based computer model. AutoCAD water system maps of the existing and proposed water systems were developed. Master Plan was updated in 2002 to included impacts of three large proposed developments that would double the customer base of the District.

Distribution System Analysis, North Chelmsford Water District, Massachusetts: Project Manager, responsible for hydraulic study of the North Chelmsford Water District using an AutoCAD based computer model. The study was initially undertaken to choose the optimum of six different sites for a new storage tank. The model will continue to be used for future planning and improvements to the system.

Water Treatment Plants; Westford, Massachusetts: Project Manager, responsible for design and construction of two iron and manganese removal treatment plants that treat all eight (8) of Westford's groundwater sources. *The two plants have a total design capacity of 6.0 mgd.* The treatment process utilizes greensand filtration, packed tower aeration for radon removal, and ultra violet (UV) light for disinfection. Each plant has a 350,000 gallon clearwell that is used to meet CT requirements for Groundwater Under the Influence of Surface Water. The Forge Village facility is over 15,000 s.f. and will serve as the new *Operations Center.* This facility includes over 5,000 s.f. of office space. *A $14.3 million zero interest State Revolving Fund (SRF) Loan was secured to assist with the construction costs of this project.* The project also includes design and construction of 5.5 miles of new transmission mains that will connect the wells to the new treatment plants.

Gushee Pond Water Treatment Plant; Raynham Center Water District, Massachusetts: Project Manager, responsible for design and construction of an iron and manganese removal treatment plant that treats the two existing Gushee Pond water supply wells. *The treatment plant has a total design capacity of 2.0 mgd.* The treatment process utilizes an existing aeration facility for VOC removal, followed by greensand filtration in the new plant. Backwash water is discharged to on-site lined infiltration basins.

Riverneck Road Water Treatment Plant; Chelmsford Water District, Massachusetts: Project Manager, responsible for design and construction of an iron and manganese removal treatment plant that will treat six (6) of the Water District's water supply wells. *The treatment plant has a total design capacity of 4.5 mgd.* The treatment process utilizes packed tower aeration VOC removal, followed by greensand filtration. Backwash water is discharged to a separate Backwash Storage Facility that will either discharge the backwash water to the public sewer, or recycle the supernatant back to the treatment plant. *A $6.3 million State Revolving*

EDUCATION

B.S., Civil Engineering
Merrimack College, 1988

PROFESSIONAL REGISTRATION

Registered Professional Engineer, MA

PROFESSIONAL AFFILIATIONS

Massachusetts Water Works Association
Scholarship Committee
1995 – Present
Chair 2002 - Present

New England Water Works Association
Sponsorship Committee
Scholarship Committee
2004 - Present

PRESENTATIONS

Groundwater Treatment Plants that meet the Surface Water Treatment Rule, Massachusetts Water Works Assoc., Oct. 2003

Treating Barnstable's Water Supply: A discussion of the use of aeration plus off-gas treatment for VOC's, Massachusetts Water Works Assoc., March 1992

Dufresne-Henry

Fund (SRF) Loan was secured to assist with the construction costs of this project. The project also includes design and construction of 11,000 linear feet of new transmission mains that will connect the wells to the new treatment plant.

Corrosion Control Study, Barnstable Water Company; Hyannis, Massachusetts: Project Engineer, responsible for evaluating the corrosive nature of water pumped from ten wells in three separate geographic locations. Adjustment of pH with potassium hydroxide, addition of a phosphate-based corrosion inhibitor and provisions for alkalinity adjustment are included in the design of the finished facilities.

Southwick Wellfield Treatment Facility; West Springfield, Massachusetts: Responsible for process piping and treatment equipment design of the Southwick Wellfield Treatment Facility. This facility utilized granular activated carbon GAC pressure filters to remove EDB, a pesticide, from the Town of West Springfield's four gravel packed wells with a capacity of 6.0 mgd.

King Philip Water Treatment Facility; No. Raynham Water District, Massachusetts: Project Engineer, responsible for the design and construction of a water treatment facility to treat two existing groundwater sources. The new facility included packed tower aeration as the primary treatment and granular activated carbon filtration as the secondary treatment, as well as corrosion control and chlorine disinfection. The treatment facility has a capacity of 0.72 mgd. This project also included a new Supervisory Control and Data Acquisition (SCADA) System for all of the facilities within the District.

White Pond Water Treatment Facility; Maynard, Massachusetts: Project Engineer, responsible for treatment process design of a treatment facility that includes packaged filter treatment units to treat 1 mgd from this surface water source. Chemicals used in the treatment process include chlorine dioxide, powdered activated carbon, aluminum sulfate, polymers, sodium hydroxide and sodium hexametaphosphate. A 400,000 gallon concrete storage tank is used to store finished water and meet CT requirements. A sludge thickener and freeze/dry bed are used to manage wastes solids generated by the process. A Value Engineering Study was included with the design.

Meeting House Road Storage Tank; Mashpee Water District, Massachusetts: Project Manager, responsible for design and construction services on a 1.0 MG composite elevated water storage facility. Design services included the tank, over 800 linear feet of access road, connecting water main and utilities, and drainage systems. The tank includes an 80 foot high cast-in-place concrete pedestal with a 1.0 MG steel bowl above. The tank height to overflow is 115 feet.

Twin Peaks Water Storage Facility; Westford, Massachusetts: Project Manager, responsible for design and construction services on a 1.0 MG precast, prestressed concrete water storage facility. Design services included the tank, over 2,000 linear feet of access road, connecting water main, drainage systems and solar powered telemetry equipment.

Transmission Water Mains; Westford, Massachusetts: Project Manager, responsible for design and construction of over 26,000 linear feet of new transmission water mains which connect all of the eight pumping stations in Westford to the two (2) new treatment plants. Project included replacing existing undersized mains on some streets and converting over 80 services to the new treated water mains.

Thomas J. Mahanna, P.E.
Capital Project Execution

Transmission Water Mains; Chelmsford Water District, Massachusetts: Project Manager, responsible for design and construction of over 11,000 linear feet of new transmission water mains which will connect six well pumping stations in Chelmsford to the new Riverneck Road Water Treatment Plant. Project includes three brook crossings.

Dufresne-Henry

Rene LaBranche
Director of Construction Services

EDUCATION

A.S. New Hampshire Technical College, 1985

PROFESSIONAL CERTIFICATION

OSHA Standard 49 CFR 1910.120 for Hazardous Waste Site Operation (40-hour and annual 8-hour training courses)

Mr. LaBranche is the Manchester, NH office leader. He has 20 years of experience in municipal and planning board services, construction management, design and construction of roadways, design and construction of wastewater treatment facilities and collection systems, water distribution systems design, site planning and design, solid waste landfill construction, and QA/QC constructability reviews. As office leader, Mr. LaBranche oversees the day-to-day operations of Dufresne-Henry's Manchester office. This includes supervising project managers, plus technical, clerical and construction services staff.

Rene reviews the constructability aspects of our clients' projects. His constructability reviews are one aspect of the quality control measures which we use to identify inconsistencies or potential issues before projects are completed. These reviews help in creating a workable preliminary design and accurate cost estimates.

Projects with applicability to your project include:

Wastewater Treatment Facility Upgrade, Derry, New Hampshire: Responsibilities included construction management of the second phase of an aeration blower and aeration system upgrade to the Town's 3.0 mgd secondary lagoon WWTF. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Sewer Collection System and Wastewater Treatment Plant SCADA Project; Merrimack, New Hampshire: Responsible for project management of this project which included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Construction Management; Cranston, Rhode Island: Construction project manager for the installation of 60,000 linear feet of 18", 16", and 12" wastewater force mains used for supply and return of wastewater effluent flow for the cooling water of a new 500 megawatt electric generating power plant constructed in Johnston, R.I. The project also included the construction of a 5-mgd supplementary treatment facility, which provides tertiary treatment of the Rhode Island City of Cranston's WWTF effluent. The project also included slip lining of existing sewers, sewer manhole rehabilitation, tie-in of existing sewer services, trench patching, traffic diversions and significant wetlands impacts and re-creation of wetlands. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, and problem resolution.

Construction Management – Influent Sewer Force Main; Derry, New Hampshire: Construction project manager for the installation of a new 20" diameter PVC force main carrying wastewater from the Town's 6-mgd influent pump station 2,000 feet to the WWTF primary lagoon. The project included valve and meter upgrades in the pump station, bypass pumping, trench patching and coordination with the Town WWTF operations staff. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Dufresne-Henry

Rene LaBranche
Director of Construction Services

Sewer Main Extension; Milford, New Hampshire: Responsibilities included construction administration of 4,000-linear-foot sewer extension including reconstruction of a railroad grade crossing and roadway intersection. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Sunapee, Georges Mills, Concord, New Hampshire: Construction coordinator responsible for QA, QC constructability review, assigning of construction monitoring personnel on site, review of change orders, dispute and problem resolution, and oversight of construction services on the project. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Radon Removal, Transmission Main, Water Storage Facility; Sunapee, New Hampshire: Responsibilities included oversight of construction services on the project. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Construction Monitoring; Newmarket, New Hampshire: Responsibilities included construction monitoring of the 1.0-mgd water treatment facility upgrade. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, problem resolution.

Corrosion Control Facility Design; Milford, New Hampshire: Responsibilities included project administration of a corrosion control facility. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, and contract closeout.

Water Treatment Facility; Sunapee, New Hampshire: Responsibilities included oversight of construction services on the Town's slow sand filter project. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Water System Telemetry Upgrade; Milford, New Hampshire: Responsibilities included project administration and construction monitoring of the installation of a radio telemetry and control system for the Town's water distribution system. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, and contract closeout.

Water System Improvements; Jaffrey, New Hampshire: Responsibilities included project administration for upgrade of two well pump stations and construction of 0.50 MG and .75-MG water storage tanks, a booster pump station and SCADA system. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Rene LaBranche
Director of Construction Services

Water Distribution System; Milford, New Hampshire: Responsibilities included design, construction, management and administration of an 8,000 lf 12-inch water main project on West Street and Osgood Road. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, and contract closeout.

Well Pumping Station; Tilton, New Hampshire: Responsibilities included construction management and administration for construction of a 1,200-gpm well pumping station. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Water Storage Tank; Tilton, New Hampshire: Responsibilities included site design, construction management and administration for a 1,000,000-gal cast-in-place concrete water storage facility. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Water Main Improvement; Tilton, New Hampshire: Responsibilities included construction management and administration for construction of 20,000 lf of 12" and 16" water main along NH Routes 140 and 3. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Municipal Engineering – Site Plan and Subdivision Plan Review and Construction Services

Mr. LaBranche presently is the leader of the municipal engineering group for Dufresne-Henry's Northeast Environmental Sector, overseeing all planning board, public works and municipal highway department development plan review, construction monitoring, plan compliance monitoring and civil engineering services. We provide similar services in the following communities:

• Alton, NH	Planning Dept.
• Auburn, NH	Planning Board/Board of Selectmen
• Candia, NH	Planning Board/Board of Selectmen/Road Agent
• Hooksett, NH	Planning Dept./Building Dept. Sewer Commission/Village Precinct Highway Dept.
• Merrimack, NH	Planning Dept.
• Milford, NH	Planning Dept./Public Works Dept./Building Dept.
• New Boston, NH	Planning Dept.
• Pelham, NH	Planning Dept.
• Stratham, NH	Fire Dept.

Rene LaBranche
Director of Construction Services

Municipal Planning Boards, New Hampshire: Responsibilities included project administration and construction monitoring for various development projects including roadways, utilities and drainage works in several New Hampshire communities. Responsibilities also included supervision of on-site construction monitoring personnel, coordination and evaluation of materials testing, change order processing, problem resolution, coordination with funding agencies, and contract closeout.

Dufresne-Henry

Appendix B

Appendix B

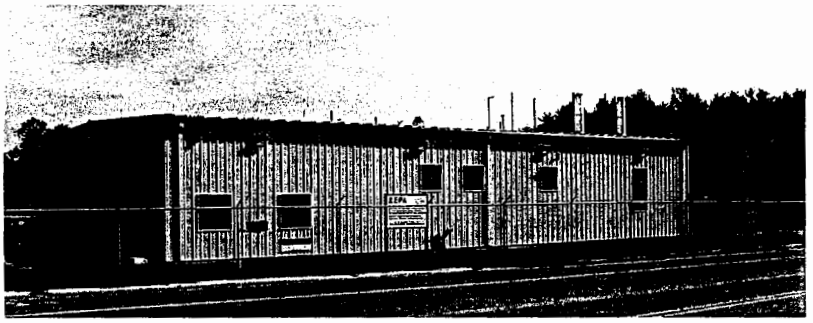
Part One

Veolia Water – Supplemental Experience Information

VEOLIA Water

Savage Wells/OK Tools Superfund Site, Milford, NH

Groundwater Remediation Project



Veolia Water North America – Northeast, LLC (Veolia Water), under a contract that began in 2002, is providing remediation management services for the State of New Hampshire Department of Environmental Services (NHDES). Our firm provides remediation services at the OK Tools portion of the Savage Wells Superfund site. The 0.345- MGD system provides groundwater treatment and source reduction through DNAPL (dense non-aqueous phase liquid) collection and management of migration.

Veolia Water currently operates the on-site remediation systems at the OK Tool portion of the Savage Wells Superfund site.

The cleanup of the OK Tools portion of the Savage Wells Superfund Site began in 1993 when, under supervision of the U.S. Environmental Protection Agency (EPA), the State of New Hampshire began the design of the groundwater remediation system that was put into operation in March 1999. Subsequent modifications of the Record of Decision (ROD) for this site's recommended remedy (including the use of a passive barrier to contain contaminant migration as well as the use of air stripping, air sparging and soil vapor extraction and in-situ chemical oxidation) led the EPA and NHDES to jointly issue an Explanation of Significant Differences (December 1996). This revised remediation approach provides for treating groundwater contaminated with volatile organics, specifically tetrachloroethene (PCE) and trichloroethene, 1-1-1 trichloroethane (TCE), resulting from past industrial operations at the site. The Milford-Souhegan aquifer is classified as a Class IIB aquifer, a potential drinking water source.

The importance of this Aquifer has been highlighted by the pressures of population and industrial growth on water resources in the southern New Hampshire area. The Savage Wells had formerly supplied up to 45% of the Milford Township's potable water supply. When the contaminants were discovered in this supply source, emergency Federal funding was acquired to provide residents of a nearby trailer park with bottled water until a remedial treatment system could be constructed and the park connected to the municipal water supply.

The Veolia Water O&M agreement includes:

- Monitoring of influent water quality and pumping of groundwater from the extraction wells to the treatment plant.

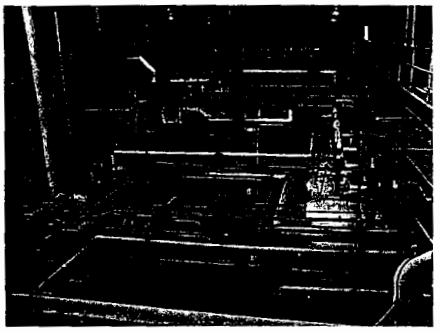
Facilities	• 0.345-MGD groundwater remediation facility
Scope of Services	• Operate/Maintain/Manage • Engineering Services
Start Date	2002
Client Reference	Mr. Tom Andrews, P.E. State of New Hampshire Department of Environmental Services 6 Hazen Drive Concord, NH 03303-6526 Telephone: 603.271.2910

- Monitoring soil vapor extraction/air sparging systems.
- Preparing O&M Manuals for the facility, including protocols and SOPs.
- Providing Value Management services to evaluate the operational and cost effectiveness of treatment alternatives.
- Evaluating shallow extraction well dewatering of the soil vapor extraction zone of the aquifer to determine if all pertinent data is being generated.
- Updating the groundwater model to provide a more accurate representation of the water flow and chemical transport within the barrier.
- Annually evaluating the effectiveness of the systems and updating data and information such as the database and maps.
- Supporting the State and EPA in the preparation of the Five-Year Review, which will evaluate the implementation and performance of the remedy to establish its effectiveness in protecting human health and the environment.

VEOLIA Water

GILSON ROAD SUPERFUND SITE, NASHUA, NEW HAMPSHIRE

Site Remediation and Closure



Veolia Water North America – Northeast, LLC (Veolia Water), under a contract that began in 1986, provided remediation and site closure support services for the Gilson Road Superfund Site for the State of New Hampshire Department of Environmental Services (NHDES). This contract was the first U.S. Environmental Protection Agency (EPA) Superfund groundwater cleanup that was implemented using a contract operations, maintenance and management (O&M) agreement. The site was contaminated with volatile organic compounds, which were removed with high-temperature air stripping. The 0.43-MGD groundwater remediation system also included in-situ volatilization and combustion of the removed organic materials. In 1996 the remediation operations at this site were successfully completed, and Veolia Water completed dismantling of the remediation system at this site was completed in 2001.

Veolia Water provided full-service contract O&M for the Gilson Road Superfund groundwater facility in Nashua, New Hampshire. This contract was the first EPA Superfund groundwater cleanup using a contract operations agreement. Total operating responsibilities at this site included process control, preventive and corrective maintenance, on-site laboratory analysis, and ensuring permit and regulatory compliance.

This project began in January 1986 when a Veolia Water predecessor company first entered into a contract with the State for the startup and contract O&M for the newly constructed 0.43-MGD groundwater plant at the Gilson Road Superfund site. This was the first EPA Superfund groundwater cleanup project implemented under a contract O&M agreement; the agreement was later transitioned to the NHDES.

Under the original contract, Veolia Water provided startup services and O&M, maintained all service agreements, inventories and purchase authority and operated the facility's on-site laboratory.

The treatment facility treated groundwater that was contaminated by the illegal disposal of hazardous wastes to the treatment level required by the Record of Decision (ROD). The treatment system at this site consisted of precipitation, coagulation and isolation of heavy metals; temperature controlled air stripping to remove volatile organics, PACT-biological treatment for non-volatile organics, soil gas extraction, and the incineration of organics extracted from the contaminated groundwater and soil.

Overall removal efficiency for volatile organic compounds by the air stripper was 99.7 percent, with removed compounds incinerated in a high-temperature vapor incinerator. Steam generated from the incinerator was used to produce electricity, heat the building and preheat the groundwater prior to air stripping.

The treated groundwater flowed at 300 gpm and contained 1 percent of input volatile organic solvents; 250 gpm were recirculated into the groundwater to pass through additional treatment cycles, while 50 gpm received biological treatment and was discharged to a local stream. Treatment residuals were stabilized and placed in a secure on-site landfill, which was closed and capped upon project completion.

The Veolia Water O&M team implemented several improvements and innovations at this site to provide for the most reliable, cost-effective operation. These enhancements enabled the facility to have maximum "uptime," and included:

- Placing all extraction well pumps on a biennial preventive maintenance program resulting in substantial cost savings. The pumps were pulled and inspected in house by plant personnel. Inspections included cleaning and the replacement of worn parts. (This work has previously been performed on a corrective need by an outside contractor.)
- Installing a bypass switch on the boiler interlock system to enable recirculation of flow through the recharge system during extended shutdowns to maintain homogeneous conditions. (The original interlock system prevented flow if the boiler was shut down.)
- Redirecting the soil gas extraction flow. When a soil gas extraction system was added to the facility in 1991, the original design was for the

Gilson Road Superfund Site, Nashua, New Hampshire

soil gas to be added directly to the boiler/vapor incinerator separate from the stripper airflow. This added system exceeded the boiler capacity, making it difficult to operate and reducing its efficiency. Utilizing a computerized stripping tower program, we determined that the soil gas could be directed to the stripping tower without reducing its efficiency, and eliminate the need for the stripper air blower. This reduced the total airflow volume to acceptable limits.

- Constructing a baffle system to the bio tanks to aid in floc settling.
- Installing a polymer feed line and header system to the bio system.
- Installing a kill switch in the control room to safely shut down the facility at a local point in case of an emergency.
- Installing a curtain system to direct metal sludge from the plate and frame press to the dump truck.
- Installing a lime slurry feed system in the bio-tanks for pH control.
- Designing a catwalk and door extension that eliminated a safety concern associated with access to the bio-tanks.
- Overseeing the closure of the on-site sludge landfill.

As a result of a Remedial Action Evaluation Study completed in 1995, it was concluded that remedial action accomplished at the Gilson Road site had achieved the cleanup goal set forth in the ROD and the Supplemental ROD.

During summer 1996, Veolia Water supervised the closing of the on-site landfill, including fill, grading, drainage net and capping. A security system was installed, and a security company was contracted by Veolia Water to maintain site security when personnel are not on site. We also obtained a contractor to install a new boiler and tie it into the existing steam line system for building heat during winter months. At this point, the facility was then put in a standby mode in accordance with the requirements of the EPA, NHDES and the Remedial Action Evaluation Study.

Following this, all equipment at the site was maintained by the Veolia Water O&M Team in a ready state (able to be reactivated within four weeks if required). During this period all of the equipment was routinely exercised by Veolia Water, and was maintained in line with manufacturers' recommendations, and clean water loops were run periodically to test the equipment.

The State has implemented a long-term (30-year) monitoring program, as recommended by the NHDES, to collect data to document continued

Facilities 0.43-MGD Groundwater Remediation Facility

Scope of Services
- Operate/Maintain/Manage
- Site Maintenance
- Emergency Response
- Closure Assistance

Start Date 1986

Client Reference
Mr. Ken Kettenring, P.E.
State of New Hampshire
Department of Environmental Services
6 Hazen Drive
Concord, NH 03303-6526
Telephone: 603.271.4060

compliance with cleanup goals. As added protection for public health, a groundwater management zone was constructed to limit access to groundwater downgradient of the site

In the almost 10 years that this plant operated, from April 1986 to December 1995, over 1 billion gallons of contaminated groundwater was treated.

In 1999, after the second five-year review of the Gilson Road site, the EPA and the NHDES determined that the contaminate levels at the site were reduced to the level that the groundwater treatment plant would not be restarted. A risk assessment found that there was no current or future risk to human health posed by site contamination.

At that point, Veolia Water began work on the final phase of this O&M contract, which involved the decommissioning and dismantling of treatment units, a process that was completed in 2001.

Today, Veolia Water provides site maintenance and emergency response for the State, which is using the facility for storage.

INDIANAPOLIS, INDIANA

Water Supply System Public-Private Partnership

Veolia Water North America - Central, LLC (Veolia Water), is managing the nation's largest water public-private partnership. This 20-year, $1.5 billion contract with the City of Indianapolis includes all operations, maintenance and management (O&M) and customer service facets of the City's waterworks system, a system that currently serves 1.2 million people. This important project is expected to introduce a new level of performance in the water industry.

In April 2002, Veolia Water was awarded the nation's largest water public-partnership, with the City of Indianapolis. This 20-year, $1.5 billion contract includes O&M and customer service facets of the City's waterworks system that currently serves 1.2 million people.

As part of Veolia Water's approach to managing and implementing this project, we have engaged the services numerous local and national firms as subcontractors and suppliers and implemented an aggressive program to include minority-owned (MBE) and women-owned (WBE) business enterprises and contractors for ongoing projects. In 2002, Veolia Water well surpassed our goal for providing subcontracts to local MBE and WBE firms. In addition, our commitment to the Indianapolis community since 2002 has resulted in over $2 million to local non-profit organizations.

"The City of Indianapolis and Veolia Water have and continue to work closely together in a win-win partnership to realize economic and environmental benefits to our entire community, including a five-year rate freeze for our customers. We built this partnership with the interests of the citizens in mind and are pleased with the progress we've made in our first two years."
Mayor Bart Peterson

The Indianapolis water facilities include four water treatment plants, ranging in size from 16 MGD to 96 MGD; eight groundwater treatment plants, ranging in size from less than 1 MGD to 12 MGD; 4,000-mile distribution system; and numerous storage tanks. The Indianapolis system includes19 water pump stations along the distribution system and 12 high-service pump stations at the water treatment plants.

Like most water distribution systems, the Indianapolis water supply system is dynamic with several pressure zones. Fifteen districts and five sub-districts comprise the water system. A district and sub-district are part of the waterworks that is defined by the pressures within the area and is typically isolated from the remainder of the system by one or more pressure reducing valves (PRVs), bleeder valves or pump stations. The Harbour system is comprised of three districts while the Liberty, Darlington and IWC Morgan systems each contain only one district.

The new partnership was an integral part of Mayor Bart Peterson's plan to acquire the assets of the Indianapolis Water Company (IWC) from the regulated utility NiSource, which was required by federal law to divest all of its water utility assets due to a planned merger with Columbia Energy Group. The City first became interested in buying the water company's assets in late 2000, after it became clear that NiSource would have to sell the water company. On April 30, 2002, the City acquired the waterworks system from NiSource, and until the City's purchase of IWC, Indianapolis had been the largest city in the nation that did not own its own water utility.

Veolia Water assumed complete water system operation and management responsibility for the water system on May 1, 2002, and the transition process provided complete O&M responsibility to our firm.

This move by the nation's 12th-largest city marked the largest public-private partnership for water services in the U.S., and Veolia Water transitioned over 460 technical, professional and management level employees to our O&M and management teams.

Veolia Water was selected for this partnership because of our innovative transition plans, employee relations plans, technical approach,

CITY OF INDIANAPOLIS, INDIANA

experience, management fees, customer service and local commitment.

"Our partnership is summed up by two issues – local control and quality of life. Through our agreement with [Veolia Water], we are controlling our community's most precious resource, controlling the assets that treat and deliver the resource and stabilizing our water rated."
- Mayor Bart Peterson

In some cities, the sale of utilities has resulted in rate increases. However, due to the acquisition and Veolia Water partnership, water rates for the City of Indianapolis consumers will be frozen for the first five years. The City further contributes to lower operating costs because of favorable tax and interest rate structures.

Other critical factors in winning this project were our aggressive approach to resolving water taste and odor problems that have plagued the waterworks system for years, our commitment to invest in plant upgrades and our incentive-based compensation plan.

Under the incentive plan, a portion of our company's fees are paid only if we meet specified customer service, water quality, operations and other performance measures. By directly linking performance to compensation, this partnership is establishing a new model in the water outsourcing industry. In 2002, Veolia Water earned approximately 90% of the incentive-based compensation.

Water taste and odor problems have plagued some Indianapolis consumers for years. The City and Veolia Water have invested in plant upgrades and engaged Indiana University-Purdue University at Indianapolis in an aggressive research and development project to create a mode of excellence in drinking water quality and also address water taste and odor.

Though the Indianapolis waterworks system is in good condition, Veolia Water has committed to a higher level of performance to be achieved through incentives in customer service, water quality, capital improvements, operations and maintenance, and community involvement.

Veolia Water established a sophisticated customer service program that includes a 24/7 call center to manage customer concerns regarding their water service. The customer service organization is responsible for meter reading for some 325,000 connections. Veolia Water also provides billing and revenue collection for 600,000 accounts. In addition to billing for the waterworks, we provide sewer billing for Indianapolis, and we also supply utility billing for the nearby city of Elkart.

A major portion of this project is devoted to capital improvement projects that are being managed by Veolia Water and implemented by our firm's engineering and construction affiliate, in tandem with local contractors.

Facilities	• Four Surface Water Treatment Plants, ranging in size from 16 to 96 MGD • Eight Groundwater Treatment Plants, ranging in size from 0.86 to 12 MGD • 4,000-mile Distribution System • 31 Pump Stations • 8 Well Fields • 6 Ground Storage Tanks • 7 Underground Storage Tanks • 6 Elevated Storage Tanks
Scope of Services	• Design/Build • Operate/Maintain/Manage • Asset Management • Capital Improvements • Customer Service • Meter Reading (325,000 connections) • Billing/Collection (600,000 accounts) • Community Relations • Site Security Assessment
Start Date	2002 – Ongoing through 2022
Population Served	1.2 Million
Client Reference	Mr. Carlton Curry Director of Operations and Contracts City of Indianapolis Department of Waterworks 1220 Waterway Boulevard Indianapolis, IN 46205 Telephone: 317.264.7738

In the first two years of our contract, we implemented or completed some $94 million in capital work improve the City's aging water infrastructure. The City anticipates commissioning an additional $20-$40 million in capital projects in each of the 20 years of our contract. Veolia Water's engineering affiliate is managing this work, which is being performed by Veolia Water's staff, along with specialty contractors. Throughout these vast and ongoing improvements, Veolia Water provides continuous, uninterrupted water services for 12 water treatment plants having a daily production capability of 200 million gallons.

Veolia Water is initiating a new standard for water utility excellence at Indianapolis. Our specialists are completing the rigorous program to achieve ISO 9001:2000 and 14001:2004 registrations for the City. This effort is anticipated to be completed by the end of 2005.

The Indianapolis-Veolia Water partnership was recognized in 2004 with the National Council for Public-Private Partnerships *Service Award.*

BROCKTON, MASSACHUSETTS

Contract O&M of Municipal Water and Wastewater Facilities

Veolia Water North America – Northeast, LLC (Veolia Water) began providing full-service contract operations, maintenance and management (O&M) services for the City of Brockton's 68,137-m^3/d tertiary wastewater treatment plant and two water treatment plants (90,849 m^3/d and 4,921 m^3/d) in 1988. Water system operations also include two raw water pump stations (151,416-m^3/d production capacity) and two water towers. Wastewater system operations include two wastewater pump stations, sludge incineration operations including ash disposal and sludge disposal, and management of an Industrial Pretreatment Program. At the start of this contract, the citizens of Brockton faced serious taste and odor problems in their potable water supply, the result of metabolites secreted by algae and actinomycetes in Silver Lake. Veolia Water worked with specialists from the Veolia Water, S.A. research center in Paris, France, to modify and supplement the existing treatment facilities. Brockton citizens now enjoy some of the finest tasting water in the country and realize operating cost savings of over $500,000 annually. In 2000 our partnership was renewed for 20 years.

Veolia Water operates and manages the potable water and wastewater facilities serving Brockton. The first contract with the City was in 1988 and was innovative in that we provided the first year of O&M service for no cost because of our ability to achieve operational savings of more than $500,000 per year. Over the years the partnership between the City and Veolia Water has been recognized with awards and commendations, and, most recently, was renewed a 20-year term—making Brockton one of the longest-running contracts in the O&M industry.

Over our more than 15-year history in Brockton, Veolia Water has made significant enhancements to the water (WTP) and wastewater (WWTP) treatment processes and facilities, including:

- Cleaning of the sludge lagoons at a fraction of the City's budgeted cost (WWTP).
- Designing and building a filter cloth cleaning system that reduced cleaning time from two days to four hours (WWTP).
- Implementing chemical precipitation of phosphorous with ferrous sulfate to reduce odors, save operational time and equipment use and cut costs (WWTP).
- Installing recording turbidometers on each water filter and plant effluent (WTP).
- Building and installing fine bubble diffused aerators (WTP).
- Implementing a corrosion control program to reduce contaminant levels and drinking water and provide a protective coating for the distribution system (WTP).
- Turning this once garbage-filled 40-acre site into a showplace and bird sanctuary, replacing abandoned appliances, vehicles, oil barrels, etc., with a water garden, exotic fish (in an abandoned clarifier), trees and flowers.

Our fish giveaway is a popular event that ensures interaction between O&M staff and citizens while controlling overpopulation of the clarifiers.

"Brockton is an example of how the public and private sectors can substantially benefit both environmentally and financially from long-term arrangements. The partnership has helped decrease pollution in our community that might not have happened had we not chosen to work with the private sector." **Mayor John T. Yunits, Jr.**

Water O&M

Veolia Water began a 10-year contract to operate Brockton's 90,849-m^3/d water treatment plant in 1988. In addition, under this contract, we operate the City's other water treatment facility, the 4,921-m^3/d Avon water treatment plant, a direct filtration plant using a Microfloc® system, and two raw water pump stations (151,416-m^3/d production capacity) and two water towers. These water plants receive surface water from local lakes. Historically high in turbidity and organics, conventional treatment methods—coagulation, flocculation, sedimentation and filtration—ensure high quality drinking water. Currently, the two plants combined are producing approximately 39,746 m^3/d of finished water.

VEOLIA Water

City of Brockton, Massachusetts

At the start of this contract, Veolia Water immediately implemented a detailed audit and performance evaluation at the City's water plants to determine what changes were necessary to optimize plant performance. Based on the findings of the plant evaluation, a report was compiled and submitted to the City listing the immediate needs of the facility. We then immediately initiated two critical programs—corrosion control and filter media replacement.

The corrosion control program entailed the addition of zinc polyphosphate to the system to coat the interior of the distribution mains. This procedure successfully inhibited corrosion of the City's system, which eliminated red water complaints (about 1,500 per year).

The filter media project involved replacing the media and spent anthracite coal with granular activated carbon. This corrected the taste and odor problems the City was experiencing with their water. The water treatment plant now operates well within the state's water quality standards. In addition, nearly every component of the treatment process and the entire interior of the plant were completely refurbished, and the 40-acre plant site has been completely cleaned. Veolia Water also conducted a pilot test of ozone treatment for the water plants. This included planning, design and construction management, and O&M for the ozonation pilot plant, studying ozone's effects on raw and pre-filtered water.

Wastewater Facilities	• 68,137 m^3/d Tertiary Wastewater Treatment Plant • 2 Pump Stations
Water Facilities	• 90,849-m^3/d Surface Water Treatment Plant • 4,921-m^3/d Surface Water Treatment Plant • 2 Raw Water Pump Stations (151,416 m^3/d) • 2 Ground Storage Tanks (43,153 m^3/d) • 1-MGD Water Well (inactive)
Scope of Services	• Operate/Maintain/Manage • Industrial Pretreatment Program • Septage Receiving • Sludge Incineration with Ash Disposal On-site - 2,761 dry tons per year
Start Date	1988
Population Served	110,038
Client Reference	Mr Brian Creedon Water Systems Manager City of Brockton 39 Montauk Road Brockton, MA 02301 Telephone: 508.941.0265

Wastewater O&M

Veolia Water operates the City of Brockton's 68,137 m^3/d tertiary wastewater treatment plant, which is capable of managing peak flows of 62 m^3/d and currently treats about 234,695 m^3/d of municipal and industrial sewage. We also have responsibility for two pump stations, sludge incineration operations (including ash disposal) and sludge disposal (for 2,761 dry tons per year), as well as the City's Industrial Pretreatment Program.

This tertiary treatment plant uses biological and physical processes to reduce nitrogen and phosphorous in the final effluent. Sludge is incinerated and then the ash is landfilled. The facility is often subject to excessive flows and has one of the most stringent effluent discharge permit limits in the State. Despite this, we maintain compliance and have received numerous "Excellent" ratings from local environmental agencies.

A $60-million capital upgrade to the wastewater treatment plant had been engineered and was in progress when a Veolia Water predecessor company assumed O&M responsibility, and they oversaw the process, thereby minimizing downtime during construction of improvements.

Major improvements to the wastewater plant operations under Veolia Water have included switching from lime and ferric chloride to polymer for conditioning, which greatly increased the sludge processing capacity of the presses and incinerator while significantly reducing the cost of chemicals and energy. Implementing our computerized process control system resulted in a more efficient and cost-effective operation. Minor design changes allowed the plant to meet summer discharge limit requirements for the first time, further reducing operating costs. Single-stage nitrification saves many thousands of dollars in electrical, chemicals and manpower costs. An odor control system eliminated odors during the warm months.

Through the efforts of Veolia Water and subcontractors, and at savings estimated as high as $250,000, Veolia Water achieved compliance with new U.S. Environmental Protection Agency (EPA) sewage sludge regulations (503s). Brockton was only the second U.S. facility to receive a 503 incinerator permit.

Veolia Water responded to the City of Brockton's financial crisis by providing the first year of services at no cost, allowing the City to apply its water and wastewater treatment budget to other critical areas. In subsequent years, Veolia Water rebated any unused maintenance and repair funds to the City and shared savings gleaned through efficiencies.

City of Brockton, Massachusetts

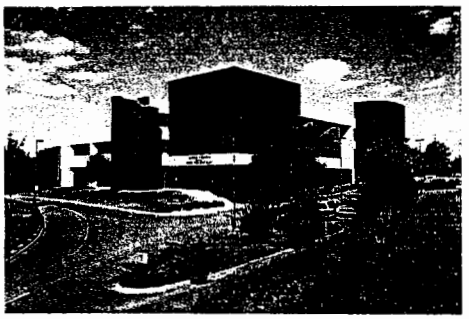
The Brockton wastewater facility has one of the most stringent effluent discharge permit limits in the State. During the past three years, our operation has had no major violations. In addition, the facility received numerous *Excellent* ratings from local environmental advocacy group *Save the Bay.*

The Brockton project has twice been awarded the *Group Safety Award* from the Massachusetts Safety Council and has been a finalist for the Public Water System Award issued by the EPA.

The Brockton water facility was the 1998 second-place recipient of Best Large Plant in the State for Water Quality from the Department of Environmental Protection and the Massachusetts Water Works Association.

City of Lynn, Massachusetts

Municipal Water and Wastewater Treatment Facilities



Veolia Water North America – Northeast, LLC (Veolia Water) has worked with the City of Lynn for nearly 20 years. Today our firm provides comprehensive operation, maintenance and management (O&M) services and design/build services to the City under two separate projects. This includes contract O&M for a 15.3-MGD water treatment plant under a contract that began in 1987, and for a 25.8-MGD wastewater treatment plant, under a contract that began in 1985.

Contract O&M of Raymond F. Reardon Memorial Water Treatment Plant

The companies that are now a part of Veolia Water have operated the Raymond F. Reardon Memorial Water Treatment Plant (pictured above) since the facility was completed in 1989. Our O&M Team was selected by the Lynn Water and Sewer Commission (LWSC) in 1987 to provide startup services for the new plant, and then to provide contract O&M services under succeeding agreements.

The Lynn water treatment plant is designed to treat flows of 15.3 MGD on average, although peak flows of 23 MGD can be provided to the distribution system, if required. On average, the plant produces about 10 MGD of drinking water. The direct filtration treatment facility employs rapid coagulation and multi-media filtration (granular activated carbon, sand and gravel) to remove taste, odor and color-causing constituents from the raw water source. The water system has grown to include multiple surface water sources, including the Saugus and Ipswich rivers and several impounded reservoirs. These ponds act as natural settling basins since it is estimated to take two years for water to travel through them to the low service pump station.

As a part of this contract, Veolia Water provides O&M for the City's 36.8-MGD raw water pump station that feeds this water plant.

Over the past 18 years, Veolia Water has been an active partner with the LWSC in lowering the costs of plant operations and improving the quality of water delivered to the customer. The Lynn water project has achieved 13 years of zero lost-time accidents—an exemplary safety record. The Department of Environmental Protection and the Massachusetts Water Works Association named the facility Best Large Plant in the State for Water Quality in 1998. The project was in second place in 1997 and received an Honorable Mention in 1999.

O&M – Water Treatment Facility

Facilities	• 15.3-MGD Surface WTP • 3 Water Towers • Raw Water Pump Station (36.8-MGD) • 20-MG Low Service Reservoir (clear well)
Scope of Services	• Operate/Maintain/Manage • Capital Improvements
Start Date	1987
Population Served	80,000
Client Reference	Mr. Richard Dawe Superintendent of Water Treatment, Lynn Water and Sewer Commission 400 Parkland Avenue, Lynn, MA 01905 Telephone: 781.595.5200

VEOLIA Water

Lynn, Massachusetts

Contract O&M of the Lynn Regional Wastewater Treatment Facility

In 1985, Veolia Water began a contract with the LWSC for the startup of the new $65-million wastewater treatment facility. The City's selection was based on two major factors: our outstanding record of success in new plant startups and on our excellent working relationships with local regulatory agencies. The wastewater treatment plant receives flows from four communities: the City of Lynn and the Towns of Saugus, Nahant and Swampscott. The facility is a primary and secondary treatment plant, with a primary design to remove settleable and floatable material and a secondary design to remove biodegradable organic and suspended solids. The plant can handle average daily dry weather flows up to 26 million gallons. During wet weather, the plant can treat as much as 111 MGD of sewage and storm flow. The plant uses activated carbon scrubbers to reduce odors from the influent weir well, grit chamber area and sludge thickening complex. The plant features a 12.5-dry-ton-per-day fluidized bed incinerator (two units currently not in operation, pending upgrade/replacement). Ash is disposed at an on-site landfill.

In 1990, Veolia Water oversaw a $53.8-million upgrade to secondary treatment at the wastewater plant. Between 1996 and 1998, we oversaw $10 million in capital improvements at this facility, which included variable frequency drives for influent and effluent pumping, process water pumping modifications, and a new indirect sludge dryer. The LWSC used State Revolving Fund funds for the most recent upgrades.

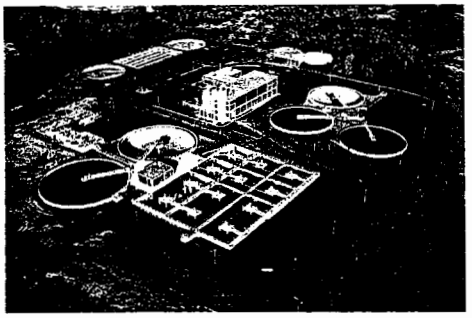
Veolia Water is currently implementing $14 million in capital improvements to the wastewater facility under a three-year program, using a design/build approach. These improvements include a larger fluidized-bed incinerator to replace the two existing incinerators; two high solids centrifuges; modernized SCADA controls; screening upgrades; and an odor control program that includes covering all preliminary and primary tankage and treating the odors from these tanks.

O&M – Wastewater Treatment Facility

Facilities	• 25.8-MGD Pure Oxygen Activated Sludge WWTP • 2 Fluidized Bed Incinerators • 12 Pump Stations
Scope of Services	• Operate/Maintain/Manage • Sludge Disposal (using an on-site landfill) - 4,938 dry tons per year • Industrial Pretreatment Program • Septage Receiving • Industrial Leachate • Capital Improvements
Start Date	1985
Population Served	123,880

LEOMINSTER, MASSACHUSETTS

Contract O&M of Municipal Water and Wastewater Facilities



In a contract operations, maintenance and management (O&M) project that began in 1983, Veolia Water North America – Northeast, LLC (Veolia Water) currently operates and manages the City of Leominster, Massachusetts' 9.3-MGD advanced wastewater treatment plant, a 4-MGD water treatment plant located at the Notown Reservoir, and a 1.2-MGD water treatment plant located at the Fallbrook Reservoir. The project has a 20-year record of no lost-time accidents and has won awards at the regional, state and national levels.

A Veolia Water predecessor company began O&M for Leominster's new wastewater facility in October 1983. Our outstanding record of success in new plant startups and O&M transitions contributed to the award of this contract. This operations project saved the City more than $300,000 a year, savings that were used to fund other important City projects. Our company phased out the existing treatment facility, which was the second activated sludge plant built in the U.S., and our composting and related experience helped the City evaluate alternative sludge-disposal options. A subsequent scope expansion added industrial pretreatment administration to the O&M contract responsibilities.

Thirteen years of successful operation were rewarded in 1996 when the City signed a new and expanded 20-year agreement with Veolia Water. The City's two water treatment plants were added to our scope of responsibility along with $4.5 million in design and construction for improvements to the water facilities. The City had estimated $8 million for the cost of these improvements.

One of the oldest public-private partnerships in the country, Leominster is saving some $300,000 per year in O&M fees and saved $3.5 million in design-construction costs through its contract with Veolia Water

Veolia Water's current O&M contract with Leominster involves operations and management of facilities including the:

- 9.3-MGD advanced wastewater treatment plant and on-site laboratory, with major process equipment includes a comminutor, rapid-mix and flocculation chambers, settling tanks and aerators, contact tanks, reaerator, sludge storage tanks, vacuum filters and lime slakers.

Water Facilities	• 4-MGD Surface WTP • 1.2-MGD Surface WTP • Chlorination Station • 2 Clear Wells (1 MG total capacity)
Wastewater Facilities	• 9.3-MGD Advanced Secondary Activated Sludge WWTP • 9 Pump Stations
Scope of Services	• Operate/Maintain/Manage • Design/Build • Industrial Pretreatment Program Management • Security Vulnerability Assessment • Septage Receiving • Sludge Hauling—1,590 dtpy
Start Date	1983
Population Served	36,000
Client Reference	Mr. Patrick LaPointe Director of Public Works City of Leominster 109 Graham Street Leominster, MA 01453 Telephone: 978.534.7590

- 4-MGD water treatment plant located at the Notown Reservoir. This is a conventional treatment plant whose processes include pre-chlorination, chemical addition, coagulation, flocculation, two-step sedimentation, activated carbon filtration, pH adjustment and post-disinfection.
- 1.2-MGD water treatment plant located at the Fallbrook Reservoir. This plant treats water

through rapid mix chemical addition, flocculation, upflow pulsating clarification, activated carbon filtration and disinfection.

Together, the two water facilities produce about 3 MGD of finished drinking water. The wastewater plant, capable of handling peak flows of 24 MGD, treats about 6.1 MGD on average.

The Notown water treatment plant underwent a major rehabilitation project under the current contract, including the complete replacement of all mechanical and electrical systems and extensive architectural improvements, while the Fallbrook plant received instrumentation upgrades; all accomplished using a design/build approach. In addition, a fully automated, off-site contact tank facility was built to ensure consistent water quality throughout the distribution system.

In March 2004, Veolia Water marked 20 years of no lost-time accidents at Leominster, and our operations at these water and wastewater facilities have been recognized with a number of awards at the regional, state and national levels, including:

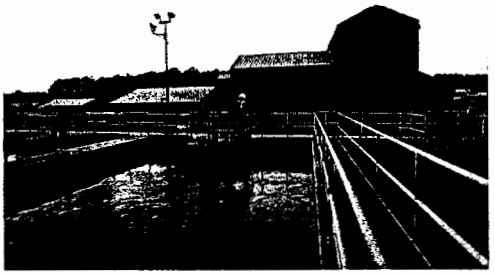
- O&M Excellence Award from U.S. Environmental Protection Agency (EPA), Region I, in 1999 and 1988
- George W. Burke Safety Award from the Water Environment Federation, Region I, in 1998
- O&M Excellence Award (honorable mention) from Massachusetts Water Pollution Control Association in 1989
- O&M Excellence Award from Massachusetts Department of Environmental Quality Engineering in 1987

In 2002, we conducted a Security Vulnerability Assessment and Emergency Response Plan for the City's water treatment facilities to identify areas of water security risk and to recommend mitigation measures. This assessment focused on identifying critical assets used in the production and delivery of clean, safe water to those served by this system. The Security Vulnerability Assessment report provided recommendations to make those assets more secure.

Veolia Water has also conducted hazardous materials and emergency response training for the City's water and wastewater facilities, and provides routine operations and maintenance training.

ATLANTA/FULTON COUNTY, GEORGIA

O&M of Surface Water Treatment Plant



Veolia Water North America - South, LLC (Veolia Water), in a joint venture with a minority-owned business, provides operation, maintenance and management (O&M) services for the 90-MGD Atlanta/Fulton County North Area Water Treatment Plant. This contract began with the startup of this new regional plant in 1990 and includes operations responsibility for a raw water pumping station (240 MGD capability), and dual 54-inch raw water mains. Over the term of this contract, Veolia Water has worked with the facility owner, the Atlanta/Fulton County Water Resources Commission (AFCWRC) to triple the capacity of this plant using a variety of process improvement and capital improvement approaches. This state-of-the-art facility has also been recognized with a number of awards over the past decade, most recently with the 2004 Gold Award for outstanding compliance from the Georgia Water and Pollution Control Association (GWPCA).

Veolia Water, in a 50-50 joint venture with a minority-owned business enterprise, began O&M for the North Area Water Treatment Plant that opened in November 1990. Major process equipment at the plant includes: raw water traveling screens, grit removers, pumps, chemical addition/feed systems, meters, rapid-mix and flocculation chambers, declining rate filters, clear well storage, and finished-water pumps.

Veolia Water has reduced AFCWRC's water costs nearly $0.1 per thousand gallons over the past 13 years. Indeed, at the end of 2004, accumulated consumer savings in water rates alone totaled more than $14.9 million!

The project includes O&M responsibility for a 240-MGD raw water pumping station, dual 54-inch raw water mains, a 350-million gallon surface reservoir, and the treatment plant which are owned by the AFCWRC, an agency that provides drinking water to consumers in the North Fulton County area of metropolitan Atlanta. The raw water pumping station, located on the Chattahoochee River, and raw water main connect it to the surface water treatment plant. The potable water distribution mains consist of dual 54-inch mains that serve North Fulton County and a 48-inch main that serves the City of Atlanta.

The state-of-the-art facility attracts many visitors each month, from local school children to water treatment experts from around the world. Veolia Water is responsible for providing site tours and offers internship opportunities for local college students.

As one of the U.S.' largest drinking water treatment plants, the AFC facility captures considerable recognition. This multi-award winning partnership is a model for successful public-private partnerships.

The scope of work for this project has involved all aspects of facility O&M, as well as working with the plant owner, the AFCWRC, for facility expansion and upgrade. Over the past decade of O&M at this water plant, Veolia Water implemented a pilot program to increase the plant's 30-MGD production capability to meets its rated flow capacity of 45 MGD (as rated by the Georgia Environmental Protection Division, GEPD), with no capital expenditures.

Subsequent efforts further increased the plant's rated capacity to 56 MGD. The plant is designed for an ultimate treatment capacity of 135-MGD. The demand for potable water is so great that the Commission began Phase II earlier than planned to upgrade the plant to 90 MGD. The plant has been running at this new flow capacity since March 1998.

Veolia Water's O&M program has reduced the power, chemical, and overall operations costs for this facility. Cost savings are passed on 100 percent to the AFCWRC.

In addition, Veolia Water has had no change orders to the contract even though the plant capacity expanded to 90 MGD under our current contract.

The performance of Veolia Water, and our joint venture partner, has been recognized with a number of awards over the more than a decade

Atlanta/Fulton County, Georgia

that we have operated and managed this facility, including:

- 2004 – GWPCA Safety Award for the Surface Water Category
- 2003- The facility received its sixth award for the Outstanding Operation of a Water Treatment Plant in the Category of 15 MGD and Above from the GWPCA.
- 2005 & 2001 - The facility received Gold Excellence Awards for Safe Drinking Water Act compliance from both the USEPA, Region IV, and the Georgia Environmental Protection Division (GAEPD).
- 2000 – The facility received Outstanding Operation of a Water Treatment Plant greater than 15 MGD from the GWPCA and an Award of Excellence for Superior Safety Record from the American Water Works Association. Additionally, the project was the Southern region winner of Veolia Water Excellence in Operations (OPEX) Award.
- 1999 – The facility received three honors from the GWPCA: Outstanding Operation of a Water Treatment plant greater than 15 MGD; Public Education Award; Safety Awareness Award.
- 1998 – A staff member received the Operator of the Year for District Three award from the GWPCA.
- 1997 – The facility received two USEPA, Region IV awards: Safe Drinking Water Excellence Award and Water Taste Challenge Award; three GWPCA honors: Safety Awareness Award, Outstanding Operation of a Water Treatment Plant in the Category of 15-MGD and Above, and Operator of the Year for District III; and the GAEPD Excellence Award – Safe Drinking Water Act. It also received the Education Award from Spelman College.
- 1996 – The GWPCA bestowed three awards on the facility: Outstanding Operation of a Water Treatment Plant in the Category of 15-MGD and Above, Safety Awareness Award and Plant of the Year. The USEPA gave a Certificate of Appreciation for the Drinking Water Taste Challenge Test.
- 1995 – The facility earned the EPA's Best Tasting Water in Georgia award.
- 1994 – The facility received the Drinking Water Taste Challenge Test Award from the USEPA, Region IV.
- 1992 and 1991– The facility received Outstanding Operation of a Water Treatment Plant in the Category of 15-MGD and Above from the GWPCA.

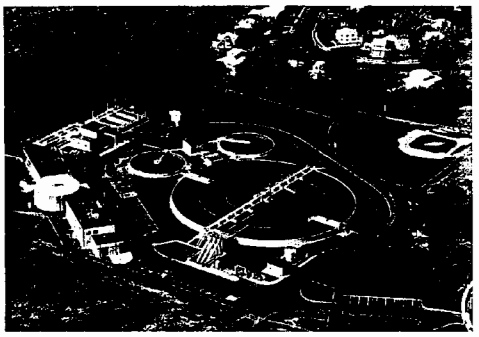
This O&M contract has been renewed three times.

In 2002, Veolia Water conducted a Security Vulnerability Assessment for the North Area Water Treatment Plant to identify areas of water security risk and recommend mitigation measures. This assessment focused on identifying critical assets used in the production and delivery of clean, safe water to those served by this system. This assessment was conducted in accordance with the requirements of the EPA and the Sandia National Laboratories Model protocols (which is the accepted standard for the industry).

Facilities	• 90-MGD Surface Water Filtration Plant • Raw Water Pump Station (Five pumps/240 MGD capability) • Clear Wells (Four 5.5 million gallon capacity units)
Scope of Services	• Operate/Maintain • Reservoir Maintenance (400 million gallon capacity) • Customer Service • Security Vulnerability Assessment
Start Date	1990
Population Served	350,000
Client Reference	Ms. Kathy Crews Interim General Manager A/F County Water Resources Commission 9750 Spruill Road Alpharetta, GA 30202 Telephone: 770.664.7455

Township of Maple Shade, New Jersey

Contract O&M of Water and Wastewater Facilities



Veolia Water North America – Central, LLC (Veolia Water) assumed operation of the Maple Shade's water and wastewater facilities in August 1988 while the Township was under consent orders from the New Jersey Department of Environmental Protection as well as the U.S. Environmental Protection Agency (EPA). Within 10 weeks, we brought the wastewater facility into compliance.

Veolia Water provides comprehensive O&M services for Maple Shade's 2.4- and 2-MGD ion exchange water treatment facilities. We also serve the Town's wastewater facilities, which include a 3.4-MGD advanced wastewater treatment facility and six pump stations ranging in capacity from 1,000 gpd to 3,000 gpd. Veolia Water also maintains approximately 55 miles of wastewater collection and water distribution systems.

Veolia Water assumed operation of these facilities in August 1988 while the Township was under consent orders from the New Jersey Department of Environmental Protection as well as the EPA. Within 10 weeks, we brought the wastewater facility into compliance.

Veolia Water has maintained the operation of the Township's aging water treatment plants and distribution system without violations and without loss of service. Water is treated for iron using ion exchange. Chlorination and pH adjustment are also part of the treatment process for disinfection and stabilization.

The Township's water facilities, which date in part from 1925, have undergone continuing rehabilitation to guarantee consistent water quality. This has included the development and implementation of a capital improvement program and the replacement of distribution lines and other equipment that was no longer functioning properly because of age.

In 1990, Maple Shade's advanced extended aeration wastewater plant was brought on-line. Veolia Water operated the facilities through startup and managed the transition to the new facility. On startup, the plant was brought into compliance and has maintained this level of performance. Veolia Water has also developed and implemented an industrial pretreatment program that led to the Township imposing fines on several industries.

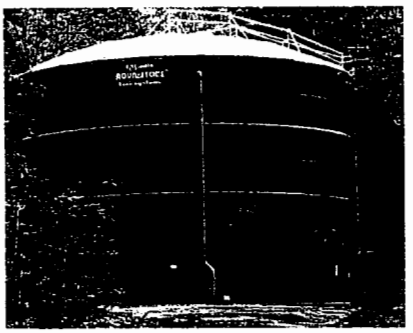
Maintenance of all systems is managed through our proprietary computer data management system, which provides a proactive response to maintenance needs and record keeping for all maintenance activities. Veolia Water reimburses 100% of the unused repairs and maintenance budget each year. In addition, Veolia Water assists the Township with regulatory matters and has succeeded in defending the Township's position with DEP to raise the phosphate limits on its permit. The American Water Works Association awarded this project its President's Gold Performance Award two consecutive years.

Facilities	• 3.4-MGD Envirex Tertiary WWTP • Collection System (53 miles) • 6 Pump Stations • Biosolids Disposal — 438 dtpy • 2.4-MGD Ground WTP • 2-MGD Ground WTP • 5 Wells (1.8 MG) • 1 Elevated Water Tower/1 Standpipe (1 MG) • Distribution System (55 miles) • Meter Replacement Program
Scope of Services	• Operate/Maintain/Manage • Customer Service • Industrial Pretreatment Program • Security Vulnerability Assessment (Water Facilities)
Start Date	1988
Population Served	19,500
Client Reference	Mr. George Haeuber Township Manager Maple Shade Township Maple and Main Streets Maple Shade, NJ 08052 Telephone: 609.779.9610

VEOLIA Water

SOUTHERN WATER AND SEWER DISTRICT, KENTUCKY

Operations and Management of Public Works



Under a contract that began in 2000, Veolia Water North America –South, LLC (Veolia Water) and the Southern Water and Sewer District of Floyd County, Kentucky, joined forces to expand the District's water system and find solutions to water losses. Veolia Water designed, financed and built 24 miles of new distribution system, adding three pumps and three tanks, to bring 500 additional connections into the water and sewer district. We are also responsible for the contract operations, maintenance and management (O&M) for the water system under a long-term agreement. The water system includes a 2-MGD surface water treatment plant, 285 miles of water lines, 25 pump stations and 24 water storage tanks. Veolia Water also provides meter reading, meter replacement, billing and collection, as well as customer service.

Veolia Water and the Southern Water and Sewer District of Floyd County formed a public-private partnership in May 2000 to expand the District's water system and find solutions to water losses. Under this long-term, 20-year, contract, our firm has designed, financed and built 24 miles of new distribution system, adding three pumps and three tanks, to bring 500 additional connections into the water and sewer district. A second expansion project followed to bring additional customers onto the system. A third segment is underway that will bring the total of additional lines to approximately 100 miles and new connections to some 1,500.

Under this contract, Veolia Water operates, maintains and manages the District's 2-MGD drinking water plant and existing distribution system. This multi-media surface water plant processes water from the Levisa Fork of the Big Sandy River to drinking water standards. The plant treats river water through flash-mixing, chemical addition, coagulation, flocculation, clarification, filtration and disinfection. The distribution system currently consists of 285 miles of lines, 13 pump stations and 24 ground storage tanks.

Unaccounted for water losses, estimated to exceed 50 percent, presented a serious financial and environmental burden for the community. Veolia Water immediately initiated a program of distribution line repair and meter replacement to curtail losses. At the end of the first year of operations, losses had been reduced by 20 percent.

Additionally, Veolia Water has implemented a management program to help integrate the Beaver-Elkorn and Mud Creek water districts into the newly formed Southern Water and Sewer District. All existing District employees were offered employment with Veolia Water at equal wages and better benefits. They are receiving training in new technologies and in our stringent maintenance and safety programs.

Facilities	• 2-MGD Surface Water Treatment Plant • Distribution System (285 miles) • 25 Pump Stations • 24 Water Storage Tanks (2.8 MG) • 0.1-MGD Extended Aeration Wastewater Treatment Plant (startup 3/05)
Scope of Services	• Operate/Maintain/Manage • Design/Build Services • Project Financing • Purchase 0.3 MGD • Meter Reading • Meter Replacement Program • Billing/Collection • Customer Service • Security Vulnerability Assessment • Capital Expansion Program
Start Date	2000 – Ongoing through 2020
Population Served	18,090
Client Reference	Mr. Brett Davis Deputy County Judge County Courthouse Martin County Prestonsburg, KY Telephone: 606.886.9193

VEOLIA Water

Southern Water and Sewer District, Kentucky

Veolia Water developed an innovative plan to reduce the financial impact of the improvements and expansion on the District and the residents.

Many customers along the distribution system were not connected and multiple homes were connected to a single meter. We offered customers the opportunity to connect to the system at a reduced connection fee with a deferred payment plan. Additionally, we provided the District with a first-year concession fee.

District revenues will increase drastically as water losses are further curtailed and the customer base increases. In addition to arranging long-term financing for the District, we immediately began applying for State grants and low-interest loans to help the District expand even further.

Veolia Water rapidly mobilized to address the immediate needs of this client. In the first few weeks of the project, new equipment was provided to ensure extensive repairs and line and facility maintenance were done efficiently and correctly. Work included repairing water line and fire hydrants, locating valves, and modifying the water treatment plant.

In 2005, the District's customer base of 6,030 is nearly the twice the original 3,800 served prior to Veolia Water's O&M.

CITY OF PIKEVILLE, KENTUCKY

Operation and Management of Public Works

This public-private partnership, which began in 1987 with a contract for the operations, maintenance and management (O&M) of the City's wastewater system, now involves the operation and management of the public works and utility systems (water, wastewater, natural gas, and sanitation), systems that serve a population of more than 7,000. Over the years, Veolia Water North America –South, LLC (Veolia Water) has worked with the City to achieve cost savings, implement system improvements, and to lower the overall cost of service to the citizens of Pikeville. Over the course of the contract, Veolia Water has also saved the City over $1 million in capital costs and more than $200,000 in O&M costs, all while improving utility services to the citizens dramatically. This record of accomplishment has been recognized with a number of awards for this project, including the Governor's Environmental Award for Best Operated Water Treatment Facilities, and recognition as one of the top five small plants in the State of Kentucky, by the American Waterworks Association and the Kentucky/Tennessee Water Environment Association.

Under a contract that has been renewed or extended seven times, Veolia Water provides O&M for the City of Pikeville's utility systems, including water, wastewater, natural gas, and sanitation.

Our first contract with the City was in 1987, and involved providing complete O&M services for the City's existing trickling filter wastewater treatment plant, as well as their 4.8-MGD water treatment facility.

When Veolia Water assumed O&M responsibility, it was recognized that the existing wastewater treatment plant was overloaded, and was suffering from hydraulic and organic loadings (as high as three to four times the original design load) problems.

To address this problem, we assisted the City in building the new 2-MGD extended aeration wastewater plant. Using a DBO approach, Veolia Water worked the City's engineers to design and build this facility under a fixed, not-to-exceed price with a long-term warranty covering the plant and equipment. Veolia Water also assisted the City with the 201 Planning Process and obtained a new loan under the State Revolving Loan Fund. Construction of this new facility began in 1989, and it began treating flows in 1991 with first phase completion; the second and final phase of construction was completed in 1992.

This contract also involved providing startup and management services for a new regional water treatment plant. The City's new 6-MGD surface water plant utilizes processes that include chemical coagulation, flocculation, sedimentation, filtration, disinfection and fluoridation, and the system includes storage and high-service pumps. The raw water pumping for this plant station is equipped with a combination of in-stream filters and mechanical screens.

Veolia Water's contract was expanded in 1989 to include the operation of the Public Works Department, which encompasses water distribution, customer service, sewer collection, gas distribution, garbage collection and street maintenance.

One of the challenges of the Public Works function is the maintenance of the City's drainage system, which was constructed as part of a large-scale civil engineering project—where the Levisa Fork of the Big Sandy River was relocated out of downtown Pikeville along with a railroad line and road through a cut-through in a mountain. The resulting drainage system involves redirecting streams into a manmade lake, which acts as an equalization basin in heavy rain. A flood gate and pump are used on the creek to pump water out during high water events. The system consists of pipes and culverts of metal, PVC and concrete ranging in diameter from 6 to 48 inches. The pipes and catchbasins are cleaned on a periodic basis. The streams within the City are also cleaned periodically to remove debris and buildup of sediment and rock. In addition, Veolia Water operates a street sweeper daily to help keep coal dust generated from extensive truck traffic from clogging the stormwater system.

Over the course of this contract Veolia Water has handled several disaster flood events. In 1997, as a result of stream flooding, roads were washed out, a mudslide claimed two houses, culverts were blocked, and flood pumps were put into operation. This event occurred while utility O&M resources were severely strained, mobilizing to handle the multiple problems simultaneously. The successful management of these events

City of Pikeville, Kentucky

involved coordinating the assistance from outside contractors and the Kentucky Department of Environmental Services.

In late 1999, our contract was extended for an additional term. We provided $.5 million to match State and Federal funds for upgrades to the water treatment system. Improvements to the raw water intake station included a new grit cyclone and overall rehabilitation. At the treatment plant we added a fifth multi-media final filter, additional telemetry and converted from chlorine gas to sodium hypochlorite for disinfection. In the distribution system, we added a new 0.5 million gallon ground storage tank for finished water, a new pump station and more fire hydrants. These improvements resulted in a reduction in the City's ISO rating from six to four, which means lower insurance premiums and even more savings.

In 2003, we replaced all the collection, distribution and natural gas lines in historic downtown Pikeville.

The City of Pikeville again demonstrated its confidence in Veolia Water in 2004. Yet another scope expansion turned over responsibility for the City's landscaping and parks department. Veolia Water will provide regular mowing for the parks and cemeteries, landscape park entrances and maintain the ballfields and pool. Further, we are charged with event scheduling for public and sports teams' use of the parks and ballfields.

Veolia Water has also maintained a strong commitment to the Pikeville community over the years, working to improve the overall quality of life by providing donations and assistance to meet community needs. Among the community-related activities that we have sponsored and been a part of are:

- Hillbilly Days - Cooking and providing barbecue for the Annual City of Pikeville's Employee Picnic.
- Youth Sports - Sponsoring and assisting in coaching children's baseball and softball teams.
- Education - Donating to and sponsoring classes at Pikeville College, and teaching special courses on water treatment at Pike County Schools.
- Community Beautification - Working with the Chamber of Commerce and Downtown Association on beautification efforts.
- Community Betterment - Cooking and providing barbecue for the "Hammering in the Hills" Habitat for Humanity event, an event in which former President Jimmy Carter participated, where we provided meals to over 1,500 people.
- Tours and Open Houses - Sponsoring water plant tours, including one for students of Mud Creek Elementary School in Floyd County.

Wastewater Facilities	• 2-MGD Extended Aeration Wastewater Treatment Plant • Sludge Disposal — 388 dtpy • 14 Pump Stations • Collection System (54 miles)
Water Facilities	• 6-MGD Surface WTP • Raw Water Pump Station (4 MGD) • 18 Water Towers • 14 Water Pump Stations • Distribution System (74 miles)
Scope of Services	• Operate/Maintain/Manage • Full Public Works • Customer Service • Meter Reading and Meter Replacement Program (Water) • Collection and Distribution System Rehabilitation • Septage Receiving • Natural gas distribution • Sanitation (collection and transfer station) • Industrial Leachate • Customer Service • Parks/Cemetery Maintenance & Landscaping • Swimming Pool • Ballfield Scheduling
Start Date	1987 - Ongoing
Population Served	7,000
Client Reference	Mr. Donovan Blackburn City Manager City of Pikeville 118 College Street Pikeville, Kentucky 41501 Telephone: 606/437-5100

The public-private partnership between the City and Veolia Water has also been recognized with a number of awards. In 1999 and 2000, the Pikeville water plant was among the top five small plants in the state, according to the American Waterworks Association and the Kentucky/ Tennessee Water Environment Association. In 1989, the City's water facility received the Governor's Environmental Award for Best Operated Water Treatment Facilities, and the Outstanding Community Water Management award from the Kentucky Natural Resources and Environmental Protection Cabinet.

The City of Pikeville is a dynamic community, which has faced many challenges during the course of the Veolia Water's contract, and we have worked with the City to address these challenges by providing a comprehensive

range of support services and resources. Veolia Water has saved the City over $1 million in capital costs and $200,000 in O&M costs. In another example, Veolia Water implemented a water and gas meter change-out program, which has produced over $200,000 a year in additional revenue for the City, without raising water rates. In addition, Veolia Water provided $500,000 in capital to the City to match State and Federal funds for the upgrade of their water plant, and we prepared and received a two percent low-interest loan for the City to purchase new solid waste truck.

TAUNTON, MASSACHUSETTS

Total Asset Management for Municipal Wastewater Facilities

In 1998, in a historic first-ever agreement, the City of Taunton entered into a 20-year public-private partnership with Veolia Water North America - Northeast, LLC (Veolia Water) for the Total Asset Management of its wastewater treatment facility and Pollution Prevention (P2) program. In addition to traditional operation, maintenance and management (O&M) responsibility, Veolia Water assumed complete responsibility for all facility maintenance and repair expenses as well as capital repair or replacement items.

Veolia Water provides Total Asset Management for the City of Taunton's wastewater collection and treatment facilities. This includes operating and managing facilities that include an 8.34-MGD wastewater treatment system, 27 lift stations and biosolids (sludge) disposal for 1,570 dry tons per year. The plant has peak flow capabilities of 22.4 MGD and treats average flows of about 7.2 MGD.

The City's wastewater facility provides advanced treatment of municipal and industrial waste. This treatment facility uses preliminary bar screens and comminutors, an activated sludge treatment process, secondary clarification, with chlorine disinfection and dechlorination. Solids from the treatment process are dewatered, using a centrifuge, and then disposed of by landfilling.

This advanced secondary treatment plant operates with seasonal limits on ammonia, and treats influent flows for metals from local industrial process. Compliance issues, odors and combined sewer overflows netted the City an Administrative Order from the U.S. Environmental Protection Agency (EPA). Veolia Water brought the facility into compliance with the Order while saving the City of Taunton millions of dollars in construction costs. Throughout construction, compliance was exceptionally good and odors were reduced. Veolia Water also assists the City with all permit issues and represents them to environmental regulators.

This contract, a historic and first-ever type of agreement, began in 1998. It is a 20-year Public-Private Partnership with Veolia Water responsible for providing Total Asset Management of the City's wastewater treatment facility and P2 program. A unique aspect of this agreement with the City of Taunton is a P2 community awareness program, where our staff are responsible for developing and presenting an educational program to local businesses, industries and citizens, educating them as to how their day-to-day activities contribute to the abatement and prevention of pollution in Taunton. The City's Industrial Pretreatment Program (IPP) program calls for extremely low limits for silver, which is difficult for the 11 metals finishers industries to meet, and these educational efforts have aided these industries in striving to meet these requirements.

The City's IPP program involves monitoring and enforcement for 24 Significant Industrial Users (SIUs). This includes conducting site inspections and sampling events, preparing permits and enforcement actions, and submitting an annual report to U.S. Environmental Protection Area (EPA). Veolia Water also hosts a City-wide annual household hazardous waste collection day, and prepares a quarterly pollution prevention news-letter for distribution to local industries and City officials. We also collaborate with the Taunton River Watershed Alliance on a monthly volunteer river monitoring program for 17 sites along the Taunton River.

"We have effectively cut the cost for... necessary capital improvements by more than half...The City will save more than $62 million...while providing rate stabilization over the next 20 years."
- Mayor Robert G. Nunes

Under the Total Asset Management approach, Veolia Water has O&M responsibility, as well as complete responsibility for facility maintenance and repair expenses, and capital repair or replacement items.

The City has funded $11 million in capital improvements using State Revolving Fund money from the Commonwealth of Massachusetts. As this capital improvement work proceeded, the primary challenges of this project included the

Taunton, Massachusetts

normal operation of the facility and maintaining compliance. As various segments of the treatment process were taken off-line for upgrade or rehabilitation (or were interrupted for other work), Veolia Water project staff employed innovative methods for ensuring the continued effective operation of the wastewater facility.

Odors historically had been an issue for the wastewater plant's neighbors, and Veolia Water implemented a stringent odor control plan immediately at startup. A primary component of this plan was the Good Neighbor Advisory Committee. Comprising facility neighbors and project management, the members of this Committee work together to identify sources of odors and other possible nuisances, such as noise or night-time lighting, and reduce or eliminate them as quickly as possible. Through pagers or a special hotline phone number, area residents can notify project management at the first sign of a possible problem. Other steps to address odors have included process modifications and facility housekeeping.

Veolia Water is an active member of the Taunton community. Among the ways we have demonstrated our corporate citizenship are:

- $1000 annual scholarship to Taunton High School for students who pursue a career in environmental science.
- $1000 annual donation to the Adopt-A-Park program to clean up and improve City parks.
- $250 per year to Weir River Festival. The wastewater facility is located in the Weir section of Taunton along the banks of the Taunton River.
- $500 per year to the Mayor's Worthy Cause, a summer-time parks program for youth.
- Donations to the Taunton Patrolman's Association for Child Identification Program.
- Participate in "Project Intern," a program that places high school students in the workplace for real-life experiences.
- Assist students with science fair projects.
- Judge at the high school science fair.
- Member of the Taunton Public School Science and Technology Community Advisory Council.

Facilities
- 8.4-MGD Advanced Secondary Wastewater Treatment Plant
- 30 Lift Stations

Scope of Services
- Total Asset Management
- Design/Build
- Operate/Maintain/Manage
- Industrial Pretreatment Program
- Septage Receiving
- Industrial Leachate
- Combined Sewer Overflow Management
- Biosolids Disposal - 2,184 dry tons per year

Start Date 1998

Population Served 26,500

VEOLIA Water

TAMPA BAY WATER, FLORIDA

Regional Water Facility – Design/Build/Operate Project

On October 11, 2002, Veolia Water North America - South, LLC (Veolia Water), dedicated a new water regional water treatment plant for Tampa Bay Water in Florida, completing a more than two-year design/build project. The project began in April 2000 when, following a year-long selection process among four competitive teams, Tampa Bay Water awarded a $135-million, 15-year (with a 5-year option) contract to Veolia Water for the design, construction and operation, using the DBO delivery approach, of the agency's regional surface water treatment plant. In 2003, the facility received the prestigious *Infrastructure Award* from the National Council for Public-Private Partnerships (NCPPP).

To implement this project for Tampa Bay Water, Veolia Water brought together a management and O&M team from the resources of our firm, a design/build team from our Engineering & Construction group, including local engineering and construction partners, and process and technical experts from our parent company, Veolia Water, S.A., to support the implementation of the ACTIFLO® treatment process. This new water treatment plant is designed to meet the treatment requirements of Hillsborough County; the Southwest Florida Water Management District; Florida Department of Environmental Protection; as well as those of the U.S. Environmental Protection Agency (EPA).

"Eighty million dollars represents compelling savings," said Jerry Maxwell, the General Manager of Tampa Bay Water. "These savings translate into lower water rates for our residents. Forward-thinking utilities have to consider the benefits of working with a private-sector partner that provides access to the latest technology and operational economies of scale."

Water from the three supply sources is treated to levels that exceed current EPA Safe Drinking Water Act requirements. In addition, the plant was constructed in an environmentally sensitive area and required an innovative process and design approach. Tampa Bay Water, a consortium of six municipalities, is the largest wholesale supplier of water in Florida, providing water to its members who in turn supply it to nearly two million residents of the area. Consumers reside in the cities of New Port Richey, St. Petersburg and Tampa and the counties of Hillsborough, Pasco and Pinellas.

Facilities	• 66-MGD ACTIFLO Surface Water Treatment Plant • 30-MGD Hydrogen Sulfide Removal Water Facility
Scope of Services	• Design/Build • Operate/Maintain/Manage
Start Date	• 2000 – Construction • 2002 – Operation and Maintenance
Population Served	1,500,000

The project began in April 2000 when, following a year-long selection process among four competitive teams, Tampa Bay Water awarded a $135-million, 15-year (with a 5-year option) contract to Veolia Water for the design, construction and operation, using the DBO delivery approach, of the agency's regional surface water treatment plant.

In August 2000, the plant capacity was increased to 66-MGD, raising the overall contract value to $144 million.

The project includes $79 million in capital (construction) costs, and $56 million in O&M fees, which are expected to generate a 21% savings, or about $85 million, over the 20-year life of the project.

The public-private partnership is Veolia Water's largest in Florida, and the plant is among the most technologically sophisticated in the world. The project is expected to save the region millions over the 15-year term of our contract, and costs are a significant issue in the Tampa Bay region because the agency was required to cut groundwater

pumping at long-producing groundwater wells at the end of 2002, and the plant is the cornerstone in the first phase of its regional Master Water Plan. Because the new sources of water are more expensive to develop and supply than the area's traditional groundwater, the agency – and the region's water customers – are concerned with rising costs.

In 2003, the facility design was recognized with several prestigious awards, including:

- *Infrastructure Award* from the National Council for Public-Private Partnerships.
- *Build America Award* from the Associated General Contractors of America.
- *Grand Prize – Design* from the American Academy of Environmental Engineers.

The NCPPP awards process is arduous and designed to identify the best in public-private partnerships. Tampa Bay Water and [Veolia Water] should be proud to be one of the few selected for this prestigious award."
- Richard Norment, Executive Director for the NCPPP

Other project awards include the *2003 Facility Excellence Award* from Region IV, Florida Water & Pollution Control Operators Association and a *Safety Award* from Veolia Water North America for one year no lost-time accidents.

Under a separate contract with this same client, Veolia Water, in 2002, began providing contract O&M of the S.K. Keller Hydrogen Sulfide Treatment Facility. This is a 30-MGD system that addresses the needs of groundwater supplies.

WOONSOCKET, RHODE ISLAND

Design/Build/Operate Project for Wastewater Facilities

Seeking facility enhancements and upgrades with no up-front costs, the City of Woonsocket entered into a 20-year agreement with Veolia Water North America - Northeast, LLC (Veolia Water) in 1999. Improvements being implemented under this agreement are plant-wide, touching virtually aspect of the treatment process at the City's 16-MGD secondary activated sludge wastewater treatment plant. Veolia Water assembled a team of multi-disciplined professionals to implement this project, and worked with the City to secure tax-exempt financing.

Veolia Water is currently involved in a long-term, 20-year, design/build/operate (DBO) contract with the City of Woonsocket. This contract began in 1999, when the City, seeking to upgrade its wastewater plant with no up-front costs, selected Veolia Water for this contract.

The first step of the process involved the implementation of a design/build effort focused on wide-ranging improvements for this regional wastewater treatment facility. The improvements being managed and implemented by Veolia Water are plant-wide, touching virtually aspect of the treatment process at the City's 16-MGD secondary activated sludge wastewater plant. Preliminary enhancements included replacing the bar screens with in-channel grinder pumps, revamping the grit removal system, and making improvements to the aeration system to increase oxygen transfer efficiencies and optimize conditions for achieving nitrification/denitrification. New Gravisand® filters are being installed as part of this effort to provide for the polishing of secondary clarifier effluent, and to enhance the quality of treated water being discharged to the Blackstone River. Other planned enhancements and additions for the wastewater plant include the construction of a new chemical feed building for chemically-enhanced primary treatment, and a cover for the gravity thickener to control odors, as well as conversion of the existing aeration tanks, and the addition of a filtrate pump station to transport water to the thickener.

This City's plant is a municipal wastewater facility processing domestic and industrial wastes. Major processes include preliminary screening and grit removal, primary sedimentation, secondary treatment through activated sludge, secondary clarification, chlorine disinfection, dechlorination with sulfur dioxide and year-round nitrogen/phosphorus removal. Sludge is gravity thickened, then incinerated. Historically, NPDES permit compliance at the plant was poor, and the City was facing significant financial impacts resulting from regulatory consent orders. The City, and the other communities served by this plant, was also concerned about meeting new environmental needs resulting from more stringent discharge requirements being considered by the State of Rhode Island. Veolia Water assumed the risk of meeting these new discharge limits—now and for the next 20 years.

During the first six months of the contract O&M agreement, Veolia Water made great strides toward improving wastewater treatment and achieving total compliance with discharge limits. These accomplishments included:

- Complete rehabilitation of two aeration basins.
- Overhaul of a secondary clarifier, including the drive unit.
- Installation of a new SCADA system.
- Startup of the chlorination/dechlorination equipment.
- Chemical trials and conversion to a different polymer designed to enhance primary treatment through improved settling.

For the DBO project, Veolia Water assembled a team of multi-disciplined professionals, and worked with the City to secure tax-exempt financing for 20 years. In addition, a $3.9 million concession fee was paid by Veolia Water to the City and three other communities (North Smithfield, Rhode Island; and Bellingham and Blackstone, Massachusetts), to reimburse them for improvements made prior to our O&M agreement.

Woonsocket, Rhode Island

Included in the agreement between the City and Veolia Water was the provision to design and construct the necessary capital improvements for the treatment facility. This effort included preparing and receiving Rhode Island Department of Environmental Management's approval for the Facility Plan Amendment.

This wastewater treatment plant is designed to treat an average daily flow of 16 million gallons and peak flows of 32 million gallons. Daily flows currently average 12 million gallons.

This contract is anticipated to save the City of Woonsocket $7 million. The plant upgrades were completed ahead of schedule and for a fixed fee.

In the first two years of operation, this award-winning project has received five honors for operational excellence by the Narragansett Water and Pollution Control Association:

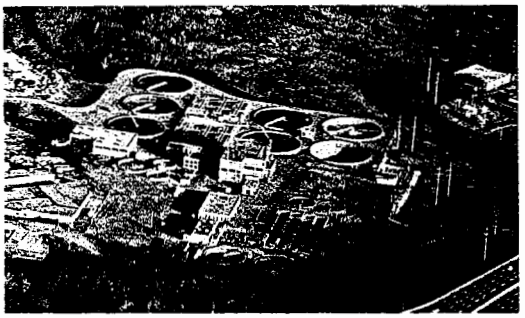
- 2003: Most Improved Treatment Plant Greater than 5 MGD and Most Efficient Treatment Plant Greater than 5 MGD
- 2002: Most Efficient Treatment Plant Greater than 5 MGD; New England Pump and Valve Award for Most Improved in Water Pollution Control--Large Plant Category; and Maguire Group Award for Outstanding Achievement in Water Pollution Control--Large Plant Category

Facilities	• 16-MGD Tertiary Wastewater Treatment Plant • 7 Pump Stations • 2 Siphons
Scope of Services	• Design/Build (Capital Improvements Program) • Operate/Maintain/Manage • Project Financing • Septage Receiving
Start Date	1999 (DB) 2001 (O&M)
Population Served	54,000

Even before all the upgrades were completed, the City's plant, once ranked worst in the State of Rhode Island, received top honors from the Narragansett Water Pollution Control Association, the Maguire Award for Most Improved in Water Pollution Control, and New England Pump and Valve Award for Outstanding Achievements in Water Pollution Control.

CRANSTON, RHODE ISLAND

Design/Build/Operate Project for Municipal Wastewater Facility



Veolia Water North America - Northeast, LLC (Veolia Water) is leading a team that is responsible for implementing a 30-year lease transaction for the City's entire wastewater treatment system. This project involves financing, design/build of capital improvements, and contract operations, maintenance and management (O&M) of the wastewater system. The City's wastewater system includes a 23-MGD secondary wastewater treatment plant, 22 pump stations and a 190-mile collection system.

In the late 1980s, the City of Cranston was under three separate consent orders and faced serious maintenance and staff problems while preparing to upgrade its 23-MGD secondary wastewater treatment plant to a tertiary wastewater treatment facility.

As a result, in 1989 they selected Veolia Water to provide full-service O&M for this wastewater plant and 22 pump stations. The City's plant is a secondary and tertiary facility processing domestic and industrial wastes, providing for year-round nitrification. Veolia Water also has O&M responsibility for the City's 190-mile collection system, as well as management of the City's Industrial Pretreatment Program and the merchant biosolids incineration and disposal program.

In 1997 the scope of this contract was expanded when Veolia Water, as the leader of a design/build/operate (DBO) team, was selected to implement a 25-year lease transaction for the City's entire wastewater treatment system. This DBO project involves:

- Financing, whereby the City receives an up-front, prepaid lease payment
- Design/build services for making certain capital improvements, including an upgrade to advanced wastewater treatment
- Continued private contract O&M for the wastewater facilities.

Recent scope expansions added new capital work and extended the term of this contract to 30 years.

This plant has two incinerators, 10- and 20-dry-ton-per-day multiple hearth furnaces to process over 3,000 dry tons per year of biosolids from the wastewater treatment plant and an additional 3,000 from other sources. Ash from the incinerators is disposed in a landfill.

Facilities	• 23-MGD Activated Sludge WWTP • Collection System (190 miles) • 22 Pump Stations
Scope of Services	• Operate/Maintain/Manage • Design/Build • Project Financing • Industrial Pretreatment Program • Collection System Rehabilitation • Septage Receiving • Effluent Reuse • Meter Reading • Biosolids Disposal — 3,737 dry tons per year from WWTP and 4,766 from outside sources
Start Date	1989-1997 – Contract O&M 1997-2027 – DBO Contract
Population Served	140,000

"... [Veolia Water] was under the spotlight to achieve environmental compliance, but the company has proven itself and continues to be a fantastic water partner, operating and managing these municipal assets safely and responsibly while meeting and often exceeding strict permit requirements."
- Joseph LaPlante, NWPCA President

VEOLIA Water

Cranston, Rhode Island

In recent years, the State of Rhode Island has substantially reduced the amount of wastewater residuals (sludges) that can be disposed in its landfill. To address this need, Veolia Water conducted a pilot study, the result of which showed that the City could generate a revenue stream by accepting and processing biosolids from neighboring communities. To make this merchant type of approach possible, we performed a comprehensive maintenance evaluation. This resulted in a program to improve the mechanical condition of the facility, with particular emphasis given to the incinerators to ensure that they were reliable in terms of processing biosolids from other sources.

Odors have remained a constant challenge at this facility, and Veolia Water has established a Community Odor Committee to aid in identifying times and sources of odors. This proactive alliance has made great strides toward controlling odors from the plant. Planned capital improvements include advanced processes and equipment that will have a significant impact on our ability to mitigate this problem.

As a part of our O&M services approach, Veolia Water has provided integrated personnel training and safety programs. O&M staff at this facility are cross-trained and given opportunities for planned career advancement. Veolia Water has also instituted a unique and innovative incentive bonus plan for the plant's union workers.

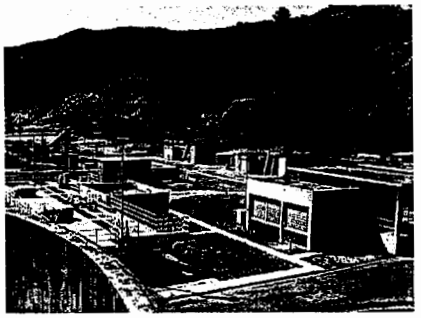
This project has been recognized with a number of awards, including:

- Most Improved Large Plant in the State from the State Operators Association.
- Commendation for O&M Excellence from the State Department of Environmental Management.
- Best Large Plant in the State by the State Operators Association.

The Veolia Water O&M approach for the City of Cranston's wastewater facilities has reduced annual operating expenses for the wastewater facilities by more than $500,000, substantially defraying the costs associated with upgrading the plant.

CITY OF RICHMOND, CALIFORNIA

Design/Build/Operate Project for Regional Wastewater Plant



Veolia Water North America – West, LLC (Veolia Water) provides operation and maintenance (O&M) services for the City of Richmond's 16-MGD wastewater treatment facility. This is a design/build/operate (DBO) contract, with Veolia Water Systems (VWS) responsible for the design and construction of more than $7 million in capital improvements to bring the system up to optimum operating performance standards. The 20-year partnership is projected to save this city nestled on San Francisco Bay approximately $75 million dollars over contract term.

Veolia Water recently concluded a multi-million dollar rehabilitation of the City of Richmond, California's wastewater treatment plant, upgrading systems plant-wide. Completed in just two years, this project focused on restoring environmental compliance and addressing historic odor problems.

The project began in 2002 when the City of Richmond awarded Veolia Water a $60 million DBO contract to address the needs of its 16-MGD wastewater treatment plant. This 20-year contract involves long-term O&M of the wastewater facilities and included implementation of more than $7 million in capital upgrades and improvements for the wastewater treatment plant. The capital improvements program focused on upgrading, modernizing and automating existing systems at the plant.

Capital improvements included a new automated bar screen; rehabilitated primary clarifiers, rebuilt digesters and new domes, and rebuilt and improved aerators using Envirex® systems; new computerized controls throughout the plant; new disinfection system and equipment and controls; and a new chemical containment facility to enhance worker safety and environmental protection and improve facility appearance.

Using the DBO approach, Veolia Water has projected a $75 million saving for the City over the term of the agreement. These savings will be achieved through economies of scale, core competency focus and innovative technology and work practices.

In addition to the projected savings, the public-private partnership between Richmond and Veolia Water provides other benefits such as stabilized operations costs, better operating conditions and guaranteed environmental compliance and employment of facility personnel—all while leaving the facility ownership and rate-setting authority in the hands of the City of Richmond.

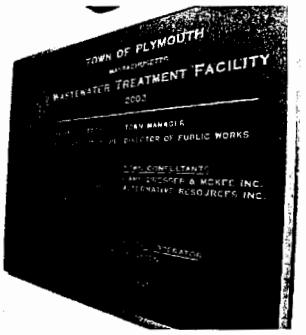
In a demonstration of its satisfaction with Veolia Water's work, in 2004, the City expanded our scope to include a similar effort to the 240-mile collection system—adding $17 million in capital to our O&M project scope. The scope of work includes a major rehabilitation of the City's collection systems and lift stations, as well as asset management of the systems when capital improvements are complete.

Facilities	• 16-MGD Wastewater Treatment Plant • Wastewater Collection System (185 miles) • Stormwater Drainage System (94 miles) • 13 Wastewater Lift Stations • 7 Stormwater Lift Station
Scope of Services	• Operate/Maintain/Manage • Design/Build • Capital Improvement Program • Sludge Disposal
Start Date	2002
Population Served	60,000

VEOLIA Water

TOWN OF PLYMOUTH, MASSACHUSETTS

Design/Build/Operate Project for Municipal Wastewater Facilities



Veolia Water North America -Northeast, LLC (Veolia Water) provided design/build/operate (DBO) services for the replacement of the Town's existing wastewater facilities. This long-term agreement involved the design and construction of a new, 3.1-MGD sequencing-batch reactor (SBR) wastewater treatment plant, which is now being operated by our firm. The O&M project also involves maintaining the collection system and providing sludge disposal. Under this DBO project with Veolia Water, the Town expects to realize over $15 million in savings over the 20-year term of this agreement.

On June 28, 2002, Veolia Water started-up a new SBR treatment system for the Town of Plymouth, Massachusetts. This 20-year project is implemented using the DBO project approach and has involved the construction of a new 3.1-MGD treatment plant with three SBR tanks (providing a peak treatment capacity of 9 MGD).

Veolia Water is the DBO project manager and long-term operator for this facility, and our team for this project included: Veolia Water's engineering and construction affiliate (Veolia Water Systems), as the design/build engineer, and Veolia Water, S.A., as the project Guarantor.

Veolia Water worked with the Town to finance this project under U.S. Internal Revenue Service 97-13 rules, using funding from the Massachusetts State Revolving Fund for the $23.3 million in capital costs. Under the terms of this 20-year contract, which began in 1999, the Town owns the plant, and Veolia Water has full risk and responsibility for facilities operations, capital improvements and regulatory compliance for the new plant.

The new wastewater plant is located five miles inland from the original facility, and, under the terms of this contract, Veolia Water bears full risk and responsibility for equipment replacement, capital improvements and regulatory compliance. O&M responsibility includes managing the Town's sludge disposal operations (700 dry tons per year, dtpy), as well as operating and maintaining the wastewater collection and conveyance system.

A key challenge of this DBO project involved keeping the Town's existing wastewater plant in operation during the construction of the new facilities. This plant, now decommissioned, was an aged 1.75-MGD wastewater treatment plant that routinely exceeded the State's discharge limits for Plymouth Harbor.

State legislation enacted in Massachusetts in 1987 limited the discharge of treated wastewater into Plymouth Harbor to no more than 1.75 MGD. The new treatment facility is designed to discharge 1.75 MGD to Plymouth Harbor and the remaining 1.25 MGD to infiltration basins located on the new treatment facility site where water will percholate down to recharge the groundwater table. An equalization tank, located at the chlorine contact chamber, is used to control and limit effluent flows to the allowable permit limits.

Facilities	New Facilities: • 3.1-MGD Sequencing Batch Reactor WWTP • 8 Wastewater Pump Stations • Septage Receiving Station • Collection System (50 miles) Existing Facilities Operated on an Interim Basis until Decommissioned: • 1.75-MGD WWTP • 8 Wastewater Pump Stations • Collection System (50 miles) • Sludge Disposal
Scope of Services	• Design/Build • Asset Management (WWTP) • Interim O&M (Original Facilities) • Long-Term O&M (New Facilities and Collection System) • Biosolids (Sludge) Disposal - 700 dry tons per year
Population Served	16,000

VEOLIA Water

Town of Plymouth, Massachusetts

The SBR treatment process involves screening and degritting of wastewater influent, which then flows to the SBR units that operate using a batch process approach, with intermittent filling, aeration, settling and decanting. Effluent from the basins is disinfected in a chlorine contact tank prior to discharge.

Three SBR units are included as a part of the plant design. Under normal operating conditions, with all three units in operation, only one unit is filled or decanted at any given time. Decanting is intermittent, approximately 6,700 gpm, and the downstream units are sized accordingly.

The design of this new wastewater plant also includes odor control systems and a new pump station at the site of the existing wastewater plant.

In an unusual staffing approach, all of the Town's existing wastewater treatment plant employees are leased from the Town, thereby allowing staff to continue in their municipal pension plan.

Appendix B

Part Two

Dufresene-Henry – Supplemental Experience Information

VEOLIA Water

Company History

Dufresne-Henry was founded in 1955 on the principle of personalized service to clients. The firm initially specialized primarily in civil and environmental engineering. It has since developed into a highly diversified company offering specialized expertise in a variety of engineering disciplines as well as in planning, landscape architecture and environmental science. Among our engineering fields of expertise are building systems and industrial facilities design, water supply and wastewater engineering, solid waste management, construction management, transportation engineering, mechanical/electrical/structural engineering, and airport engineering and planning.

Dufresne-Henry maintains 16 offices in New England, New York and Florida. In 2003, we completed more than 1,000 projects company-wide and were ranked 263rd among the *Top 500 Design Firms* as compiled by Engineering News-Record.

Office Locations

- Northampton and Westford, Massachusetts
- West Hartford, Connecticut
- North Springfield, South Burlington and Montpelier, Vermont
- Saratoga Springs, Rochester, Newburgh and Pawling, New York
- Manchester, New Hampshire
- Portland and Presque Isle, Maine
- Port Charlotte, Sarasota, and St. Cloud, Florida

Through the efforts of our approximately 300 staff members, we have gained a reputation for providing a product of high quality and reliability over nearly 50 years of service.

Water Works Engineering

In 2002, Dufresne-Henry organized all of the company's water and wastewater engineering services into a single group whose staff members continue to work from various offices. The reorganization allows us to better assess our clients' needs by assigning a local project manager to serve the client. In addition, we can employ the widely ranging expertise of our entire water/wastewater group to meet the project goals.

Our water/wastewater group comprises approximately 65 engineers, technicians and support staff members who have depth of experience in all aspects of municipal water and wastewater systems. This includes regulatory compliance, financial management, planning, design, construction, and operations.

Water Treatment

Dufresne-Henry has a long track record of water treatment plant experience, encompassing a wide range of facility types, processes, and sizes. In the past two decades the firm has completed projects that evaluated, planned, designed, and constructed or retrofitted more than 40 water treatment facilities.

Water Distribution Systems

Dufresne-Henry has designed hundreds of miles of new and replacement water mains, distribution system expansions, and the rehabilitation of deteriorated or corroded water mains. We have also provided construction observation services for hundreds of miles of gravity and pressure mains. These projects have involved a variety of pipe materials, and construction conditions ranging from highly developed urban areas to residential and rural areas.

Water Storage Facilities

Dufresne-Henry has provided design, construction and resident inspections for more than 60 water storage facilities. These range in capacity of up to 10 million gallons and include aboveground precast/prestressed concrete tanks, steel reservoirs, stand pipes, hydropillars, elevated tanks and below-grade covered storage tanks. Many of these tanks were designed with aesthetic considerations and include SCADA systems.

Pumping Systems

We have provided planning, evaluation, design and construction observation services for more than 75 water pumping facilities. Our projects have included above-ground and underground stations; package, precast and cast-in-place concrete structures; yard piping and valves; clearwells and storage; variable and constant speed pumps and motor controls; standby electrical power generation, instrumentation and controls for operational flexibility and applicable chemical feed systems.

New Source Development

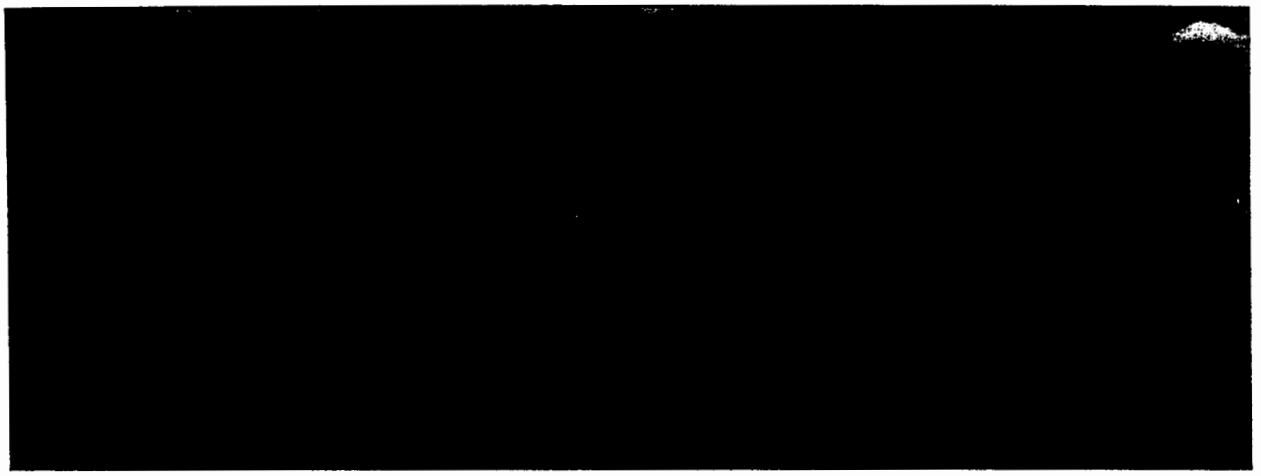
We've helped many New England communities develop new water supplies to meet the demands of growing populations. Dufresne-Henry's extensive experience with regulatory agencies, knowledge of the local geology and strong working relationships with drillers helps minimize project time and cost.

Water System Planning

In our nearly half century in business, we've provided extensive planning services to clients who are developing or updating water system master plans. Among our services are detailed review of existing water sources, distribution and storage infrastructure, and detailed hydraulic modeling of that infrastructure. Our experts use modeling software that includes KY Pipe, Cybernet, WaterCAD, and H_2ONET. By maintaining such an extensive software collection, we're able to meet our client's specific software compatibility needs - particularly those of Geographic Information Systems (GIS).

Operational Support

Dufresne-Henry provides operational support for public water facilities including start-up, the development of operation and maintenance manuals, operator training, trouble shooting of operational problems and adjustment/recalibration of equipment. Our staff includes licensed water systems operators who have hands-on experience.



Construction Services

DH provides bidding assistance, contractor evaluation, full-time resident project inspection, construction contract administration, compliance monitoring (for specifications, plans, and local codes), schedule control, and cost control during construction.

Cost/Quality Control

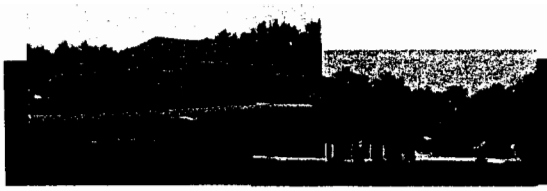
Our quality assurance program mandates that we review all aspects of a project at various milestones throughout its execution. The review is conducted by a team of senior professionals or key project team design members. The review team appraises each work item to ensure that contractors have sufficient and clear information for bidding. They also ensure close client coordination during the project.

Dufresne-Henry has a strong corporate commitment to quality control. Our quality control plan includes the following key principles:

- The project manager and client representative carefully define the project scope and specific design requirements.
- A review committee independently reviews the work of our qualified personnel.
- The project manager conducts routine progress meetings with the client to review our work as it proceeds.
- A design overview committee comprising top Dufresne-Henry management personnel reviews each project to ensure compliance with quality control standards.
- If the project overview committee deems it necessary, each task is revised to promote quality and adhere to project goals.
- The project team follows through on each project to ensure that the client is satisfied.

Client Satisfaction

We have built our reputation by retaining skilled professionals who possess many years of experience in their respective fields. Our team approach consists of creating an elite group of engineering professionals selected from a Dufresne-Henry office most convenient to the project site and managed by a local project manager. Our projects are expertly managed and reviewed - *more than 75 percent of our work comes from repeat clients.*



Water Treatment Facilities

New Hampshire				
Berlin	Surface water	2.0	Conventional	1975
Eastman Village District	Groundwater	0.8	Iron and manganese removal	1998
Goffstown	Surface water	0.6	Ceramic media filtration	1996
Newmarket	Surface water (u/g)	1.0	Conventional (Trident)	1990
Raymond	Groundwater	0.6	Iron and manganese removal	2004
University of New Hampshire	Surface water	1.5	WTP upgrade design	1994
University of New Hampshire	Surface water	1.5	Assistance w/sludge removal	2001
Woodsville	Surface water (u/g)	1.0	Conventional (Trident)	1990
Massachusetts				
Acton Water District	Groundwater	1.0	Aeration plus GAC	1984
Acton Water District	Groundwater	1.0	Aeration	1988
Acton Water District	Groundwater	1.0	Aeration	1988
Acton Water District	Groundwater	0.7	Aeration	1990
Acton Water District	Groundwater	0.6	Aeration plus GAC	2000
Auburn Water District	Groundwater	2.0	Iron and manganese removal	1995
Barnstable Water Co. - Hyannis	Groundwater	3.0	Aeration	1991
Bernardston Fire and Water District	Groundwater	0.3, 0.6	Corrosion control for 2 wells	1996
Bridgewater Water Dept.	Groundwater	1.8	Iron and manganese removal	2000
Chelmsford Water District	Groundwater	3.0	Iron and manganese removal	2004
Cummington	Groundwater	0.3	ph adjustment	2000
Duxbury	Groundwater	1.4	Iron and manganese removal	1999
Easthampton Water Dept.	Groundwater	3.0	Aeration for TCE	1997
Gardner	Surface water	4.0	Conventional (Trident)	1998
Grafton Water District	Groundwater	2.0	Iron and manganese removal	2004
Maynard Dept. of Public Works	Surface water	1.0	Conventional (Trident)	1996
Maynard Dept. of Public Works	Groundwater	1.0	Iron and manganese removal	1998
Maynard Dept. of Public Works	Groundwater	0.6	Iron and manganese removal	2002
Maynard Dept. of Public Works	Groundwater	1.4	Iron and manganese removal	2002
Norfolk	Groundwater	0.8	Aeration, UV	2002
North Raynham	Groundwater	0.8	Aeration	1998
North Sagamore Water District	Groundwater	2.0	Iron and manganese removal	2004
Norwell	Groundwater	2.0	Iron and manganese removal	1996
Pembroke	Groundwater	1.0	Iron and manganese removal	1990
Plainville	Groundwater	1.0	Chlorine, UV	2003
Raynham Center Water District	Groundwater	2.0	Iron and manganese removal	2003
Spencer Water District	Groundwater supply	2.0	Iron and manganese removal	1995
Turners Falls Fire District	Groundwater	1.5	Iron and manganese removal	1989/1996
West Bridgewater Water Dept.	Groundwater	0.7	Iron and manganese removal, UV	2004
West Springfield	Groundwater	5.0	GAC	1992
Westfield	Surface water	4.0	Conventional (Trident)	1994
Westford - Nutting Road	Groundwater	3.0	Iron and manganese removal, UV	2003
Westford - Forge Village Road	Groundwater	3.0	Iron and manganese removal, UV	2003
Vermont				
Barre	Surface water	6.0	Conventional (Trident)	1994
Bellows Falls	Surface water	1.0	Conventional (Trident)	1990
Brattleboro	Groundwater	1.5	Greensand (upgrade)	2001
Brighton	Surface water	0.4	Conventional	1987
Fair Haven	Surface water	0.75	Solid Contact & ABW Filter	1982
Derby Center (village)	Surface water	0.4	Slow sand	1996
Derby Center (village)	Groundwater	0.1	Iron and manganese removal	1980

Dufresne-Henry

Client	Use	Capacity (mgd)	Process	Completion
Vermont (continued)				
Milton	Surface water	0.5	Conventional (Trident)	1985
Hartford	Groundwater	1.44	Iron and manganese removal	Current
Montpelier	Surface water	4.0	Conventional (Trident)	1998
South Royalton	Surface water	0.44	Conventional (Trident)	1991
Waterbury	Surface water	1.0	Conventional (Trident)	1992
Maine				
Consumer's Maine Water District - Skowhegan	Surface water	1.0	Conventional	2000
Dresden Mills	Groundwater supply	0.004	Conventional	1995
Passamaquoddy Water District	Surface water	0.5	Sand media pressure filtration	Current
New York				
Cold Spring (village)	Surface water (u/g)	0.7	Conventional (Trident)	1994
Walden (village)	Groundwater	0.5	Chlorine, corrosion control	1987
Pawling (village)	Surface water	1.0	Conventional	1994
Pawling Water District (town)	Groundwater	0.1	Iron and manganese removal	1997
Rhode Island				
Stone Bridge Fire District - Tiverton	Surface water (u/g)	1.3	Conventional	1983

Wells and Pumping Stations

New Hampshire			
Aquarion Water Company	**Well pumping station**	**-**	**1998**
Charlestown	Well and pumping station: dsgn. & const. observ.	Gravel packed	1989
Durham	**Madbury Road booster pumping station**	**-**	**1993**
Franklin	Well pumping station	Gravel packed	1986
Georges Mills	**Well pumping station**	**2 - 8" bedrock**	**1996**
Hinsdale	Well and pumping station	Gravel packed	1989
Jaffrey	**Booster pumping station**	**-**	**1994**
Lisbon	Well and pumping station	Gravel packed	1980
Milton Water District	**New well and pumping station**	**Gravel packed**	**Current**
New London-Springfield W.P.	Wellfield and pumping station	6 - 16"x10" gravel packed	2000
New London-Springfield W.P.	**Booster pumping station**	**T.B.D.**	**Current**
Newmarket	Sewall well and pumping station	Gravel packed	1985
Raymond	**New Well and pumping station rehabilitation**	**Gravel packed**	**2002**
Sunapee	Raw water pumping station upgrade	-	1998
Tilton-Northfield Aquaduct Co.	**Wells and pumping station**	**2 gravel packed wells**	**1998**
Massachusetts			
Acton Water District	**Marshall wellfield and pumping station**	**15 - 2 1/2" wells**	**1987**
Acton Water District	Kennedy well and treatment facility	4 - 18" x 12" gravel packed	1991
Acton Water District	**Conant No. 2 well and pumping station**	**5 - 18" x 12" gravel packed**	**1999**
Acton Water District	Assabet No. 2 replacement well	18" x 12" gravel packed	2000
Acton Water District	**Scribner well renovation**	**4 - 16" x 10" gravel packed**	**2001**
Acton Water District	Clapp well replacement	2 - 16" x 10" gravel packed	2003
Barnstable Water Company	**Straightway well pumping station**	**Existing well**	**1999**
Barnstable Water Company	Well pumping station corrosion control	Existing well	1997
Bellingham	**Well No. 12**	**36" x 24" gravel packed**	**1997**
Boxborough	Blanchard School well	8" rock well	2002
Bridgewater	**Carvers Pond No. 7 pumping station**	**48" x 24" gravel packed**	**1990**
Bridgewater	Wells No. 8 and 9 pumping station	2 - 18" x 12" gravel packed	1997
Chelmsford Water District	**Smith Street well No. 2A**	**18" x 12" gravel packed**	**2002**
Grafton Water District	East Street No. 3 replacement	Existing gravel packed	1989
Grafton Water District	**Follette Street well and pumping station**	**48" x 24" gravel packed**	**1993**
Groton	Whitney Pond well and pumping station	48" x 24" gravel packed	1987
Groveland	**Well No. 4**	**18" x 12" gravel packed**	**1999**
Lunenburg	Hickory Hills well and pumping station	24" x 18" gravel packed	1996
Mashpee Water District	**Turner road well and pumping station**	**16" x 12" gravel packed**	**1999**
Mashpee Water District	Mashpee Village well and pumping station	24" x 18" gravel packed	2002
Maynard	**Rockland Avenue wells**	**3 - 8" rock**	**2000**
Maynard	Well No. 1 replacement	18" x 12" gravel packed	1995
North Raynham Water District	**King Phillip well pumping station**	**2 - 18" x 12" gravel packed**	**1998**
North Raynham Water District	Wellfield renovations	Existing wellfield	Current
North Sagamore Water District	**Church Lane well and pumping station**	**24" x 16" gravel packed**	**2000**
Massachusetts (continued)			

Dufresne-Henry

Client	Project	No. of Wells, Size and Type	Completion
Norfolk	Spruce Road well and pumping station	48" x 24" gravel packed	1990
Norfolk	Well No. 6 and pumping station	36" x 18" gravel packed	1996
Norwell	Well No. 5 pumping station corrosion control	Existing well	1997
Plainville	Lake Mirimichi wellfield and pumping station	3 - 18" x 12" gravel packed	Current
Plymouth	Savery Pond well and pumping station	24" x 16" gravel packed	2002
Raynham Center Water District	Gushee Pond well and treatment facility	48" x 24" gravel packed	1991
Raynham Center Water District	Johnson wellfield and pumping station renovation	2 1/2" wellfield	1991
Raynham Center Water District	Lake Nip replacement wells (existing well)	3 - 18" x 12" gravel packed	1989
Raynham Center Water District	Gushee Pond Well No. 2	36" x 18" gravel packed	2000
Sterling	West Sterling wells and pumping station	36" x 18" gravel packed	1993
Templeton	Sawyer Street well and pumping station	48" x 24" gravel packed	1987
Turners Falls Fire District	Tolan Farm well	36" x 18" gravel packed	1992
Wayland	Baldwin Pond well No. 3 pumping station	Existing well	1998
Wayland	Chamberlain well and pumping station	48" x 24" gravel packed	1991
West Bridgewater	Cyr Street wellfield	3 - 24" wells	1990
West Bridgewater	Manley Street replacement well	18" x 12" gravel packed	2003
Westford	Howard Road wellfield and pumping station	5 - 8" wells	1987
Westford	Cote well and pumping station	48" x 24" gravel packed	1990
Westford	Fletcher well and pumping station	48" x 24" gravel packed	1998
Wilmington	Chestnut Street well	36" x 24" gravel packed	1991
Vermont			
Brattleboro	Upgrade 2 pump stations including SCADA	500 gpm	2002
Cambridge (village)	Bartlett Hill well	36" x 24" gravel packed	1982
Coventry (town)	Black River well	Gravel packed	1983
Danville Fire District #1	Bedrock well and pump station	300 gpm	1997
Deep Rock Fire District #1	Hydropneumatic booster pump station	50 gpm	2004
Hartford	New well & p.station, rehab exist.well & p.station	1,000 gpm, 1,000 gpm	Current
Hyde Park Fire District #1	Gravel well, hydropneumatic pump station	120 gpm gravel	1990
Jericho-Underhill W.D.	Browns River well	12" x 18" gravel packed	1988
Montpelier (city)	Terrace Street booster pump station	800 gpm	1990
Montpelier (city)	Towne Hill booster pump station	400 gpm	1996
Newport (city)	South Bay well	36" x 24" gravel packed	1982
Northfield	Gravel well, pump station, two pump stations	1,000 gpm, 750 gpm	2001
Royalton Fire District # 1	Riverbed intake and pump station	400 gpm submersible	2003
Waterbury	Five bedrock wells and two pump stations upgrades	Range of 150 to 700 gpm	1992
Rhode Island			
Harrisville Fire District	Eccleston wells (3) and pumping stations	16" x 10" gravel packed	2001
Harrisville Fire District	Well No. 1 and pumping station	24" x 18" gravel packed	2003
Waverly	Groundwater source development	T.B.D.	Current
Maine			
Dresden Mills	New water system	2 - 8" bedrock	1995
Oquossoc Standard W.D.	New water system	2 - 8" bedrock	2001

Water Distribution Projects

New Hampshire		
Aquarion Water Co.	River crossing: design and construction services	1997
Aquarion Water Co.	U.S. Route 1 water main	2001
Aquarion Water Co.	Highland Avenue water main	2001
Aquarion Water Co.	Drakeside Road water main	2001
Aquarion Water Co.	Brown Avenue Extension	2003
Aquarion Water Co.	Little River Road area	2003
Ashland	Mill Street water main	1996
Bristol	Water main/NH Rte. 104 bridge crossing: design and construction observation	1986
Bristol	Water main and Rte 3A bridge crossing design	
Charlestown	1.0 MG storage tank/8,700 ft. water main	1993
Claremont	Wilder Street water main	1989
Colebrook	EDA Industrial Park water main	2001
Concord	Hopkinton Road water main	1991
Durham	Lee Well transmission main	1992
Durham	Beech Hill water main	1992
Durham	Lamprey River transmission main	2002
Epping	Water main, pump and controls	1990
Hancock	Mill Street water main	1998
Hanover	Water supply storage and distribution improvements	1998
Hillsborough	Loon Pond transmission main	1996
Hinsdale	Monument Road water main analysis	1994
Hooksett Village W.P.	Water main	1985
Hooksett Village W.P.	Rosedale Street water main	1990
Hooksett Village W.P.	North Main Street water main	1991
Hooksett Village W.P.	Dundee/Merrimack Streets water main	1992
Hooksett Village W.P.	Oak Street water main	1993
Jaffrey	Water main, booster pump station, improvements to groundwater supplies	1994
Jaffrey	Turnpike Road/Poole Reservoir water main	1996
Jaffrey	Main Street/Highland Avenue water main	1996
Milford	Water main	1990
Milford	Elm Street water main	1991
Milford	Whitten Road/Mason Road water main	1995

New Hampshire (continued)

Client	Project	Completion
Milton	New groundwater supply	Ongoing
New London-Springfield W.P.	Groundwater supply, water main, storage tank	1992
New London-Springfield W.P.	Pine Hill loop water main: *design*	1997
Newmarket	Water main and NH Rte. 152 bridge crossing: *design*	1994
Newport	Cheney Street water main: *conceptual design*	2002
Sunapee	Georges Mills groundwater, tank and main: *design and constr. obs.*	1997
Sunapee	Raw water pump station and transmission upgrade	1998
Tilton-Northfield Aqueduct Co.	Groundwater syupply and water main: *design and constr. observation*	1998
University System of NH	McDaniels Drive water main: *design*	2003
Massachusetts		
Acton Water District	Great Road - 3500 ft. of 12" water main	1998
Acton Water District	School Street - 4200 ft. of 12" transmission main	2000
Ashburnham	Lake, East Rindge, lake Shore Streets? - 16,800 ft. of 12" and 8" water mains	2000
Adams	Enterprise Street - 1500 ft. of 8" water main	2002
Bellingham	Well No. 12 - 3500 ft. of 8" water main	1996
Bernardston	Bridge crossing - 425 ft. of 8" water main	2000
Chelmsford Water District	Locke Road - 1200 ft. of 8" water main	2000
Chelmsford Water District	Boston Road - 4000 ft. of 12" and 8" water main	2000
Chelmsford Water District	10,000 ft of 12" water main	2004
Clinton	Orange and Benefit Streets - 2200 ft. of 8" water main	1996
Clinton	2500 ft. of 8" water main for 110 service changeovers	1999
Cummington	1500 ft. of 8" water main, services and meters	2000
Easthampton	7150 ft. of 12" water main	1999
Easthampton	5640 ft. of 16" water main	1990
Fitchburg	Harrison Avenue - 2100 ft. of 8" water main	1998
Fitchburg	Mechanic and Caldwell Streets - clean and line 16" water main	2000
Fitchburg	Hazel Street - 3000 ft. of 8" water main	2000
Franklin Co. RHRD	Bernardston TP - 2400 ft. of 8" water main	1998
Grafton Water District	Institute Road - 5300 ft. of 12" water main	2003
Grafton Water District	Westboro Road - 4900 ft. clean and line 12" water main	2003
Hadley	7400 ft. of 16" and 12" water main	1998
Littleton	Matawankee area - 12,000 ft. of 8" and 6" water main	1998
Ludlow	Sportsmans Road - 3300 ft. of 16" and 12" water main	2002
Ludlow	East Street - 750 ft. of 16" and 8" water main	Current
Maynard	Rockland Avenue - 2500 ft. of 12" water main	2000
Maynard	Tremont Street - 3300 ft. of 8" water main	2003
Maynard	Great Road (MA Rte. 117) - 2500 ft. of 12" water main	1998
Millers Falls	South Prospect ? - 2700 ft. of 12", 10" and 8" water main	2002
Norfolk	Union and King Streets - 7400 ft. of 12" water main	1998
Massachusetts (continued)		
Northfield Water District	4400 ft. of 12" water main	1998

Client	Project	Completion
Northfield	3500 ft. of 12" water main	1997
North Sagamore Water Dist.	Sagamore and Robinson areas - 3000 ft. of 8" and 6" water mains	2002
Norton	Barrows Street - 9800 ft. of water main	2000
Norton	King Philip and Plain Streets - 4500 ft. of 12" and 8" water main	1999
Norton	Freeman Street - 4000 ft. of 12" and 8" water main	2002
Orange	Randall Pond Indus. Pk. - 3100 ft. of 12" water main	1999
Orange	Bacon, Beacon and East Howe Streets - 2285 ft. of 12", 8" and 6" water main	1999
Orange	Grove Street - 800 ft. of 12", 8" and 6" water main	2002
Orange	Mechanic, Howe, Summer and Winter Streets - 1725 ft. of 8" water main	2003
Plymouth	Savery Pond - 3500 ft. of 12" water main	2002
Raynham	Locust and Dean Streets - 5600 ft. of 8" water main	1997
Raynham	South and Leonard Streets - 4500 ft. of 12" and 8" water main:	1998
Raynham	Church and Hill Streets - 9000 ft. of 12" and 8" water main	1998
Raynham	Leonard Street - 2700 ft. of 8" water main	2000
Raynham	Church and Judson Streets - 12,600 ft. of 12" and 8" water main:	2001
Shelburne	Maple Street Ph 1&2 - 2400 ft. of 8" water main	2003
Shirley Water District	Hazen and Walker Streets - 5300 ft. of 12" and 8" water main:	1999
Shirley Water District	MA Rte. 2A - 3100 ft. of 12" water main	2000
Turners Falls Fire District	3500 ft. of 12" water main	1994
Turners Falls Fire District	12" water main bridge crossing	1998
Turners Falls Fire District	Goddard, Grove and Hillside Streets - 1575 ft. of 8" water main:	1999
Turners Falls Fire District	Crocker Avenue - 8520 ft. of 12" and 8" water main	Current
Tyngsborough Water District	Notre Dame Academy - 4500 ft. of 16" and 12" water main:	1997
Tyngsborough Water District	Flint Pond - 10,000 ft. of 16", 12" and 8" water main	1998
Wayland	Glezen Lane - 6000 ft. of 12" water main	1997
Westford	28,500 ft. of 16", 12" and 8" water main	2002
Wilbraham	16,000 ft. of water main	1991
Vermont		
Barre City	North Main Street as part of water system improvements	2002
Barre City	1.0 MG tank and water main	2002
Central VT Medical Center	Pump station and water main: *design and construction observation*	2002
Danville Fire District # 1	12,000 ft of 12" water main	1996
Danville Fire District # 1	Water system improvements	1997
Duxbury/Moretown Fire Dist. 1	11,000 ft of 8" water main	1997
Deep Rock Fire District # 8	Water system improvements	2002
Derby Center (village)	4,000 ft. of 12" and 8" water main	1995
Derby Center (village)	Clyde River water main	2000
Hardwick	Water main	2000
Vermont (continued)		
Manchester	West Road water main	1998
Milton	1,500 ft. of 8" distribution (high service)	1995

Client	Project	Completion
Newport (city)	5,130 ft. water main	1992
Northfield	Water system improvements	2001
Montgomery	12,900 ft. of 8", 6" and 4" water main	1998
Montgomery	Water main design as part of water system improvements	2001
Montpelier	5,000 ft of 8" water main	1989
Montpelier	11,000 ft of 16" water main	1990
Montpelier	3,600 ft of 16" water main	1991
Montpelier	3,000 ft of 24" water main	1992
Montpelier	3,000 ft of 16" water main	1994
Montpelier	1,500 ft of 8" water main	1996
Montpelier	1,500 ft of 8"; 5,000 ft 12" water main	1998
Montpelier	2,000 ft of 8" water main	1999
Montpelier	2,500 ft of 24" water main	1999
Montpelier	3,500 ft of 12" water main	2000
Northfield (village)	3,700 ft of 12" water main	2002
Richmond	1,100 ft. of 12" water main	2002
Royalton	400 ft of 12" as part of water system improvements	2002
Springfield	Mill Road water main	2000
Stowe	Water main extension	2002
Waterbury	5,000 ft of 8" water main	1991
Waterbury	10,500 ft of 12" water main	1991
Waterbury	20,000 ft of 12" water main	1992
Waterbury	15,000 ft of 12" water main	1993
Waterbury	Transmission and distribution systems	1997
Waterbury	5,000 ft of 12" & 8" water main	2002
Waterbury	2,500 ft of 8" water main	2003
Rhode Island		
Harrisville Fire District	Clear River Drive - 7500 ft. of 12" water main	2003
Harrisville Fire District	Steere Farm Pond - 4000 ft. of 12" water main	1998
Maine		
Dresden Mills	3200 ft. of 6" water main	1995
Oquossoc Standard Water Dist.	4500 ft. of 8" - 3" water main	2002

Appendix C

VEOLIA Water

APPENDIX C
Watershed Plan & Approach in Indianapolis

As highlighted throughout our Proposal, Veolia Water North America Operating Services, LLC entered into a long term agreement with the City of Indianapolis, Indiana, in 2002 to operate and mange the City's water treatment, distribution and supply system. This project is managed through our Water Indianapolis LLC (VWI) subsidiary.

Under this contract, VWI provides watershed management for the City of Indianapolis Department of Waterworks. The Indianapolis watershed management plan objectives are:

- **Water Consumption Control** – Critical to the operation of the Indianapolis Waterworks is the control of discharges from the City's three reservoirs. During peak flows and times of low flow from the White River (the Waterworks' main source of supply), Veolia Water controls discharges from the reservoirs to ensure adequate supply of source water for the Waterworks' four main surface water plants.
- **Source Water Quality Improvements**– Veolia Water has under taken a partnership with Indianapolis University, Purdue University, Indianapolis' (IUPUI) Center for Earth and Environmental Science to achieve source water quality research and watershed management best practices.
- **Public Education and Awareness Training** – Veolia Water is committed to developing a watershed education plan for children and families that includes realistic objectives and strategies directed toward increasing knowledge about watershed resources and watershed management practices.
- **Technical Advisory Group** – Veolia Water instituted a committee made up of professionals from the water industry, environmental groups, state regulatory agencies, local universities, Veolia Water, and other groups and agencies. The purpose of this Technical Advisory Group (TAG) is to provide research and analysis of current initiatives undertaken by the City and Veolia Water and to make recommendations for future initiatives to be considered. This group does not set or make policy; functions to either validate existing policies and procedures or to make recommendations for improvements and potential changes.

VWI, on behalf of the Department of Waterworks, controls the discharges from two water supply reservoirs (Geist Reservoir and Morse Reservoir) and withdraws water from a third (Eagle Creek). Eagle Creek Reservoir is operated by the City's Department of Public Works, and its primary purpose is for flood control and recreation. Geist and Morse reservoirs were originally constructed by the former Indianapolis Water Company for the primary purpose of serving as a source of supply for drinking water.

Reservoir Characteristics

Geist Reservoir

Geist Reservoir is located on Fall Creek in northeast Marion and southeastern Hamilton Counties. The dam on Fall Creek was constructed in 1941-43, and the reservoir was filled in 1943. Geist Reservoir has a drainage area of approximately 215 square miles and a storage volume of 19,280 acre-feet (6.29 billion gallons) (USGS, 1996).

Morse Reservoir

Morse Reservoir is located on Cicero Creek, north of the City of Noblesville in Hamilton County. The dam on Cicero Creek was constructed in 1955, and the reservoir was filled in early 1957. Morse Reservoir has a drainage area of approximately 214 square miles and a storage volume of 22,820 acre-feet (7.44 billion gallons) (USGS, 1996).

Eagle Creek Reservoir

Eagle Creek Reservoir is located on Eagle Creek in northwestern Marion County. The reservoir is formed by an earthen dam and was placed into operation in late 1969. The reservoir is owned by the City of Indianapolis and was constructed for flood control, low-flow maintenance and recreation. Eagle Creek Reservoir has a drainage area of 162 square miles and a storage volume of approximately 23,300 acre-feet (7.59 billion gallons).

Reservoir Operations – Water Consumption Control

Geist and Morse reservoirs are operated to supplement streamflow in Fall Creek and White River, respectively. Water is not pumped directly from either reservoir for water supply, as water discharges from both reservoirs through a spillway in the dam when reservoir pool levels exceed the spillway elevation. During low reservoir levels (e.g., pool levels are below the spillway elevation), water is discharged through an outlet pipe to supplement flow in the streams.

Direct releases from Geist Reservoir are based, in general, on the streamflow in Fall Creek to ensure adequate water is available at the Fall Creek Treatment Plant. Streamflow in Fall Creek is monitored daily at a stream gauging station located near Millersville. The rate of release from Geist Reservoir is based on the volume of water required to meet water system demands at the Fall Creek station. In addition, water levels at the Keystone low-head dam (intake to the Fall Creek plant) are also monitored daily to maintain sufficient flow over the dam to sustain streamflow in Fall Creek after water supply withdrawals.

At Morse Reservoir, the release rate is determined by the streamflow in White River. Reservoir releases are into Cicero Creek, which flows into White River just south of Noblesville. White River is the primary supply for two water treatment plants (White River and White River North). Streamflow is monitored daily in White River at several gauging stations, namely at Noblesville and Nora, as well as the water level at Broad Ripple Dam (the diversion into the central canal). When low streamflow is identified, releases from Morse are made to increase the available supply in White River for both treatment plants, as well as maintaining flow over the Broad Ripple dam to sustain streamflow in White River after water supply withdrawals.

Unlike Morse and Geist, water is withdrawn directly from Eagle Creek Reservoir to supply the T.W. Moses treatment plant. Water withdrawal rates are based on system demand, but are limited by a contractual agreement with the City of Indianapolis. Withdrawals from Eagle Creek Reservoir are limited to an annual average of 12.4 MGD, and a maximum monthly withdrawal rate of 19.84 MGD.

Source Water Improvements

Veolia Water has developed the Central Indiana Water Resources Partnership (CIWRP) between Veolia Water and IUPUI. Veolia Water's 2004 research program, conducted through this partnership, is summarized below.

Water Quality and Nutrient Cycling in Indianapolis' Drinking Water Reservoirs and Their Watersheds

The 2004 Water Quality and Nutrient Cycling research follows the 2003 comprehensive monitoring study, Water Quality and Nutrient Cycling in Three Central Indiana Watersheds and Their Reservoirs: Eagle Creek/Eagle Creek Reservoir, Fall Creek/Geist Reservoir, and Cicero Creek/Morse Reservoir. The project will be implemented in March 2004 and consists of five components: (1) Hypolimnetic Anoxia Study; (2) Phytoplankton Community Structure Study; (3) Nutrient Mass Balance Study; (4) Effects of Watershed Residential Development on Stream Loading and Water Quality Study; and (5) Watershed Input Tracking of Organic Matter and Nutrients Study. In addition to these five studies, the program will continue to monitor copper loading to reservoir sediments.

One long-range goal of the research objectives of CIWRP is to characterize, model, and predict the major impacts on water resource quality in central Indiana. The first phase of our efforts have focused on bulk characterization of the geochemistry, microbiology, and sedimentology of the three principle reservoirs (with emphasis on Eagle Creek Reservoir), on the characterization of watershed loading and the hydrologic and sediment dynamics of watershed inputs to those reservoirs, and on the modeling of land-use and land-use change to develop a framework for targeted watershed-scale analysis of important factors (e.g., nutrients, carbon, sediment) that may have future impacts on water quality in central Indiana.

This first phase has allowed us to develop a research infrastructure that will propel us toward significantly more advanced and quantified studies of water quality factors in this region. It has also produced several key findings:

- The sediments in the reservoir bottoms are highly enriched in phosphorus and organic carbon, a condition that might contribute to eutrophication and water quality degradation.
- Relatively consistent and predictable shifts in ecosystems within Eagle Creek Reservoir might be related to cyclic variations in nutrient conditions within the reservoir.
- A significant additional load of bioavailable phosphorus is entering the reservoirs via runoff.
- Land use will continue to evolve over the next 20 years, with the biggest impact being the expansion of suburban development in the region.

These findings led us to a refined set of questions that we began addressing with research efforts in 2004:

- What role does the benthic reflux of phosphorus from reservoir bottoms play on ecosystem dynamics and water quality? Does carbon and nitrogen cycling within the reservoir also contribute? Is this flux a trigger for algal blooms?

- How does the development of stratification in the reservoirs interact with phosphorus, carbon, nitrogen, and silica cycling to impact ecosystem dynamics within the reservoirs?
- What is the source of the bulk of additional nutrients and carbon and how does it impact the reservoirs? In particular, can we quantify the nutrient and carbon release rates (in dissolved and particulate forms) from sub-watersheds and characterize the role that land-use change has on these release rates?
- With additional sub-watershed scale characterization of nutrient and carbon release, can we begin to predict future trends in input to these reservoirs and characterize the net impact that these changes might have on ecosystem status within the reservoirs?

We designed research projects to address these questions and to continue with efforts to monitor the watersheds as defined under the general research plan of CIWRP and the goals and objectives of Veolia Water and the City of Indianapolis.

Public Education and Awareness Training

Veolia Water's watershed and water quality education and awareness program in Indianapolis has five main goals:

- Develop a watershed education plan for children and families that includes realistic objectives and strategies directed toward increasing knowledge about watershed resources and watershed management practices.
  - Develop innovative programs that help citizens understand the need to protect and preserve aquatic and riparian habitat associated with streams and wetlands.
  - Provide specific opportunities for children to become more aware of the practices that have an effect on water quality.
- Promote the conservation of Indianapolis' high quality, affordable drinking water for present and future generations.
  - Develop educational strategies/programs to reduce water consumption by 15% by 2010.
  - Promote water conservation through collaborations with like-minded organizations.
  - Promote water conservation through targeted public service messages.
- Provide a range of programming that raises awareness of land use issues and personal behaviors related to water quality.
  - Develop partnerships and collaborations.
  - Develop a variety of opportunities for building understanding of the origin, flow, distribution and output of the water that is managed by VWI.
  - Utilize the Indianapolis Water Web site to further understand water quality, the watershed and the water environment.
- Continue working with schools throughout the Indianapolis water service territory to introduce and integrate the Water Box as a prime water educational tool for use in 4th, 5th, and 6th grades.
  - Work with principals, directors or education and curriculum coordinators of targeted schools to train appropriate teachers in the use of the Water Box.

  - Provide at least one quarterly evening teacher workshop at Indianapolis Water.
  - Continue to use the Indianapolis Water Web site to convey messages about the Water Box.
- Promote an understanding of the relationship between the quality of the water in our Central Indiana watershed and the quality of water as it travels to southern bodies of water and to the overall health of habitat and environment, especially in Central Indiana.
  - Develop strategies to foster public involvement in storm water pollution prevention.
  - Promote existing and create new wetlands for multiple use.

Technical Advisory Group

The following is a set of minutes from a TAG meeting, which outlines the members of this group and the type of work that they perform.

Technical Advisory Group (TAG) – Meeting

Notes from Indianapolis Water Algal Control Work Group Meeting at Veolia Water Indianapolis Conference Room
December 16, 2004
Bill Beranek

January 9, 2005

Participants:
Bill Beranek, Indiana Environmental Institute, facilitator
Christine Arnold, Indiana Department of Environmental Management
Lisa Barnese-Walz, US Army Corps of Engineers, Louisville District
Tom Flatt, Indiana Department of Natural Resources
Jane Frankenburger, Purdue University
Jill Hoffmann, Parsons
Bill Jones, Indiana University
Carole Lembi, Purdue University
Mike Littlejohn, Speedway Water Utility
Martha Clark Mettler, IDEM - Watershed Planning
Jeff Miller, Earth Day Indiana
John Pankhurst, Eagle Creek Parks Foundation
Lani Pascual, IUPUI School of Geology, CEES; Univ. Michigan
Gary Powdrill, Retired Ford
Bowden Quinn, Sierra Club
Glenn Pratt, Environmental Consultant
Dick Van Frank, IKE and Audubon Society
Dan Moran, Veolia Water Indianapolis
Dr. Chandra Mysore, Veolia Water North America
Jean-Michel Seillier, Veolia Water Indianapolis
Dale Pershing, Veolia Water Indianapolis

Observers:
LuAnn Baker, Veolia Water Indianapolis
Karol Bartlett, Experience Science

Jhani Laupus, Veolia Water Indianapolis
David Gadis, Veolia Water Indianapolis

Meeting began at 1:10 p.m.

LuAnn Baker was introduced as a new consultant to Veolia Water who will assist with the watershed nutrient reduction project. Jean-Michel distributed copies of the Water Conservation Plan and invited those TAG members who did not receive a copy and who wish one to request it of him.

This work group meeting focused on the scientific information associated with the phenomenon of chemicals produced by certain blue-green algae (cyanobacteria) under certain conditions that pose a toxic effect on animals. We call these "algal toxins."

Carole Lembi continued and expanded her presentation from two months ago:

Cyanobacteria are of greater concern for nuisance and toxicity than freshwater algae. They tend to be successful in freshwater systems because they tend not to be consumed by zooplankton (presumably due to toxicity or noxiousness of chemicals produced). Many have gas vacuoles allowing them to live at the upper layers of the water body, shading the photosynthetic organisms competing for sun and nutrients and many excrete chemicals that are toxic to algae.

Historically, the three cyanobacteria of concern in Central Indiana have been Anabaena, Aphanizomenon and Microcystis. More recently, Pseudanabaena (Morse, 1989; Eagle Creek 2000, 2001) and Cylindrospermopsis (Eagle Creek 2001, 2004) have been found. As yet, the appearance seems uncorrelated with identifiable changes in parameters.

It is clear that reducing the concentration of phosphates low enough would inhibit growth of blue-greens. Manipulating the growth conditions to favor algal competitors could inhibit blue-greens and, for the short-term, direct control can be used to stop a bloom.

In general, water bodies are characterized by the amount of biological material and potential nutrients present. Low biological material and nutrient concentration is called oligotrophic, medium is mesotrophic and high is eutrophic. Water bodies being managed for public water supplies are better with lower biological content and nutrient concentrations than the levels that characterize eutrophic or mesotrophic. Eagle Creek Reservoir was characterized by Tedseco as eutrophic in August 2004, with an average concentration of 900 ug/L total nitrogen and 94 ug/L total phosphorous present.

There are four general ways to manage bacteria and algal growth for the short term: 1) harvesting; 2) biomanipulation; 3) biological controls; and 4) chemical pesticides.

Harvesting means to pump the water from the affected area, filter off the algae and bacteria and return it. The cost of energy for the pumping and the time required makes this infeasible for all but the smallest water bodies.

Biomanipulation for algae control means to adjust the balance of aquatic species present. In theory, if the majority of fish present were carnivorous instead of species that feed on zooplankton, then the concentration of zooplankton in the water body would thrive, out-competing the phytoplankton (such as cyanobacteria). In practice, that has been achieved by killing all of the fish with rotenone and replacing them with carnivorous fish only. Unfortunately, zooplankton do not tend to consume blue-greens. Moreover, excess

nutrients (phosphate for blue-greens; phosphate and nitrate/ammonia for algae) tend to be a more powerful force on aquatic system phytoplankton growth than the effect of carnivorous fish. In Midwest lakes, excess nutrients ensure that phytoplankton dominate the aquatic systems regardless of the amount of carnivorous fish.

The only *biological controls* for cyanobacteria and algae (control meaning a large organism eats the cyanobacteria and algae at significant rates) that themselves can be controlled are tilapia fish, but tilapia require warm water year round. Invasive mollusks, such as zebra mussels, have shown to be effective consumers of certain types of bacteria and algae in the Midwest waters, but they cause a seriously unbalanced aquatic community. Experiments are being conducted with a bacterium first isolated in Louisiana that evidently exudes a compound that causes the cell wall of the blue-greens to lyse (and only that type of cell wall). Since the blue-green bacterial cell wall is different than algal cell walls, this would allow "good algae" to thrive. Good algae are resistant to the toxic compounds that the blue-greens excrete. In laboratory conditions, it has shown effectiveness in reducing the concentration of blue-greens. This is some years from development and approval by USEPA for intentional use as a commercial biological control agent.

Chemical pesticides targeted at bacteria and algae ("algaecides") are effective. However, great caution should be used in their application. The application is always limited to portions of a reservoir. Because they treat the symptom and not the cause of the unwanted phytoplankton, people can use it and ignore the cause. Traditionally, the divalent form of oxidized copper has been widely used with great success. Copper sulfate (bluestone) is an inexpensive treatment. The salt is applied directly into the water where it then dissolves, or it is dissolved in water and the copper water solution is applied. Either way, the solubility of the copper in the water body depends directly on the ionic strength of the water and the concentration of other chemicals that could combine with the copper (e.g., $CuSO_4$ would be less soluble in water high in carbonates, such as in Indiana hard water). With the inorganic and organic matter present in the water body, the copper gradually combines with other constituents and particles to precipitate to the sediments. The chelator is an alternative class of compounds to use to administer the copper instead of the sulfate salt. When these dissolve into solution, each chelator remains bonded to each copper ion in a manner that the combination resists the precipitating effects of free copper with the other constituents. This copper, as a complex, stays in solution longer than the free copper dissociated from the sulfate version, still retaining the toxic effect on living organisms. Cutrine is copper with ethanolamine as the chelator. (Ethanolamine is a two-carbon chain with an alcohol group at one end and an amine at the other.)

While copper is toxic to the cyanobacteria/algae, what is the safety of copper compounds to people? The label is listed as "danger." The toxicity category is "high." The dose applied regularly to a white rat that would kill half of the rats is 470 mg/kg. The same toxic effect in a 154-pound human would require eating and absorbing 33 grams. Caffeine, nicotine and arsenic are much more toxic to humans. Copper is an essential nutrient in mammals and is included in mineral supplements for humans and animal feed. Carole noted that if a person drank a gallon of water a day of the maximum concentration of 0.25 ppm that a part of the reservoir is treated for, that would be less copper than in the usual daily mineral supplement pill.

In general, even when administered as Cutrine chelate, most of the copper is diffused or precipitated from the application area within four to seven days. Copper per se never goes away. Other than the trace amount that stays in solution, copper accumulates in the sediments. It does not bioaccumulate up the food chain.

The copper does tend to bind tightly to the chemical and biological constituents in the sediment. There are no state or federal government standards for what an "acceptable" concentration of copper in sediments might be. It depends on the aquatic situation, on the sediment matrix and on social factors.

Carole noted that the European Union established a value of 140 mg copper per kg of soil as guidance for maximum acceptable concentration of copper in agriculture soil. In California, after decades of intense aerial spraying of copper compounds in rice fields, the average sediment concentration of copper is now 70 mg/kg. That illustrates both the long-term it takes for accumulation and also the possibility of reasonably high levels being achieved.

Another disadvantage to copper treatment is that it kills zooplankton, leaving the fish temporarily with a reduced food supply. But cyanobacteria also are detrimental to zooplankton.

A more expensive alternative chemical pesticide to copper without the sediment contamination problem is sodium carbonate peroxyhydrate. It is marketed as GreenClean Granular Algaecide by a company called Bio-Safe Systems. When dissolved in water, the peroxyhydrate goes into solution as hydrogen peroxide with a strong oxidizing potential. The carbonate in solution will tend to increase the pH while forming a certain amount of bicarbonate. The hydrogen peroxide will oxidize the organic matter of the biological organisms (breaking carbon-carbon bonds by adding oxygen).

This pesticide is likely as indiscriminant in its actions against all plankton as chlorine (because the mechanism of attack is identical), but it is possible for different types of organisms to have different susceptibilities. This must be explored with the applicator before use. Bio-Safe Systems is trying to obtain federal permission to use on water after it is drawn from public water supply reservoirs. It has never been used on Eagle Creek-sized water bodies. In lab studies it appears that under appropriate circumstances a homogeneous concentration of 17 lbs per acre/ft would clear the water of Cylindrospermopsis.

(It is interesting to note in passing a November 23, 2004, news release about a University of Florida isolation of a bacterium that metabolizes free MIB in solution. That observation may or may not have any future practical application, but it could be an interesting finding, depending on the mode of action and conditions of the reaction.)

Carole reminded us that ultimately treatment of algae is a stop-gap measure. It is better to manage the watershed and reservoir to prevent nuisance levels of cyanobacteria and algae from growing. In St. Paul, Minnesota, in the past, nuisance cyanobacteria effects were controlled with copper sulfate in the reservoir and treatment in the drinking water treatment plant. Currently, the control is being accomplished 1) with inactivating phosphorous with iron chloride (probably at sewage treatment plants); 2) retention ponds at points of urban runoff (to trap phosphorous in pond sediments); and 3) aeration (to inactivate phosphorous in sediments of ponds and of reservoirs).

Bill Jones discussed the application of alum to lakes to inactivate phosphorous in sediments. He participated as a researcher in a 1998 project to apply alum to different parts of the bottom of Lake Shakamak. The impetus came from former lifeguards noting the serious deterioration of the quality of water over forty years due to high nutrient loading. The alum application did help reduce phosphorous concentration (and amount of cyanobacteria and algae) in the water column but it was not a long-term solution because 1) the initial dose was too low; and 2) the source of nutrients (e.g., septic systems and rural runoff) continued.

Jill Hoffmann reviewed the experience of the Indiana Blue-Green Algae Task Force and possible next steps. The Task Force was a group of people from IDNR (Fish and Wildlife, Entomology and PP, PIE, Lake and River Enhancement), IDEM (GW, BSS), Purdue (Animal Disease Diagnostic, Botany and Plant Health), Indiana State Department of Health, IU SPEA, USEPA, Board of Animal Health, Illinois EPA, Indianapolis Water Company, Indiana Lake Management Society, and other private professionals.

In late August, a Michigan researcher on vacation noted unusual phytoplankton in the water of Ball Lake in north eastern Indiana. She saw no zooplankton but high blue-green without visible filaments. She evaluated a water sample the next day in her laboratory, confirming the presence of Cylindrospermopsis with "counts off the charts". A Wright State Professor (Wayne Carmichael) later confirmed presence of the toxin. The Indiana State Department of Health and the local health department combined to respond to estimate the risk and to communicate it to the lake users with door-to-door notification. Fortunately, within days heavy rains washed away the high Cylindrospermopsis concentrations. No one ever reported symptoms of toxicity (e.g., dermatitis) from the Ball Lake incident (there was never a thorough attempt to discover such information and the tourist industry was not anxious to find such problems). Purdue Animal Health staff did not consider the concentrations of Cylindrospermopsis found in subsequent samples to be of concern to humans swimming in it or to animals that would drink it.

The Task Force was convened to assess the Ball Lake finding and to develop a coordinated emergency response procedure among agencies for the potential of similar findings elsewhere.

One observation was that the federal government had no standards for acceptable concentrations of various toxic blue-greens or of the toxins. (Now the toxins are on a list at USEPA to develop enough human toxicity information to create a maximum contaminant level for finished drinking water. That process will likely take more than 10 years at the best.) The World Health Organization has guidance for concentration of other blue-greens. Indiana based its immediate advisory extrapolating from these factors. The State of Florida has long experience with higher concentrations of Cylindrospermopsis in its waters and, in fact, it considers acceptable for swimming concentrations that were higher than what Indiana told its citizens might pose a concern.

Jill said that 80 alligator were confirmed dead in the summer of 2001, suspected to be from Cylindrospermopsis ingestion.

In 2003, the first human death confirmed from cyanobacteria was reported. Four teenage boys in Madison, Wisconsin, played one evening in a golf course pond green with algae. Three were sickened and the fourth died. Jill said that an algal toxin was isolated from the dead boy's liver in concentrations that was determined to have caused acute liver damage,

which resulted in the death. Dale agreed to find the scientific papers describing the toxin and precise circumstances.

Improvement to Indiana approach as a result of the Task Force deliberation:

1) There is greater expertise in-state to look for Cylindrospermopsis.

2) All findings of toxic blue-greens or algal toxins are to be reported to Bob Teclaw of the Indiana State Department of Health.

3) Permits for herbicide application to waters serving as drinking water supply sources from IDNR require an IDEM condition to check for Cylindrospermopsis to avoid inadvertently killing them in a manner that could release toxins into the water.

4) The IDNR Aquatic Nuisance Species Program has expanded its vigilance to address microorganisms.

5) There is a Frequently-Asked-Question section about Cylindrospermopsis on the IDNR web page.

6) Data from Army Corps of Engineers Indiana reservoir studies was reviewed.

The Task Force is no longer meeting as a group. Nobody in the state is assigned primary responsibility to watch for blue-greens. Nobody is coordinating this effort at the state agencies.

Left to do is to establish a solid research protocol to evaluate types of lake conditions that would have highest likelihood of receiving and supporting growth of the toxic blue-greens and then implementing that protocol in a systematic manner. Also needed is a single place for citizens to call capable and willing to provide answers to local concerns and to report concerns. The Indiana Lake Management Society is pursuing funding for a research effort.

Bill Jones has analyzed for Cylindrospermopsis -- 2002 and 2003 samples from a number of lakes taken for a different research purpose. The results are incomplete and cannot be told to public health officials yet. However, Bill said his tentative results showed "more than anticipated" positives for Cylindrospermopsis.

Lisa Barnese-Walz, U.S. Army Corps of Engineers, Louisville District, reported on the findings of the Corps on eight types of bacteria and algae in the eight Indiana reservoirs that the Corps runs. The Corps samples each reservoir four times each year from late spring to early fall. Cylindrospermopsis is analyzed in manner coordinated with the Michigan researcher who first discovered the blue-green in Ball Lake. In 2001, Cylindrospermopsis was found in the Monroe Reservoir. Unfortunately, while fall is when Cylindrospermopsis would be expected, the Corps does little sampling in the fall. In 2004, at Salamonie Reservoir, Anabaena and Microcystis were found in high concentrations in waters that were noticeably blue-green.

Dr. Chandra Mysore reviewed the human toxicity of blue-greens and the susceptibility of different cyanobacteria and their toxins to removal at the drinking water treatment plant. He said that about 50% of the known generaof cyanobacteria produce a toxin with animal toxicity (Microcystis, Anabaena, Oscillatoria, Nostoc, Hapalosiphon, Anabaenopsis, Nodularia, Lynbya, Schizothrix, and Cylindrospermopsis). Common toxicities include neurotoxicity

(nerve poison such as saxitoxin that is the paralytic shellfish poison and anatoxin), heptatoxicity (liver poison such as microcystin and Nodularins), general cytotoxicity (range of health problems such as gastroenteritis, kidney and liver damage; example is Cylindrospermopsin) and endotoxicity (gastrointestinal upsets and skin irritation; examples are the lipopolysacharides).

Table III.C-1, below, provides a listing of the common toxins and the different cyanobacteria genera that are known to produce them. Note that one genus may produce more than one type of toxin. It is not yet known whether that observation is the result of different strain of species in the genus producing different toxins or if all species are capable of producing all the toxins that the genus has been observed to produce.

Table III.C-1. Common Toxins

Toxin Category	Toxin groups	Primary target organ in mammals	Typical genera producing the listed toxin
Hepatotoxic cyclic eptides	Microcystins Nodularin	Liver Liver	Microcystis, Anabaena,Oscillatoria, Nostoc, Anabaenopsis Nodularia
Neurotoxic alkaloids	Anatoxins Saxitoxins	Nerve synapse Nerve axons	Anabaena, Aphanizomenon, Ocsillatoria Anabaena, Aphanizomenon, Lyngbya, Cylindrospermopsis
Cytotoxic alkaloids	Cylindrospermopsins	Liver, kidney, lymphoid tissue	Cylindrospermopsis, Aphanizomenon, Umezakia
Dermatotoxic alkaloids	Aplysiatoxins Lyngbyatoxin	Skin Skin, gastrointestinal tract	Lyngbya, Schizothrix, Oscillatoria Lyngbya
Irritant toxins	Lipopoly-saccharides	Any exposed tissue	All

In the United States, there are three cyanotoxins: microcystin, saxitoxin and Cylindrospermopsin. In 1931 there was a gastroenteritis outbreak from drinking Ohio River water. In 1979, people were hospitalized from drinking high concentrations of Cylindrospermopsis or the toxin in Queensland, Australia. In 1988, 88 deaths occurred from gastroenteritis by the consumption of "treated water" (degree of treatment is not clear) that contained high concentrations of Cylindrospermopsis in a reservoir in Brazil due to a flooded dam. In 1996, 50 deaths due to hepatitis occurred in Brazil due to Microcystis or microcystin contamination in finished water provided to dialysis patients.

Different strains and subpopulations within strains seem to produce toxins at different rates (differ by factors of two or three). The waxing and waning of the concentration of toxins during an apparently constant algal bloom could be due to the cycle of growth of the

different strains. Cyanobacteria produce toxins when in the active growth phase and when under stress. Blooms themselves wax and wane in as yet unpredictable ways. The reason for the toxin production is not certain.

Microcystin is a small peptide-type compound with 70 known chemical variants. The microcystin-LR variant is the one the toxicity is standardized to. This LR variant has a leucine and an arginine in key positions. The World Health Organization (WHO) guideline is 1 ug/L for this compound, the same WHO toxicity health level as for Cylindrospermopsin. Both are on the list for USEPA drinking water standard development pending solid toxicity data development. At low doses it causes gastro-intestinal upset, skin irritation and respiratory difficulty. It is lethal within one to two hours at high doses with liver and kidney failure. There is evidence it may be a very potent tumor promoter in long-term exposures.

Cylindrospermopsin is an alkaloid. Anatoxin is a ketone with a borneol-type carbon structure. Saxitoxin is a nine-member heterocyclic core with different functional substitutions for different compounds.

The LD50 in rats for microcystin LR is 0.05 mg/kg; Cylindrospermopsin 0.2; saxitoxin 0.003; anatoxin A 0.4.

The treatment plant removal strategy is generally 1) remove intact cells with adsoprtion or coagulation and then 2) destroy the toxin with oxidation by chlorine or ozone.

Adsorption with PAC or GAC (especially wood-based charcoal with 45-minute contact time) can also remove most mycrocystins and saxitoxins. Alum or iron chloride removes 95% of microcystin because most of the microcystin is bound to the Microcystis cyanobacterial cells that are removed. Lime is sometimes useful.

Ozone or ozone/biologically active filters are very effective against all the cyanobacteria toxins. Breakpoint chlorination similarly is very effective for all three toxins (need above pH 8 for saxitoxin).

Therefore, it is relatively straightforward to treat the raw water for algal toxins. The best strategy is to treat the cyanobacteria intact but, if the system is properly configured and operated, the toxin itself can be removed with great effectiveness in the basic treatment plant process.

The meeting ended, noting that the February meeting would be focused on the optimal protocols for the state and local governments and water utilities to use when in the future the presence of toxic cyanobacteria is detected.

The meeting adjourned at 4:00 p.m.

Appendix D

VEOLIA Water

Appendix D

Part One

Capital Program Management – Brochure

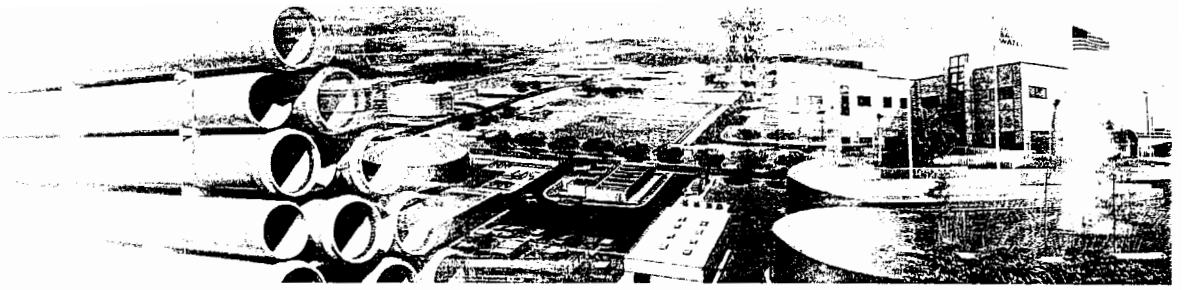
VEOLIA Water

Capital Program Management

Most of our customers know that Veolia Water North America is the market leader in operating and maintaining municipal and industrial water and wastewater treatment facilities and systems. Sometimes they're surprised to find out that we're also a market leader in the specialized design-build-operate and design-build model for constructing new water and wastewater treatment assets plants or expanding and upgrading existing assets.

Above: Moving dirt in Rialto, Calif.

VEOLIA
Water



Our Capital Management Program Delivers Results

We strongly believe that a DB or DBO process is the project delivery method that best meets the owner/customer's needs, aligns the interest of the service provider and simultaneously addresses complex project challenges. Typically, most of our customers want to achieve a high-quality project that is cost-effective to build, operate and maintain—and they want as well as delivered via an accelerated schedule. Our approach delivers this approach and our track record demonstrates success.

Veolia Water North America's Capital Program Management team (CPM) consists of highly qualified professionals who have engineering and construction experience as well as have an understanding of operations and maintenance issues. Our team also understands the impact each discipline has on the other. Our total project management scope includes the following services:

- Capital Improvement Planning
- Project Budgeting
- Pre-construction Activities such as scheduling and organizing
- Procurement Assistance
- General Contracting
- Project / Construction Management
- Project Cash Flow Analysis

CPM's role as a DBO manager is critical to the success of our capital improvement projects at facilities we operate. During the early stages of a capital improvement project, our CPM team focuses on the components that can deliver a high-quality, cost-effective project. We identify safe and qualified local contractors and select proven engineering partners.

Considerable time is spent to ensure these firms understand your project and participate as a team member and partner, not "just" a subcontractor. During design and construction, the CPM group pays particular attention to critical areas, including:

- Further process validation
- Evaluation of system alternatives
- Constructability issues/enhancements
- Value engineering
- Operation and maintenance efficiency
- Overall life cycle costs
- Assurance of a quality constructed project delivered on time

Regardless of project size, these items are critical in importance. Using a partnering approach to run project teams, CPM typically functions as the project leader and your main point of contact during the project. This highly coordinated approach results in increased speed of delivery, the elimination of "finger-pointing" and seamless execution of all project phases without misunderstandings commonly found among multiple project parties. Our objective is always to keep all team members working together—providing O&M input and support during the design-build phase, supporting the O&M staff during the startup and transition phases, and also providing other support resources to support the long-term viability of the project.

CPM also maximizes the advantages of a design-build project delivery approach by utilizing innovative methods to expedite project delivery and select the best technologies that will ensure your facility is reliable, durable and cost-effective to construct, operate and manage.

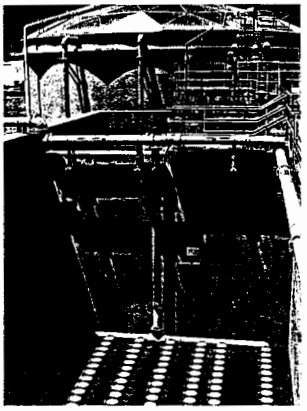
Your team in the West is led by Craig Watkins, vice president, CPM, for Veolia Water North America - West LLC. He brings more than 23 years of experience in the engineering and construction industry. He has significant experience performing design-build projects in the water and wastewater industry for both municipal and industrial clients.

Several recent successful projects for the CPM group include: Lathrop, Calif., Richmond, Calif., Atwater, Calif., and Cle Elum, Wash.

City of Lathrop, California

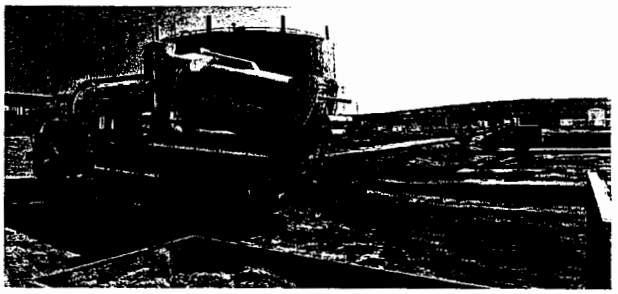
The Lathrop project is an excellent example of how a public-private partnership can provide a quality project at an affordable price in an expedited time frame. This project performance was recognized with the 2004 Small Plant of the Year Award (<5-million gallons per day category) from the Northern San Joaquin Section of the California Water Environment Association (CWEA).

In 2003, Veolia Water was contracted to provide DBO services to the city for the development of a new wastewater reclamation plant while keeping the city's existing facilities in operation during the design and construction of the new facilities.



Veolia Water provided fast-track design and construction services for a new 0.75-million gallons per day tertiary treatment plant. Our CPM group performed the project management for this project. This facility is designed to replace an existing plant and will, when fully expanded, meet California's Title 22 requirements for effluent reuse. The new plant has been designed for expansion, in incremental increases of 0.75-million gallons per day, up to 10-million gallons per day; the first expansion phase will add redundant solids handling equipment to ensure efficiency in managing plant biosolids. The new plant also features several state-of-the-art components: a MemJet™ immersed membrane bioreactor, Mectan® grit collector system and ZABOCS® biological odor control system.

Additionally, Veolia Water has completed preliminary designs to add sand filters to the existing plant. When the city authorizes implementation, these improvements, along with changes to the aeration system and possibly influent equalization, will bring the facility into full Title 22 reuse compliance. Additionally, Veolia Water assisted the city in developing a land application program for the beneficial use of biosolids, and we are developing O&M manuals to meet state regulatory agency requirements.



City of Richmond, California

Veolia Water recently concluded a multi-million dollar rehabilitation of the City of Richmond, California's wastewater treatment plant, upgrading systems plant-wide. Completed in just two years, this project focused on restoring environmental compliance and addressing historic odor problems.

The capital improvements program focused on upgrading, modernizing and automating existing systems at the plant. Capital improvements included a new automated bar screen; rehabilitated primary clarifiers, rebuilt digesters and new domes, and rebuilt and improved aerators using Envirex® systems; new computerized controls throughout the plant; a new disinfection system and equipment and controls; and a new chemical containment facility to enhance worker safety and environmental protection and improve facility appearance.

In a demonstration of its satisfaction with our work, in 2004, the city expanded our scope to include a similar effort to its 240-mile collection system-adding $20 million in capital to our O&M project scope. The scope of work includes a major rehabilitation of the city's collection systems and lift stations, as well as asset management of the systems when capital improvements are complete.

Cle Elum, Washington

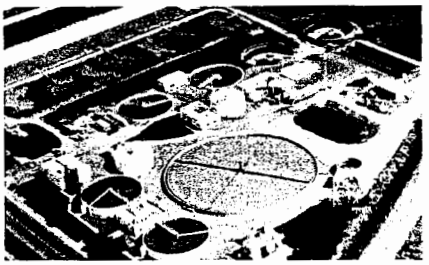
Veolia Water submitted a bid to design-build a new regional wastewater treatment plant for the cities of Cle Elum, South Cle Elum and Roslyn. Also, interim operations of the existing plant while construction took place. Because the existing plant was to be substantially modified while the new plant was under construction, the bid also included the provision CPM perform as the project manager.

A team including a local engineer, regional contractor and design support, as well as other project services from a central Veolia office, provided the owner(s) with a quality, on-time project. One of the first major tasks was to provide

an alternative design to reduce the capital budget by over $3 million. Through value engineering and a review of solids handling alternatives, Veolia was able to lower the cost which allowed the project and dependant development to proceed.

As the result of a subsequent bid, Veolia Water has now been selected to operate the plant for the next 10 years. A major factor in the award of the long-term bid was the relationship that Veolia Water, later led by CPM, was able to form with the city. City staff commented that we did exactly what we said we would do when we started the project. This indicated to them that we had a good plan, the core values to deliver and the quality staff to perform the work.

Atwater, California



CPM has been working closely our operations staff and the City of Atwater to assist in thirteen major maintenance projects at their wastewater treatment plant. CPM has partnered with Boyle Engineering, a local engineering firm, to support prioritizing/scope/development and to procure construction activities for these projects. It is anticipated that CPM will manage approximately $1 million in capital improvements for the 2005 fiscal year at the Atwater WWTP. All of this work is being performed in conjunction with the master planning of the plant from the average daily flow of 6 MGD to 10 MGD, to the production of Title 22 quality reuse water.

An example of CPM's capabilities is the fast and efficient execution of an emergency replacement at the plant. In February 2005, the original primary clarifier drive unit finally failed. The Atwater wastewater plant was then operating with one primary clarifier of which this drive unit could fail at anytime. Veolia Water developed a specification for the procurement of new primary clarifier drive units. In March 2005, Veolia Water and City of Atwater officials opened two sealed proposals from the proposing suppliers.

The CPM design/ build approach has identified a potential savings of over $20,000 if both clarifier drives are replaced now. As the client needs to replace the other drive this type of communication is very beneficial to the City and will help stretch their precious dollars to facilitate additional repairs.

Rialto, California

In May of 2003, the City of Rialto and VWNA entered into a contract to operate and maintain the City's Wastewater Reclamation Facility and Wastewater Collection System. This facility consists of five wastewater treatment plants that have been constructed over the past several decades on the same site. Two plants, numbers 1 and 2, are very old and have not been maintained to a standard considered adequate for continued operation. In order to meet the requirements of the city's regulatory discharge permits, it was necessary to continue to operate plants #1 and #2 until capital improvements could be made to the other plants that make up the Wastewater Reclamation Facility. This was not an efficient use of capital resources and also contributes to ineffective use of electrical and plant process resources. Plants #3 and #4 are the next oldest facilities. It will be very important for the long-term plan to keep these plants operational to a standard that will offer sufficient capacity and backup to the more modern Plant #5.

One of the initial projects performed was the design-build approach of a new liquid chlorine disinfection system. This $600,000 project was executed within schedule and budget. Due to the success of this project and developed trust, we developed a Capital Improvement Plan (CIP) for the assets under management. CPM identified and prioritized $5-$7 million in capital improvements.

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WATER PARTNERSHIP COUNCIL
MEMBER

VEOLIA
Water

Appendix D

Part Two

Customer Service at Indianapolis, Indiana

VEOLIA Water

2005-2006 CUSTOMER SERVICE PLAN

TABLE OF CONTENTS

Introduction

Billing and Meter Reading

Contact Center
(performance measures, communications, training, coaching, monitoring, reporting)

Collections and Remittance Processing
(performance measures, lobby closure, reporting)

Training

Customer Survey

ISO

Office and Clerical Union Contract
(strike contingency plan)

Relationship with Stakeholders
(IURC, OUCC, CAG, etc.)

Networking with Other Associations and Utilities

Conclusion

Company Confidential - Trade Secret and Proprietary Information – Veolia Water

Introduction

Veolia Water Indianapolis, LLC (VWI) shares the goals of the City of Indianapolis for a responsive Customer Service Plan. A Customer Service Plan makes an invaluable link between Indianapolis Water and the public. It is the "human" side of operations that can supersede all the technical expertise of an organization. A strategic Customer Service Plan is the first step to satisfied customers. When Customer Relations staff display professionalism, courtesy, competency and concern, customers simply feel better. Customers tend to share negative experiences rather quickly, and one bad impression from one single customer can easily be heard by scores of others.

The Customer Service Plan (CSP) addresses the Company's approach to customer relationship management. Per the Management Agreement contract, the CSP will be submitted to the Department annually.

The CSP states what the Company will provide, how and when the service will be provided, and underscores our commitment to retain loyal customers with quality service. The CSP establishes guidelines for employees and is in line with the Department's requirements. It spells out what customers can expect from the Company through established policies and procedures as well as identifying areas of opportunity for the next year.

The objective of the Customer Service Plan is to build customer satisfaction and loyalty, improve customer perception, increase speed of response, and ensure accurate information is obtained and properly used in order to protect the Department's investment. We see our strategic vision for the future of the Company accomplished through implementation of technologies that will streamline process flow and improve customer services while simultaneously improving the level of customer satisfaction.

The VWI Customer Relations department has the responsibility to meet each customer's needs for customer contact and revenue management. During the past year-and-a-half, many of the customer-related processes have been reviewed and continuously monitored to attain the incentive criteria and raise the level of service provided to the customers. There have been significant measurable improvements in the delivery of customer service

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since 2002, and VWI expects to continue this progress into the future. Reporting on the status of the customer relations incentives is submitted to DOW on a regular basis and, therefore, this CSP will not duplicate that effort.

Key customer service programs have been identified, and these serve as the basis for improvements in the quality of customer service delivery. Because they are the critical link in the process, employees are at the top of the program. VWI is committed to developing and retaining a talented and motivated workforce. These are the people who will provide service to customers on behalf of the Department of Waterworks. The customer and the DOW are served well when reactive contacts are reduced and replaced with a longer-term proactive plan. When VWI can anticipate the customer's needs and fulfill them the first time, then the customer will receive better service while having less direct contact with the utility.

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Billing and Meter Reading

Currently most meters are read every other month and billed monthly. As a result, there are six estimated meter readings for each meter per year. Any customer may send a written request to Veolia Water Indianapolis to obtain monthly readings for an additional charge. Meter reading exceptions for each bill cycle are reviewed by the billing quality assurance team to ensure accurate billings. The second step in the QA process involves a review of billings that fall outside normal parameters. This process allows any corrections to be made to the customer's bill prior to mailing. The last step is a review of a sample of actual bills to ensure accuracy prior to release to Union Federal for processing and mailing.

The billing quality assurance team is also responsible for maintaining contact with customers that consume large quantities of water and high risk customers such as health care facilities.

Billing Services is also responsible for reviewing and approving any changes made to the customer information billing system. These processes involve testing and review in several test regions prior to the move to the production database.

Projects: 2005-2006

The billing department will enhance existing procedures related to billing and customer satisfaction. We continue to monitor the performance of the Smart Suite billing system to ensure the timely and accurate production of billing statements. Improvements in documentation for standard procedures will allow the company to maintain its ISO certification.

- Continue to monitor current bill sampling procedures to ensure billing accuracy.
- Development of time study report to track the timeliness from meter reading export to final batch processes.
- Work with Health Departments outside of Marion County to identify schools, medical facilities and nursing homes to create an emergency contact database. This is addressed in the VWI Emergency Response Plan.

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- Utilization of the customer-level bill messages to notify customers of friendly water related tips.
- Develop structured relationship with high volume commercial and industrial customers to address their concerns and gather contact names and telephone numbers.
- Create a database of commercial and industrial customer contacts for quick reference in the event of a water emergency.

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Automated Meter Reading

The purpose of the creation of this working group is to propose an environment where Veolia Water Indianapolis, LLC and its major clients, the Indianapolis Department of Water (DOW) and the Indianapolis Department of Public Works (DPW), can study together the requirements and benefits of an Automatic Meter Reading (AMR) system for the City of Indianapolis water customers.

Veolia Water Indianapolis LLC (VWI) follows meter reading past practices of the Indianapolis Water Company. This means that only 2,700 of its customers (typically the largest industrial and commercial users) of the 312,000 water meters are read and billed monthly. The remaining meters are scheduled to be read and billed every other month, with intervening months billed on a calculated estimate of previous usage. With more than half of its water and sewer bills being based on estimates, VWI and DOW/DPW have created an environment which could imply a loss of confidence from the customers concerning the accuracy of their water bills.

An automatic meter reading (AMR) system would virtually eliminate all estimated bills; reduce the volume of customer calls, field visits, and the cost of customer service operations; reduce customer service transactions time; reduce opportunities for billing errors; support VWI's and DOW/DPW revenue protection efforts; and enable enhanced and more proactive customer service.

VWI evaluated several meter-reading technologies. Mobile radio is the most widely deployed. Fixed radio, which uses neighborhood data collectors to capture readings, provides greater customer service capabilities and is the fastest growing technology, but can be more expensive to operate.

The team should consider the benefits and costs of choosing a technology that could be compatible with the needs of other utilities in Indianapolis (Citizen's Gas, Vectren, Cinergy, etc), and has the potential to read some or all of its meters over existing networks, such as IPL's.

The AMR project team must ensure installation quality and data integrity, to minimize the burden on customer service staff.

Based on a detailed analysis of VWI's current operations, review of AMR technologies, visits to utilities using or desiring to use AMR, and financial analyses of alternative solutions, the project team should recommend to VWI and DOW's senior management the rationale for AMR, what benefits

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are expected to be achieved, at what costs, the optimum product to be used, as well as a detailed breakdown structure of the implementation project.

The team should be made of:

several key technical staff from VWI.
DOW.
DPW.
Other utilities.

The topics to be reviewed by the working group could be:

- Should DOW and VWI implement an AMR system (should include the whys)?
- What system is best for Indianapolis? The team should consider proposals for both mobile and fixed radio AMR, since the latter provides more capabilities and is expected to eclipse the former in the next few years. It should consider life-cycle costs.
- How best to pay for the system. Who will own it? (In addition to purchase, possible options include leasing or user fees to use other utility's equipment.) Who will receive which benefits? The team should recommend how to handle large meters on a case-by-case basis since many of these meters are expensive to replace and because large customers may have special data needs. This expense should be weighed against significant potential loss of revenue if the meter replacement is delayed.
- Time frame for deployment (risk of potential obsolescence during deployment vs. cash flow requirements vs. labor cost reductions vs. enhanced customer services).
- Team should establish a dedicated project management team by the time it is ready to evaluate proposals.
- Customer Relations process re-design to take full advantage of the new system.

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AMR Activities Completed in 2004-2005

- A VWI executive team consisting of David Gadis, Jackie Groth, Jean-Michel Seillier and Kathy Humphrey has been established.
- Milt Keys has been identified as project manager and other team members include: Debbie Foster, Paul Dicken, Bill Hulse, Debbie Willis and Jim Washburn.
- Several site visits were made to IPL to learn first hand about their experiences with implementation and ongoing operations.
- Worked with ViaStar to begin the cost analysis for AMR. Used their categories and developed a spreadsheet which included multiple scenarios.

Projects: 2005-2006

- Send several VWI AMR team members to the national AMR conference in September for the purpose of continuing to learn about AMR opportunities.
- Work with the DOW to continue to develop cost scenarios to determine financially and operationally feasible solutions.

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Contact Center

We will continue to improve our level of customer service excellence and quality assurance as our highest priority. We believe that by continuing to improve our employee skills, work environment, work ethics, training and communication, we will have loyal and satisfied employees, which will result in loyal and satisfied customers and clients. We will continue to meet and exceed our performance metrics as defined by the management contract. We will continue to work to enhance services provided, such as bilingual agents as the Hispanic population in the city continues to grow.

Projects: 2005-2006

Utilize IVR upfront messages as "emergency notifications, or current updates ", and seasonal tips to coincide with billing messages printed on customer bills, as a means of communication with our customers and clients.

Networking/benchmarking with other utilities and similar contact center structures for continued comparison and best practices.

Set up escalated customer complaint process with problem description, problem resolution and supervisor or agent that handled complaint on shared V drive. Tracking response times to escalated customer complaints helps identify problems and prevent future occurrences speedily.

Implement on-line SOP reference tool for customer relations for quick access to client/customer information.

Work with the Mayors Action Center; investigate setting up a direct phone line between the MAC center and Veolia Water Indianapolis customer contact to accommodate the transfer of customers to qualified agents.

Have on-going employee workshops to improve customer service skills.

Critical to an effective Customer Service Contact Center is a well-trained and cross-trained workforce. We will continue improvements for customer service excellence with:

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- Ongoing training and goal setting for employees.
- Improvement in call center environment and employee morale.
- Options for employee shift trades, flex-time, or makeup time.
- Open line of communication with agents & supervisors.
- Regular agent coaching & monitoring for feedback, employee growth and empowerment to take care of our customers.
- Daily performance reports for individual agents.
- Contact center agents & supervisors organized into teams for more structure.
- Create positive feelings among employees, instilling purpose, motivation, recognition & pride in our work.

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Collections and Remittance Processing

The collection of revenue and remittance processing is a critical function of a customer service organization. Our collection policies and practices meet the city's rules and all other governmental agencies' rules and regulations. We continue to grow our available payment options for customers, and with the closing of the lobby, have added enhancements to existing options and another alternative of a pay site.

We have extensive experience in developing and implementing effective collection processes, especially in the area of shut-off policies and procedures for nonpayment. We are planning to make the shut-off process more automated, while giving more personal attention to industrial and commercial customers in working with them to keep their balances current.

Much work has been done to refine collection processes and to review the receivable accounts to ensure a smoother process and the achievement of the collection rate incentive. This process will continue to ensure proper rollover of the receivables.

We are experienced in providing management reports, and it is our intent to continue to provide timely, accurate reporting of customer service performance in monthly, quarterly and annual management operating reports.

Projects: 2005 - 2006

- Meet the contract incentive of collection rate of 99.4% for 2005, and 99.5% for the remainder of the Management contract
- Review payment options for enhancements and improvements in order to offer convenient methods of paying the bill for our customers while still insuring timely postings of payments
- Continue with, minimally, semi-annual, meetings with lockbox provider to insure the process is working smoothly with all agents. Also include discussions of additional automation to the process.
- Provide management reports timely and accurately, including a monthly listing of revenue adjustments, and a report showing the method of payments used by customers.

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Training

It is the mission of the Training Program to ensure that Customer Relations employee is afforded the opportunity to develop existing skills and acquire new skills and knowledge in order to continually improve their overall competency and performance. Properly trained employees are not only essential to our goal of maintaining the most cost-efficient customer relations but training is an investment that pays dividends to our clients. New employees in the contact center are provided with 160 hours of training, which includes shadowing and supervised hands-on experience. New employees in the other areas are provided much of this same training, plus one-on-one training for specifics of the area.

Projects: 2005-2006

In order to ensure our employees receive the best training and the customers receive the best customer service possible, a new position will be created. The position will be for Supervisor of Training.

This training supervisor will have several seasonal refresher training sessions to include the following topics:

- ISO Training
- Cold Weather
- Irrigation meters
- Backflow
- Soft skill Training
- Water Quality

We will provide agents with daily tips and better ways to handle specific calls.

We will implement "intermittent" training sessions to allow all agents to be kept up to date on new and changing procedures.

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Customer Survey

VWI's current measurement of performance is based on feedback acquired from the DOW. VWI will implement a Client Satisfaction Survey that will be conducted annually to better measure the performance by VWI in regards to client relations and communications. The implementation of this tool will assist in improving the service provided and will provide a documented evaluation of the service provided to the client. VWI will continue to seek direction from the DOW on how to more effectively respond to its needs.

Projects: 2005-2006

- A new "customer satisfaction index" based on a model used for other water utilities nationwide, and on survey data we have collected for VWI on customer perceptions and satisfaction among residential drinking customers over the past 3 years.

The VW-CSI is a customer satisfaction index designed to:

- Measure overall satisfaction among residential customers as a whole.
- Allow for breakdowns into separate (sub)indexes for each of the two segments of residential customers (i.e. callers and non-callers).
- Generate separate scores on each of the six different factors that drive over all satisfaction and comprise the total satisfaction index.

The six factors are:

1) water quality and safety
2) customer service
3) information
4) value and price
5) reliability of water service and supply
6) conservation

The index has been constructed and tested using large random samples and appropriate statistical processes. It has also been designed to allow for continual expansion to incorporate comparable measurements taken in future surveys of other important customer segments and stakeholder groups, including commercial and industrial customers.

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ISO

ISO registration was a contract requirement with the city. Veolia was required to be registered in two areas 9001 – Quality, and 14001 – Environmental. A large effort was made to be ready for the ISO audit by May 15, 2005, and registration was recommended in both areas. For Customer Relations, this effort included generating three departmental procedures to support the company-wide procedure for Customer Satisfaction. These three procedures (which are included) refer to the annual required customer satisfaction survey, the required documenting and reporting of formal complaints, and the training needed by all customer service employees in order to acquire and maintain the competency needed to provide good customer service and thus ensure customer satisfaction.

Besides these three procedures, all work instructions, forms, reference material, and reports related to functions within the customer relations area were accumulated and reviewed. Although every task within customer relations has not been formally documented, a significant start has been made, and plans are to continue to augment this body of documentation with appropriate ISO formatted instructions for all tasks and functions.

As one of the main departmental procedures has to do with training, a significant effort has been made to make the customer relations training program more structured and better documented. This will help keep the ISO documents current with department processes, and ensure that all tasks, functions, and processes will be appropriately documented.

Projects: 2005 – 2006:

- Make sure current documentation is completely maintained in the ISO format in time for the annual walk-through (audit).
- Continue to build a body of work instructions for all tasks and functions within Customer Relations, conforming to ISO format.
- Establish a process which will put tracking controls on both sides of the transfer of water quality calls that go to the lab for follow-up.
- Review the new ISO 14001:2004 ruling and ensure that Customer Relation complies with any portion that affects customer satisfaction.

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Office and Clerical Union Contract

Veolia Water Indianapolis, LLC and the National Conference of Firemen & Oilers, S.E.I.U. Local 131 office and clerical group have a collective bargaining agreement. The purpose of this agreement provides for orderly and constructive employee relations in the public interest, in the interest of the company and the company's clients. This agreement expires on December 31, 2005.

Projects: 2005-2006

Negotiate a new agreement. Preparations for negotiations will begin with:

- A VWI negotiating team has been formed and has begun to determine issues/priorities to be addressed.
- Establish negotiation bargaining unit.
- Contingency operating plan. This plan will include 2 categories: the Operating Plan and the foundation of the plan (including general picket info, general communication info and security issues.
- Sympathetic Action Plan

It is the goal of the Customer Relations department to negotiate a contract that will provide the customers of DOW service that exceeds the expectations of the communities we serve and the IURC and OUCC.

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Relationship with Stakeholders

A customer service organization is highly dependent upon its customer information and billing system. The dependence causes a close alliance between the customer service organization and the company's IT organization whose job it is to support the system, generate required reports and develop any enhancements. As with any large system that maintains information for thousands of customers, issues and system problems are inevitable. To minimize the frequency and severity of these problems, our customer service staff work closely with all users of the customer information billing system and the IT department. A structured issues management process, managed jointly with users and IT staff, has been established to prioritize, evaluate and manage progress.

Good working relationships with the Mayor's Action Center, OUCC and IURC are critical to VWI's success in operating IWC. When customer requests or inquiries escalate to VWI management or are directed to us through other state and local agencies, the complaint is documented and tracked from the first step through resolution.

Once the complaint has been resolved, it is then categorized, logged and the results reported back to the agency of origination as well as reported to the DOW monthly.

In order to make the communication and problem solving process work smoothly, developing business relationships with agency staff and management is important. Educating our stakeholders on customer & field operations, water production and environmental stewardship with IWC & VWI is beneficial to creating the type of partnership necessary to resolve difficult consumer concerns and problems. Production plant tours have also been and will continue to be an effective tool to assist with the learning process.

Proactive communication occurs to the IURC and OUCC triggered by a news release. When practical, a personal contact is made prior to the release to the media. Customer Relations performance data is provided to the IURC monthly and update meetings are scheduled periodically as needed or requested.

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Citizens Advisory Group (CAG)

The CAG is an advisory group established for the purpose of providing advice and used as a barometer for IWC/VWI relationship with customers.

Mission/Purpose:
The Citizens Advisory Group ("CAG") is organized to:

- Establish a medium for communication and feedback on issues relating to the services provided by Veolia Water Indianapolis, LLC (VWI) to customers of Indianapolis Water.
- To provide advice to VWI in the areas of communication with customers, customer service, satisfaction, and water quality.
- To serve as a sounding board through which VWI'S management can communicate ideas, rationale, and explanations regarding VWI's policies and actions to customers in the service territory.
- To serve as a medium where customers within the District can express their needs and concerns on the services of VWI in the areas of customer service, and satisfaction and water quality.

Membership:

The CAG is composed of twenty water customers with a direct stake in water quality and supply issues, plus two VWI employees. The CAG is a group of volunteers participating in an unincorporated volunteer organization. The membership should reflect the diverse backgrounds and viewpoints of the customers of the Department of Waterworks (DOW). Each member shall serve a minimum of a two year term. The requirements for membership are as follows:

- Appointment and approval thereof by VWI and the DOW.
- Desire to assist Indianapolis Water and VWI in their efforts to achieve and maintain a world-class water system.
- A current residential, industrial and or commercial customer(s) or representative of an industrial and or commercial customer(s).
- A willingness to attend meetings and to actively participate in the activities of the group.
- A willingness to serve as an ombudsman for VWI and the DOW.

All members may select an alternate and the alternate's name shall be submitted to VWI prior to the first meeting of the year. The names of the alternate will be

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submitted to Indianapolis Water for appointment and approval. Alternates must be a customer located in the District. If a member cannot attend a meeting and will have his or her alternate in attendance, the member is required to notify VWI of the alternate's attendance prior to the meeting.

Role of a Member:

To advise and assist VWI in understanding how its decisions may affect its customer base by serving as a medium on issues/matters that are related to customer service, customer satisfaction and water quality. To assist VWI in projects that may be assigned to the body by VWI in its endeavor to improve customer service, customer satisfaction and communication to its customer base. To serve as a vehicle by which customers of VWI can bring forth issues in the areas of customer service, satisfaction and water quality. To serve as ombudsman for VWI and the District in their efforts to raise the quality of service to customers in the district.

Agendas/Programs:

CAG members and Veolia Water Indianapolis will work together to determine agendas and programs. VWI staff will provide information for each meeting. The company will mail agendas to members in advance of the meetings and provide further assistance at the direction of the membership. Under most circumstances, VWI will recommend and contact speakers for meetings at the direction of the committee. If a member has a desire to have a speaker for a meeting, the member shall obtain approval from VWI prior to contacting the speaker.

Meetings Frequency-Time

Schedule to be determine by the CAG at the December 14, 2004 meeting. Attendance at meetings is a requirement of membership to the CAG. It is a member's responsibility to make attendance at all meetings a priority. If a member cannot attend a scheduled meeting, the member should notify the company or its representative prior to the meeting and make arrangements for his or her alternate to be in attendance.

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Networking with other Associations and Utilities

The management of VWI is committed to providing continual learning and development opportunities to management by encouraging participation and leadership in professional organizations, associations and networking with other utilities and like businesses for best practice comparisons.

Projects: 2005-2006

Maintain memberships with:

- Indiana CPA Society
- American Waterworks Association
- SOCAP (Society of Consumer Affairs Professionals)

Network with:

- Citizens Gas:
  Discussions about methods and practices used in call center, billing and cash applications; comparisons and practices about training and other human resource issues; discussions regarding payment issues as they are a pay agent for the water company.

- Indianapolis Power & Light
  Discussions about methods and practices used in call center, billing and cash applications; comparisons and practices about training and other human resource issues; discussions regarding payment issues as they are a pay agent for the water company.

- IEIFS (collections)
  Discussions regarding collection methods and practices; information concerning new bankruptcy laws; discussions concerning additional automated services available.

- Union Federal
  Discussions concerning remittance and bill print practices and methods; discussions concerning additional automated services available.

- Normandy Project via Veolia

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Working with European Veolia counterparts to determine best practices for functions within a customer service organization.

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Conclusion

This Customer Service Plan described a list of actions which have been and will be implemented in the near future. A CSP should be considered as a living document which could be amended any time to take into account the moving environment in which we are working. The fact that several actions have been described in more detail than others doesn't mean that they are more important than the ones which have been simply listed.

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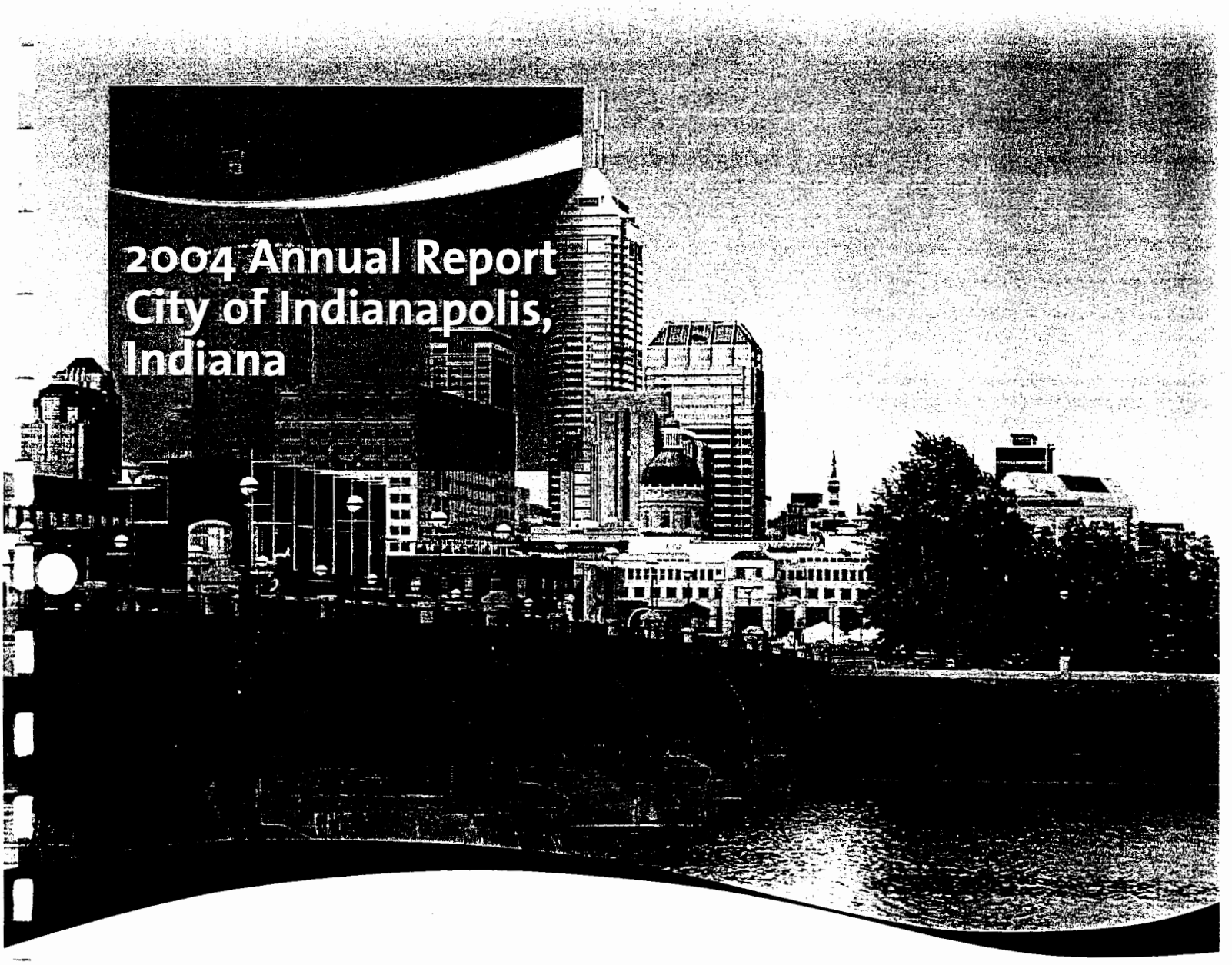
Appendix D
Part Three
Project Scorecards

VEOLIA Water

VEOLIA
Water
Indianapolis



2004 Annual Report
City of Indianapolis, Indiana

VEOLIA
Environment

Assets We Manage for You

Scope of Services

- Operation and maintenance
- Capital programs
- Meter reading and replacement
- Billing, collections and customer service

Facilities

- System serves approximately 900,000 people
- 12 water treatment plants
- 143 MG daily water production
- 31 pumping stations
- 4,000 miles of water main
- 32,000 fire hydrants
- 19 water storage tanks
- Eight well fields
- Service area encompasses most of Marion County and parts of the surrounding eight counties

Indianapolis Water Partnership Produces Big Results

Key Highlights

- The partnership has enabled the City to freeze water rates for five years.
- Veolia Water Indianapolis, LLC (VWI) has tackled the challenge of significant taste and odor problems, reducing the number of complaints from 501 in 2001 to just 26 in 2004.
- Overall customer satisfaction is above the national average for utilities (70%) with more than 8 of 10 customers saying that VWI is doing an "excellent" or "good" job.
- The Minority Business Enterprise/Women's Business Enterprise (MBE/WBE) program established by VWI has become one of the premier programs in Central Indiana. Not only are goals exceeded, but mentoring relationships are established as well. The overall goal for MBE/WBE participation is 16% or a spend of $7,473,428 (combined Operations and Maintenance and Capital). VWI achieved over 31% with an MBE/WBE spend of $13,939,648 out of a total spend of $44,834,029.
- VWI achieved over 94% with a local procurement spend of $41,983,642 out of a total spend of $44,834,029. The overall goal for local participation is 86% or a spend of $38,557,264.
- VWI posted the best safety numbers in 10 years during 2004.
- Customer service improvements such as pay-by-phone, on-line bill pay, an interactive voice response system and more readable bills have given customers more access to their account information in a timely manner.
- Improved infrastructure, fewer main breaks and more efficient water production have resulted from capital projects.

Executive Summary

In 2002, the City of Indianapolis acquired the assets of the waterworks and selected Veolia Water North America to operate and manage the entire Indianapolis Water (IW) system, including its subsidiaries. This marked the start of the largest public-private water partnership in North America.

With the creation of VWI, the City ensured that the waterworks system would receive the global expertise of Veolia Water while maintaining local control and oversight. VWI has made great strides in just two years to prove itself as a worthy and trusted partner in the community.

The 20-year contract allows both the City and VWI to make investments in the waterworks infrastructure, technology, people and the community. With a unique fee structure, including performance-based incentives, continual improvement is in everyone's best interest.

Partnership Incentives

The City included 37 incentive criteria as part of the management agreement to provide outstanding service to its customers. VWI is responsible for operating towards achievement of those established criteria, identified in the following areas:

- Customer Service
- Water Quality
- Capital Projects
- Technical, Operations and Maintenance (O & M)
- Caring for the Community

Partnership Highlights

CUSTOMER SERVICE

The Customer Service department has worked hard to provide quality service to customers and clients by providing outstanding service to a diverse set of constituents. Overall customer satisfaction is now above the national average for utilities, according to the annual customer satisfaction survey conducted by an independent firm. **The 2004 survey showed an increase in overall customer satisfaction from the previous two years – 83% in 2004, 76% in 2003 and 73% in 2002.**

Key Highlights

> Overall customer satisfaction now exceeds the national average for utilities. The 2004 survey results showed a 10 point increase over 2002 results (83% in 2004, 73% in 2002).

> Comprehensive system improvements, management processes, 24/7 access, training and many additional measures have created a complete customer care culture.

> Bill accuracy, new payment methods, improved reporting and accurate meter reading has been delivered through quality-assurance measures.

The most significant management processes that led to the improved customer satisfaction rating included:

- **Call center management reports** developed and implemented for call center agents, including:
  - productivity report
  - question and answer monitoring form
  - coaching form

  These individual reports, along with additional information, are compiled into a contact center report which allows management to see daily performance and track trends affecting customer service.
- **We invested in employees** by providing 160 hours of training for each new agent and on-going training for existing agents, including refresher training for seasonal information. In addition, a training manual has been deveoped and implemented to ensure consistency among the contact center staff.

The customer service lobby closure was successfully completed with few disruptions or complaints. New and more convenient ways for customers to pay their bills have been established through electronic methods such as pay by phone and internet payments. Other new payment options include Union Federal Bank locations as well as ACE Check Express. All of these payment options are explained in a newly developed brochure called "12 Easy Ways to Pay".

To ensure better billing accuracy, a quality assurance group was established. Meters are now being read two days ahead of the bill date. This has helped to eliminate recordable meter reading errors by giving more time to research and resolve issues.

> Exceeded 2004 goal for incoming calls answered within 30 seconds. Goal: 82% Achieved: 82.7%.

> This goal was achieved while answering a total of 616,092 incoming calls for all clients in 2004.

When VWI began providing the full range of customer services from bill creation, call center, remittance processing and collections for IW in 2002, we began implementing technology and management tools to better manage the customer processes. Prior to this time, most of the customer service processes were manual, difficult to quantify and measure, with limited technology deployed. The most significant technology enhancements developed and implemented since May 2002, that have had the most significant positive impact on VWI's performance include:

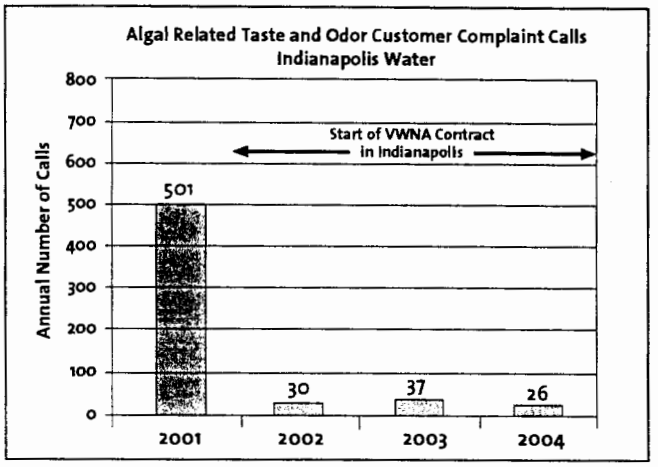
- **Automation of the customer bill payment research function,** implemented by utilizing our remittance processing partner's technology which resulted in streamlining this task from hours to minutes, resulting in faster response time to customer inquiries.
- **Help desk function improvements** adding the capability to track trouble tickets and better manage the process, thus leading to less down time for the call center agents.
- **Conversion to Smart Suite billing system** that eliminated most paper processes and allowed for more timely access to critical information, such as status of field and distribution work orders and bad debt information readily available on a shared drive for employee access. Also enabled a more user-friendly bill format to be implemented with more options for customer messaging.
- **Development of the expertise to produce, refine and customize reports** that enable us to be responsive to client's changing needs for data.
- **Improved customer access** into the call center by increasing the number of lines and capacity by upgrading the phone switch technology. Installation of the Interactive Voice Response system now enables customers to access some account data 24 hours a day, seven days a week, without talking to a live agent. The upgrade also provides management the ability to change messages at any time.

Partnership Highlights

- Our call center reporting software, Symposium, offers the **ability to better analyze workload,** providing more flexibility in scheduling employees, adding skill-based routing functionality and minute-by-minute incoming call center data displayed on the call center floor.
- Utilizing technology from Experian has allowed for **improved credit checking and positive identification of customers,** thereby increasing billing accuracy.
- By using internet technology, **customer service agents are able to more rapidly respond to customer inquiries.** Customers are able to enter account information into the system prior to speaking with an agent, thus reducing call time.
- **New network management** has been installed that provides our Information Technology department the ability to remotely monitor all activity and traffic on the system in order to proactively detect and prevent possible problems.
- A backup **facility generator was installed** at the call center to provide uninterrupted delivery of power to the call center and data center in the event of local power outage.

WATER QUALITY

VWI accepted the challenge of resolving significant taste and odor problems related to algae growth in the drinking water supply reservoirs. In 2002, VWI implemented several initiatives to mitigate objectionable taste and odor events caused by the growth of nuisance algae in the water supply reservoirs. An extensive reservoir monitoring program was initiated to monitor conditions on the supply reservoirs. This was coupled with a proactive algaecide treatment program to mitigate nuisance algal growth before development of severe blooms. In addition, extensive testing was conducted to evaluate the most effective powdered activated carbons for removal of taste and odor causing compounds within the treatment facilities. These tests resulted in changes in the type of carbon used at the facilities. VWI continues to seek improvements in its reservoir monitoring and treatment program through its long-term research partnership with IUPUI. Through this integrated approach to monitoring, evaluating, treating and continually improving, VWI has significantly reduced the number of taste and odor related customer complaints.

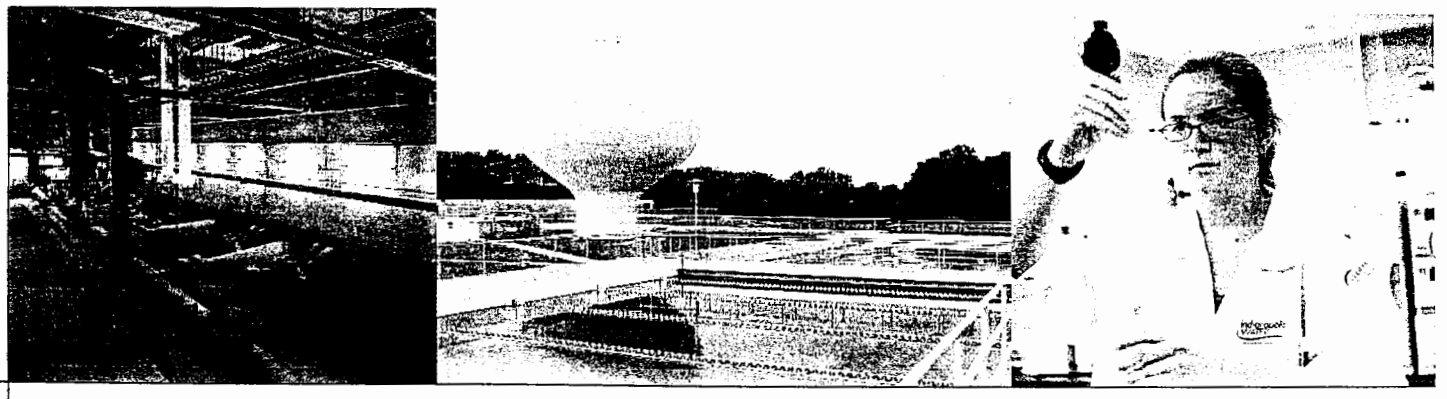


The IUPUI partnership is proving to be a huge success, not only in providing technical expertise to develop watershed management strategies, but in leveraging other funding sources for improving Indianapolis source water quality and in developing a technical center of expertise at the university. In 2004, the university added three new faculty positions in the water resource management area largely due to the stability offered by VWI's long-term commitment. The research and development activities currently undertaken by the partnership are associated with understanding, modeling and predicting reservoir water quality and how the water quality may be impacted by various management practices.

VWI has worked closely with the Technical Advisory Group (TAG) on a variety of complex operational and water quality issues. The TAG is made up of scientists and engineers representing local industries, environmen-

Key Highlights

- Reduced taste and odor complaints from 501 in 2001 to 26 in 2004.
- Produced a record 51.9 billion gallons of water in 2004.
- Performed 172,780 laboratory tests on 32,318 water samples to confirm the water quality.
- Improved relationships with advocates and agencies.
- $250,000 annual investment in Indiana University Purdue University Indianapolis (IUPUI) research partnership



tal organizations and universities, who provide a forum for discussion and evaluation of technical and policy issues. The TAG has taken up topics ranging from long-term capital planning to comply with future water quality regulations, to reservoir management to minimize taste and odor issues, to proper response procedures in the event of certain water quality questions or concerns. VWI has included international Veolia Water experts as well as outside experts and regulatory personnel in meetings on specific topic areas where their involvement proved to be beneficial. The TAG discussions have resulted in improved relationships with local community environmental advocates and with regulatory agencies.

SAFETY

Continuous employee training has assisted in reducing the number of incidents. VWI has reduced the recordable incident rate an average of 7.7% over a 10-year history compared with the water supply industry rate reduction of 4.1% per year over the same time period.

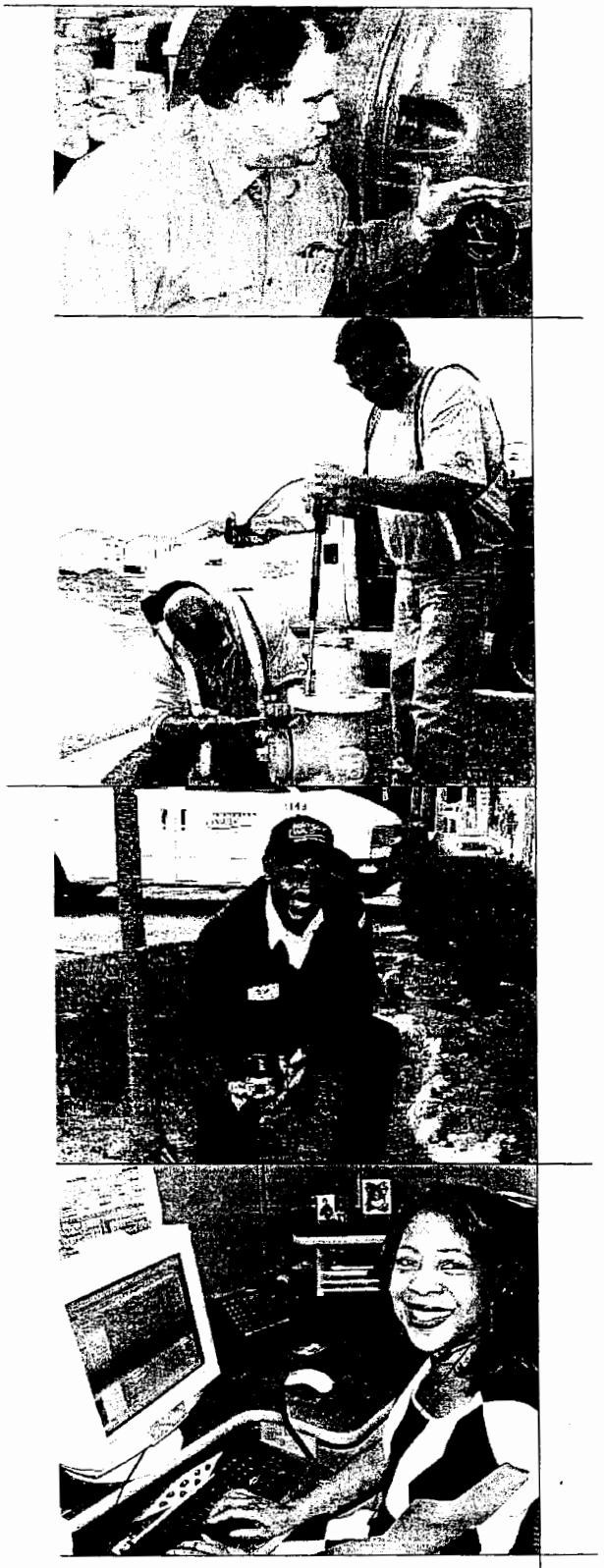
We reduced the recordable incident rate 22% in 2003 and 18% in 2004 when compared with the year previous. The recordable incident rate of 7.07 for 2004 was an all-time low for VWI.

Key Highlights

> The recordable incident rate of 7.07 for 2004 was the all-time best safety record for the utility in the past 10 years.

We delivered over 50 training sessions and classes on a variety of topics including confined space, asbestos awareness, vehicle safety and others. Four new guidance policies were developed and implemented and the first-ever employee evacuation drill was conducted.

Year	Indianapolis Water/ VWI Recordable Incident Rate	Bureau of Labor Statistics Data for SIC Code (1623) Water, Sewer Pipeline (communications and powerline)	Bureau of Labor Statistics Data for SIC Code 4941 (Water Supply)
2001	10.4	7.8	5.9
2002	9.82	6.2	8.2
2003	8.64	6.9	6.6
2004	7.07	not available	not available



Partnership Highlights

CAPITAL PROJECTS AND INVESTMENTS

Key Highlights

- Gaps in the system were closed using proactive capital projects.
- Capital projects reduced main breaks and other service interruptions.
- System reliability has been improved, in large part, because of capital projects completed under VWI's management.
- Executed $46.2 million of capital projects in 2004.

Under previous management of IW, capital projects were prioritized differently. VWI has identified numerous projects which improve the system's efficiency and reliability and meet future water quality regulations. Typically these projects improve the redundancy and flexibility of the system.

Our project's priorities are focused on infrastructure and water quality. As a result, these projects improve the system's operating effectiveness, long term reliability and improve customer relations. Examples include:

- **30 projects totaling approximately 30 miles of main** were identified and approved for construction. These projects close gaps in the system, improve the hydraulic efficiency of the system and reduce the number of dead-ends that can potentially contribute to water quality issues.
- Over the past two years, **22 projects have been identified and constructed that replace those segments of main with the highest number of main failures.** These failures result in service interruption, damage to City infrastructure such as sidewalks and roads, and loss of water. In the past, these projects had not been a priority. VWI has identified a number of locations that, with coordination with the Indianapolis Department of Public Works, will allow an extended life to their public improvements.
- Four, one-million-gallon elevated storage **tanks are being constructed to improve system reliability** and allow the existing infrastructure to meet peak system demands.
- **Improvements are being made to the existing filters** at the White River and Fall Creek treatment plants that will reduce the requirements for backwash water and increase the available supply.
- An expansion is underway at Geist Station to **increase this plant's capacity** by 4 million gallons per day.
- Significant improvements have been identified at the White River Treatment Plant. The **improvements address infrastructure** that will be unable to meet upcoming water quality regulations and significantly improve the reliability of this source of supply. The improvements include the construction of a new water intake structure for this facility, reducing the dependency on the canal as a source of supply and upgrading the sedimentation/flocculation basins to insure adequate water quality prior to filtration.
- A new **residuals handling facility was created** to eliminate water treat ment plant disposal to the Indianapolis sewer system.
- Major pipeline contracts involving neighborhoods with contaminated wells were completed. Cooperation with the Marion County Health and Hospital as well as the Indiana Department of Environmental Management to **install water lines and new customer services and close contaminated wells** occurred to prevent future access.
- An investment in SCADA/technology improvements in 2003 **enhanced chemical and power management** through better data collection, increased online monitoring and improved trend analysis.

- In order to assist the City in determining their capital financial needs and avoid unexpected capital requests during the year, VWI has **consistently identified critical capital projects in the Capital Plan** and has achieved both incentives in this category each year.

TECHNICAL OPERATIONS & MAINTENANCE

VWI has implemented operational and distribution system modifications to improve water pressure to areas of the IW system prone to experiencing low pressure. Using pressure monitors installed within the distribution network, VWI continually monitors pressures at key locations. The number of occurrences in 2003 and 2004 in which the pressure at any of these locations dropped below 30 psi was reduced by an average of over 40% from the number occurring in the baseline year of 2002. This reduction was due to a combination of recommending and implementing distribution system infrastructure improvements in certain critical areas, and ensuring that the pumping system is operated in a manner to minimize even momentary low pressure occurrences.

Key Highlights

- VWI has increased efficiency in the system through the use of technology.
- Water quality has been increased with the use of alternative treatments.
- Project management technology has been streamlined for more effective tracking.

VWI has made process adjustments in several areas to provide more efficient operation and improved water quality. Modifications were made at the Fall Creek and White River treatment plants to provide alternative locations in the surface water treatment process to blend groundwater. The alternate blending locations provide additional flexibility to optimize the coagulation and filtration processes at the treatment facilities. In addition, VWI has switched from the use of low concentrations of chlorine as a pre-oxidant during warm-weather periods to the use of sodium permanganate. This change has reduced the formation of disinfection by-products in the treatment process, thus improving water quality delivered to Indianapolis customers.

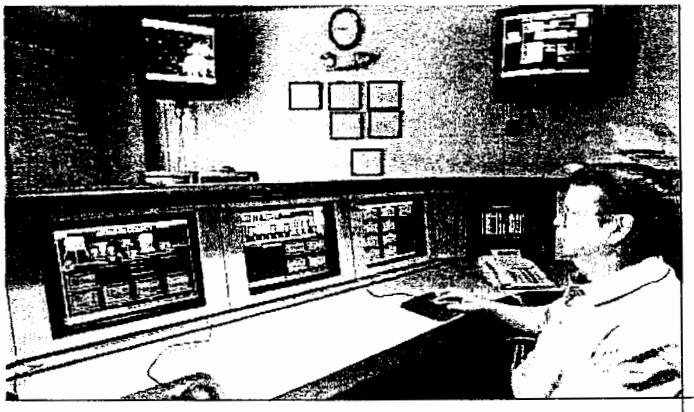
VWI has implemented several upgrades to its monitoring and control systems in both the treatment plants and in the distribution systems. Several process monitoring instruments were installed online in the treatment process to provide additional continuous, real-time monitoring. In addition, online water quality instruments were installed at critical locations to assess potential water quality degradation within the distribution system. A new control room was constructed at the White River Treatment Plant to upgrade the control and reliability of the treatment process. In addition, the control room included an operator interface for controlling pumps and valves throughout the distribution system to provide an alternative location for these operations.

VWI successfully implemented Synergen in September 2003. Synergen is an Enterprise Asset and Work Management system (EAM) / Computerized Maintenance Management System (CMMS) that allows companies to optimize asset performance and reliability. Through the use of the CMMS, maintenance programs are streamlined and the full life cycle of the asset is taken into consideration. Synergen is a web-structured program that allows projects to share information to improve overall efficiency.

Maintenance costs were more accurately captured and reporting to the client was greatly improved. Preventive Maintenance (PM) tasks were generated based off calendar date and/or run time. Initially the PM were developed from past practice, but with the implementation of Reliability Centered Maintenance (RCM), the frequency and scope of the PM are changing for improved asset management.

RCM is a process used to determine what maintenance activities should be done to an asset to ensure it operates at the user's expectations throughout its life. RCM uses seven separate activities to identify what should be done to properly maintain an asset. VWI has analyzed over 20 separate processes throughout the overall system. Many predictive tasks have been established and the results have been favorable.

The process of continually inputting facility information into the water system Global Information System (GIS) has improved since VWI began management of the system. The process has been streamlined by using technology, improved project tracking system and commitment to ever decreasing deadlines. Global Position Systems are being used to speed data entry as well as increase the accuracy of locating each fitting, valve, fitting and pipe. The project tracking system helps all know when projects are ready for the next step. Total number of projects added to GIS between 2002 and 2004 was 2,090.



Partnership Highlights

CARING FOR THE COMMUNITY

VWI has one of the best MBE/WBE programs in Central Indiana. The program engages the services of many local and national firms and aggressively courts MBE's and WBE's for ongoing projects. With these firms now responsible for more than 31% of subcontracted work for capital and O & M, VWI has well exceeded the city's stated requirements and levels reached by prior managers of the system.

In 2004, we far exceeded goals in the MBE/WBE program.

Key Highlights

- Central Indiana minority and women business owners single out VWI's MBE/WBE program as one of the best.
- VWI has contributed more than $2 million to the community since signing the contract.
- Community service and volunteerism is practiced by VWI employees starting with senior management's commitment.

With 31% of total expenditures coming from MBE/WBE vendors, we almost doubled the goal of 16% for the year. We were also able to successfully establish mentoring relationships with several MBE/WBE vendors, leading to a nomination for the Mayor's Celebration of Diversity Awards in 2004. One of the goals of the mentoring program with our MBE and WBE vendors is to elevate them from second tier vendors to prime contractors and we are proud to say that over the past two years, two of our second tier vendors have become prime contractors. VWI is also proud to have increased the number of certified MBE/WBE's last year.

The MBE/WBE Review Committee that was established immediately after VWI was awarded the contract to operate and manage the assets of IW is a key reason that the incentive goals have been met and exceeded for the past three years. The committee meets quarterly and reviews the progress of the MBE/WBE Local Services Plan. The plan was put in place as a road map to success for the program.

The committee consists of MBE and WBE business owners and members of organizations such as the Indiana Regional Minority Supplier Development Council, Indiana State Hispanic Chamber of Commerce, National Association of Women Business Owners and the City's Department of Administration.

Keeping money local was another important factor in the City's decision to purchase the waterworks assets. VWI is sensitive to this issue and strives to use local providers whenever possible. Utilization of local providers for the purchase of goods and services for all facets of capital and O&M accounted for 94% of the expenditure dollars for 2004.

Citizens Advisory Group

The Citizens Advisory Group ("CAG") is organized to:

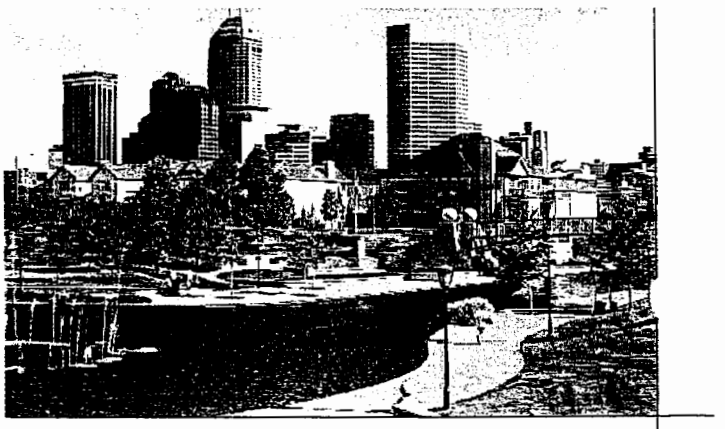
- Establish a medium for communication and feedback on issues relating to the services provided by VWI to customers of IW.
- To provide advice to VWI in the areas of communication with customers, customer service, satisfaction, and water quality.
- To serve as a sounding board through which VWI'S management can communicate ideas, rationale, and explanations regarding VWI's policies and actions to customers.
- To serve as a medium where customers can express their needs and concerns on the services of VWI in the areas of customer service and satisfaction, and water quality.

The CAG is an unincorporated volunteer group, comprised of twenty water customers with a direct stake in water quality and supply issues, plus two VWI employees. An annual CAG survey is performed to assess the members and their satisfaction with the forum. 2004's survey resulted in a nearly 92% satisfaction rate.

Community Involvement

As part of its contractual agreement with the City, VWI agreed to significant community involvement in Indianapolis. Since the contract began, VWI has contributed more than $2 million to local not-for-profit organizations. This includes multi-year commitments to the world's largest children's museum, The Children's Museum of Indianapolis as well as Martin University, Junior Achievement of Central Indiana and the Purdue University Science Bound program which is a program that provides opportunities for Indianapolis Public School students to earn full scholarships to study careers in the engineering, math, science and technology fields and to promote diversity in these underrepresented academic areas.

VWI's community involvement also includes a major educational outreach component to provide Water Boxes to all of the schools in the IW service territory. The Water Box is an educational tool for grades 4-6 designed to be a hands-on student activity to teach students about water and the water cycle. The Water Box is a safe, simple way to teach all the fundamentals of water. There are currently more than 140 water boxes being used by schools in the IW service territory to teach students about the earth's most valuable resource.



VWI's 10 member senior management team, led by Tim Hewitt, president and operations manager, is also heavily involved in the community, serving on boards or volunteering with the following organizations:

- Little Red Door Cancer Agency
- Indianapolis Chamber of Commerce
- Crossroads of America Boy Scouts
- Greater Indianapolis YMCA
- YWCA
- National Coalition of 100 Black Women
- Community Development Law Center
- Indiana Swimming Executive Committee
- Indiana Regional Minority Supplier Development Council
- Indianapolis Urban League
- Purdue University Science Bound
- St. Mary's Child Development Center
- Indianapolis Symphony Orchestra
- Lutheran High School
- Indiana Chamber Legislative Committee
- Ronald McDonald House Resource Development Committee
- Ballet Internationale
- Eiteljorg Museum of American Indian and Western Art
- BOS Community Development Corporation
- Big Brothers Big Sisters of Central Indiana
- Junior Achievement of Central Indiana
- Flanner House
- Rebuilding Together

CARING FOR EMPLOYEES

Employee Relations

VWI recognizes that the 400 individuals employed with us are the backbone and lifeblood of the Indianapolis project. Employees are encouraged to participate in community service projects through the VWI employee volunteerism program which recognizes employees who give back to the community. Employees also have the opportunity to participate in community events such as The Race for the Cure, the Indiana State Fair and the Race Against Prostate Cancer with fellow co-workers.

Training and development are key to ensuring the success of the workforce and VWI offers full tuition reimbursement to employees as well as opportunities for a variety of training courses. Employees are encouraged, through goal setting, to stretch their abilities and strive for constant learning.

VWI also supports various employee activities. The activities are determined by a committee made up of employees representing the departments of VWI. Activities include golf tournaments and leagues, a bowling league, fishing tournaments, softball leagues and more. Each year, employees and retirees are invited to a VWI sponsored health and wellness fair where they receive valuable medical tests such as cholesterol and glucose level checks at no cost. VWI also gathers employees and retirees each summer for a fun-filled cookout on the grounds of the Indianapolis Water General Office.

Who We Are

Veolia Water North America is the leading provider of comprehensive water and wastewater services to municipal and industrial customers, providing services to approximately 14 million people in more than 600 communities. We operate the nation's largest public-private partnership for water services in Indianapolis and the country's very first partnership, established in 1972 with Burlingame, Calif., an ongoing customer now for more than 30 years.

Formerly known as USFilter Operating Services, in early 2004, we proudly adopted the name of our parent company. The company is part of Veolia Water, the No. 1 water company in the world, serving more than 110 million customers. Veolia Water is a subsidiary of Veolia Environment, the largest environmental services company in the world, with more than 295,000 employees in about 80 countries and annual revenues of more than $28.6 billion.

ASSETS WE MANAGE

- Water treatment facilities and distribution systems
- Wastewater treatment facilities and collection systems
- Reclamation and effluent reuse facilities and distribution systems
- Residuals management (sludge/biosolids/compost) and marketing
- Combined sewer and sanitary sewer systems
- Groundwater remediation sites
- All related aboveground and underground assets (plants, pumps, pipes, hydrants, meters, tanks, towers, reservoirs,wells, etc.)
- Call centers and customer service centers

WHAT WE DO

- Operations and maintenance
- Design-build-operate
- Customer service
- Asset management and capital improvements
- Technology and equipment
- Master planning
- Environmental, safety and security programs
- Industrial pretreatment programs
- Financing

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www.indianapoliswater.com

WATER PARTNERSHIP COUNCIL

VEOLIA Water

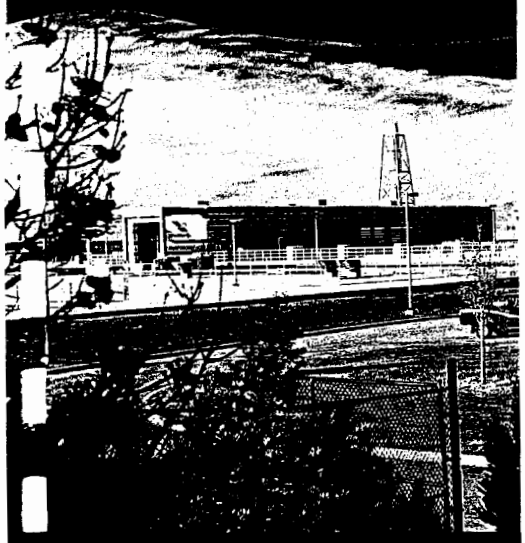
VEOLIA Water

2004 Performance Summary

New Bedford Wastewater Treatment Facility

VEOLIA Environment

Assets We Manage for You



Facilities

> 30 MGD activated sludge WWTP

Scope of Services

> Operation and Maintenance

> Biosolids disposal via separate contract between the City and Synagro

Proud and Trusted Partner

Veolia Water (then Professional Services Group) has proudly served the New Bedford community since 1990 when we began operation of the then primary wastewater treatment facility. At that time, the City was under regulatory mandate to upgrade the system.

Veolia Water designated a Special Project Manager to assist the City during the construction phase of its new facility, which upgraded the plant to secondary treatment and went online in August 1996. Additionally we were tasked with demobilizing the primary facility while transitioning our staff from a primary to secondary treatment facility which required new training on process equipment and a higher operator license certification. After demolition, the primary facility's location is now an open expanse as part of the Fort Taber Park-home to the community's amphitheater.

Over the course of the **14-plus year partnership,** Veolia Water has helped the city realize many benefits, including:

PRIOR TO THE CONSTRUCTION OF THE NEW FACILITY

- Improved electrical load efficiency from 77 to 98 percent and reduced electrical billing by $1,400 per month
- Development of a new septage receiving facility, allowing septage to pass through grit removal prior to entering the facility
- Reducing chlorine usage by instituting a flow-paced chlorine dosage system
- Reducing the city's annual water production requirement by two percent with the installation of an online water filtration unit to reuse treated effluent

AFTER CONSTRUCTION OF THE NEW FACILITY

- Drastically reduced odor complaints and electrical consumption by assisting the City in transitioning the facility from a cake dewatering and hauling facility to a liquid sludge hauling facility
- Guaranteeing cost maximums by capping kilowatt-hour annual usage and annual sludge hauling
- Completion of a state laboratory certification program

Three additional benefits of our partnership are:

99% COMPLIANCE AT YOUR FACILITY

Your regulatory compliance has been a fundamental risk management benefit since we entered into our partnership. In fact, facility compliance has improved dramatically under Veolia Water's operation, and we achieved continuous compliance with stipulations of a federal consent decree, which superseded the existing NPDES permit to discharge. Since 1998, we are more than 99 percent compliant at your facility.

We also reduced historically high fecal coliform counts, which had been one obstacle to allowing the City to open shellfish beds that had been closed for over 20 years due in part to combined sewer overflow and discharge problems at the primary facility.

SAVINGS OF $23 MILLION DELIVERED

By selecting Veolia Water as your partner to operate your facility the city of New Bedford has saved $23 million.

MEANINGFUL COMMUNITY SERVICE ROUTINELY PROVIDED

When the city entered into a partnership with Veolia Water for wastewater services, it gained more than just an operations partner—It gained a true community partner committed to making New Bedford a better place to live and work. Over the years the company has been involved in many programs from beautification to supporting youth sports.

Financial Performance Overview

As a result of our successful partnership, the city of New Bedford has realized a savings of $23 million. The savings are the result of the city's decision to enter into an operate and maintain (O&M) service contract with Veolia Water versus another competitor. The next highest bidder's costs have been CPI adjusted to reflect the city's estimated costs if it had chosen their services. With the O&M agreement, Veolia Water has been able to mitigate environmental concerns through cost-effective services and pass those savings onto the city of New Bedford.

FINANCIAL COMPARISON-VEOLIA WATER VS NEXT HIGHEST BIDDER

	7/1/95-6/30/96	7/1/96-6/30/97	7/1/97-6/30/98	7/1/98-6/30/99	7/1/99-6/30/00	7/1/00-6/30/01	7/1/01-6/30/02	7/1/02-6/30/03	7/1/03-6/30/04
CPI				1.20%	3.06%	2.50%	0.55%	3.00%	3.01%
Next competitor's price			$ 7,429,167	$ 7,518,317	$ 7,748,378	$ 7,942,087	$ 7,985,768	$ 8,225,341	$ 8,472,924
Electrical costs				$ 1,212,339	$ 1,026,236	$ 1,370,029	$ 650,000		
Total costs			$ 7,429,167	$ 6,305,978	$ 6,722,142	$ 6,572,058	$ 7,335,768	$ 8,225,341	$ 8,472,924

	7/1/96-6/30/97	7/1/97-6/30/98	7/1/98-6/30/99	7/1/99-6/30/00	7/1/00-6/30/01	7/1/01-6/30/02	7/1/02-6/30/03	7/1/03-6/30/04	7/1/04-6/30/05
CPI				1.20%	3.06%	2.50%	0.55%	3.00%	3.01%
Base contract	$2,765,545	$4,524,861	$5,759,651	$3,371,148	$3,478,550	$3,572,444	$3,573,987	$3,678,717	$3,826,159
Maintenance			$250,000	$253,000	$260,590	$267,105	$268,575	$276,739	$285,318
Sub-total contract costs	$2,765,545	$4,524,861	$6,009,651	$3,624,148	$3,739,140	$3,839,549	$3,842,562	$3,955,456	$4,111,477
Sludge rebate			$0	$0	$248,884	$203,656	$193,584	$188,384	$214,645
Maintenance rebate						$ 8,976	$ 7,589	$ 10,625	
Total costs	$2,765,545	$4,524,861	$6,009,651	$3,624,148	$3,490,256	$3,626,916	$3,641,389	$3,756,447	$3,896,832
Total Savings			$ 1,419,516	$ 2,681,830	$ 3,231,886	$ 2,945,142	$ 3,694,379	$ 4,468,895	$ 4,576,092

Cumulative Savings $23,017,739

Operational Summary from your Wastewater Plant

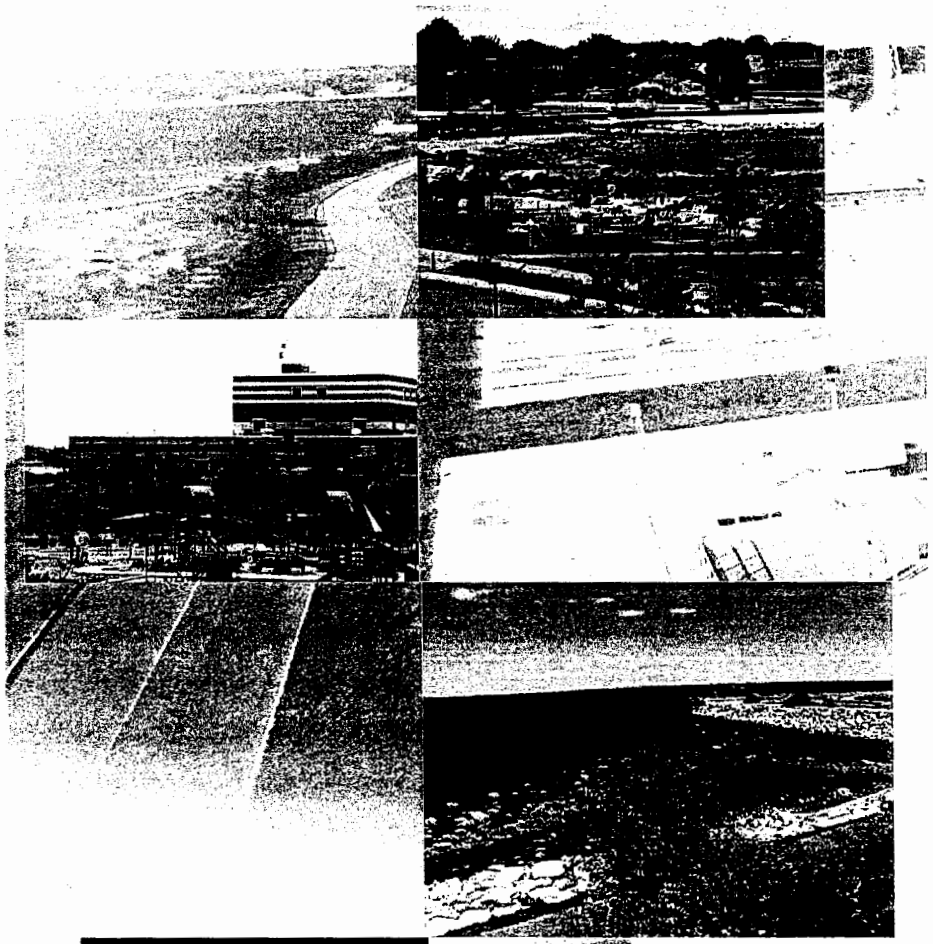
We are proud to have served as your risk management and mitigation partner over the years for environmental compliance and safety. We have a proven track record in environmental compliance and employee training and safety programs. Veolia Water has experts in all of these fields and strong experience in effectively delivering these programs.

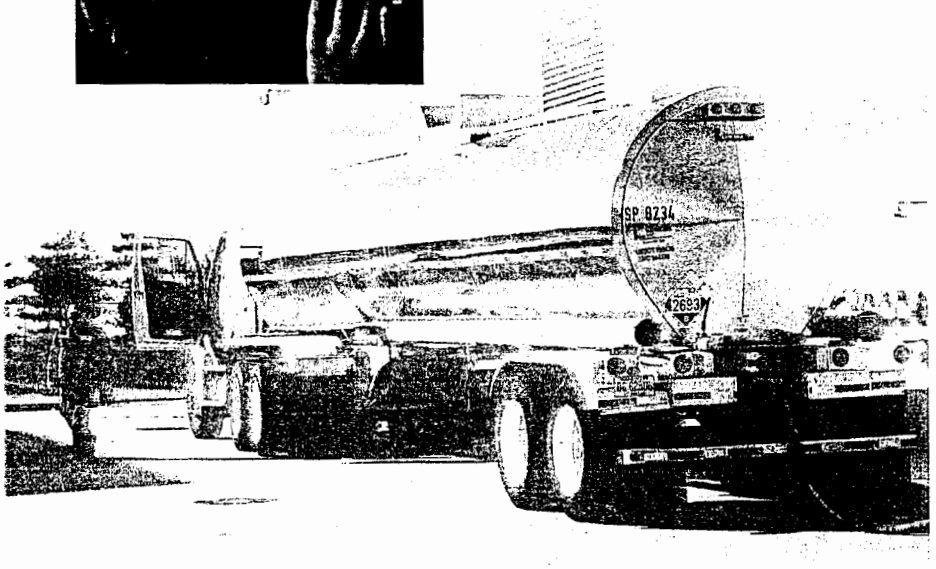
OPERATIONAL PERFORMANCE SUMMARY

Variable (units)	1996	1997	1998	1999	2000	2001	2002	2003	2004
Flow (Avg MGD)	26.44	22.33	25.03	21.12	22.21	22.62	21.24	24.24	20.96
Total rainfall (inches)	24.83	48.37	58.20	45.18	53.08	53.16	36.94	36.79	27.18
TSS (lbs avg)	43,291	31,252	33,553	36,272	36,352	30,299	37,349	29,245	26,522
TSS (% removal)	unavailable	unavailable	92.1	91.5	91.2	93.3	92	89.1	89
BOD (lbs avg)	54,898	40,922	47,554	45,215	39,193	37,558	43,084	40,208	37,280
BOD (% removal)	91.0	93.0	96.0	94.0	92.8	94.9	93.8	95.2	94.3
Effluent pH (avg)	6.9	6.8	6.8	6.8	6.9	6.9	6.7	6.9	7.0
Biosolids Disposed (DT/Yr)			6,209	5,853	5,464	4,904	4,489	5,784	4,112

Since the start-up of the secondary facility we have maintained near perfect compliance at 99 percent. We achieve this as a result of our employees who are required to stay up-to-date on all applicable regulations, allowing you to feel at ease for not having to navigate the complicated and ever-changing environmental policies and regulations.

Our training programs for our employees to ensure safety and security in the work environment are unsurpassed and time-tested. As a result of Veolia Water's commitment to creating a health and safety conscious culture, we have a near perfect safety record. Each employee knows how their individual job actions affect utility operations and impact the environment. We understand the risk of having the ultimate responsibility for training and plant environmental compliance.





How to Reach Us

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Caring for the Community

Veolia Water has a vested interest in New Bedford because New Bedford is home to many members of the Veolia Water team. Over the past 14 years, we have worked to strengthen our community through the sponsorship of many meaningful events, programs and associations such as WHALE (Waterfront Historic Area League) which restores and saves historical buildings throughout the City; the City of New Bedford Chamber Foundation, the Greater New Bedford Colt/Palomino Baseball League, and Easter Seals Volley Ball. Additionally, annually we sponsor a summer youth program that enables disadvantaged youth to enjoy 30 hours of hands-on boating instruction, and we contribute to the New Bedford Symphony Orchestra's Seaside Symphony Swing.

Who We Are

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ASSETS WE MANAGE

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- Wastewater treatment facilities and collection systems
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- Residuals management (sludge/biosolids/compost) and marketing
- Combined sewer and sanitary sewer systems
- Groundwater remediation sites
- All related above-ground and underground assets (plants, pumps, pipes, hydrants, meters, tanks, towers, reservoirs, wells, etc.)
- Call centers and customer service centers

WHAT WE DO

- Operations and maintenance
- Design-build-operate
- Customer service
- Asset management and capital improvements
- Technology and equipment
- Master planning
- Environmental health, safety and security programs
- Industrial pretreatment programs
- Financing

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WATER PARTNERSHIP COUNCIL MEMBER

VEOLIA Water

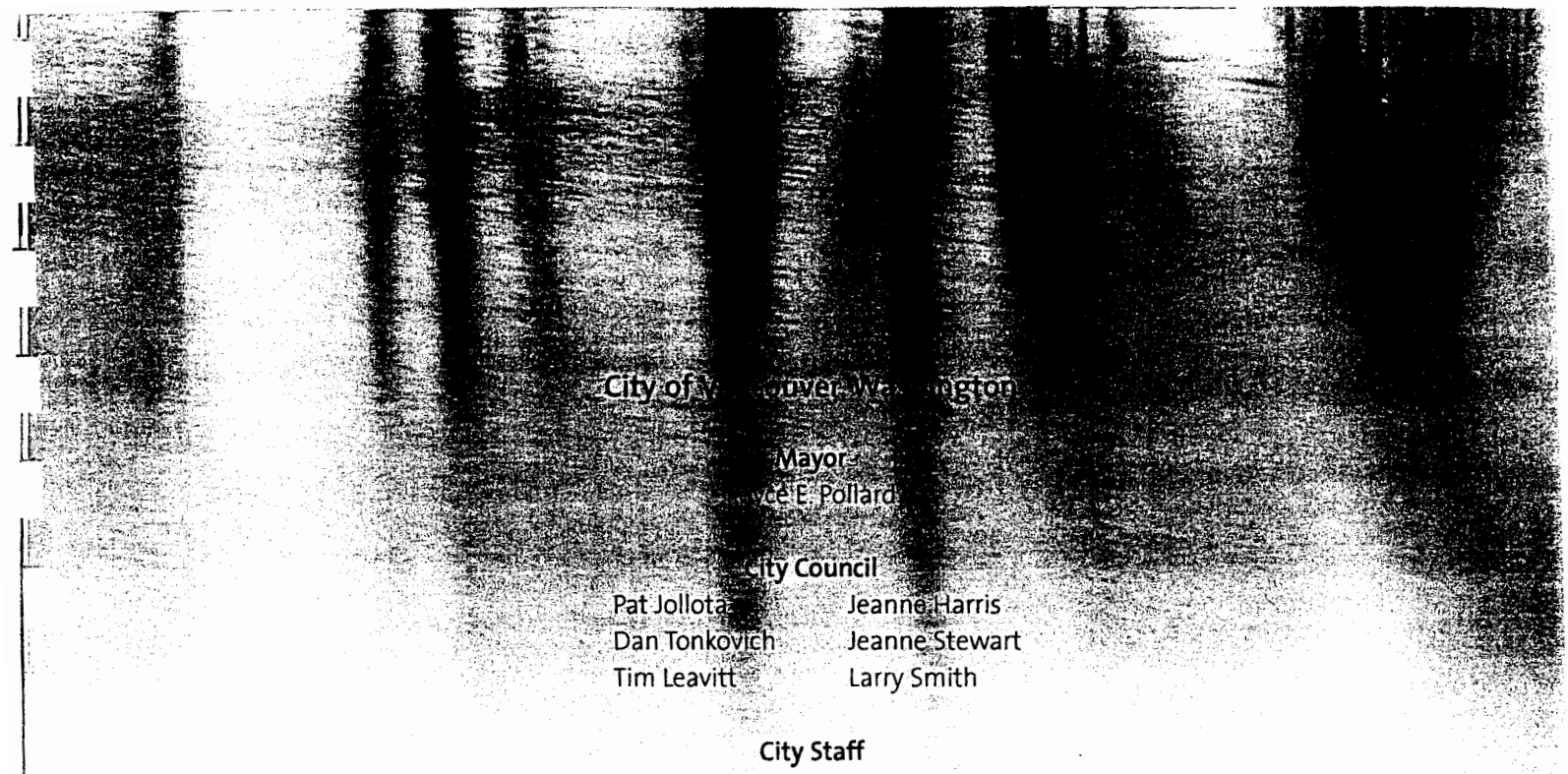
Defining a Partnership

2005 Annual Report to the City of Vancouver

Water Reclamation Facilities

Westside Water Reclamation
Marine Park Reclamation
Industrial Pretreatment Lagoon

VEOLIA Water



City of Vancouver, Washington

Mayor
Royce E. Pollard

City Council

Pat Jollota	Jeanne Harris
Dan Tonkovich	Jeanne Stewart
Tim Leavitt	Larry Smith

City Staff

Pat McDonnell, *City Manager*
Betsy Williams, *Assistant City Manager*
Brian Carlson, *Public Works Director*
Victor Ehrlich, *City Engineer*
Thomas D. Boyer, *Assistant City Engineer*

Report prepared by
Vancouver Project Team
Veolia Water North America – West LLC
2323 West Mill Plain Blvd.
Vancouver, Washington 98660
360.696.0959

Taking things for granted... not hardly!

It's easy for the average citizen to take the city's three wastewater treatment facilities for granted. Though management of wastewater affects every Vancouver citizen, the topic of wastewater is something not commonly thought of unless there is a significant environmental, infrastructure or economic issue at hand.

To a degree, we want citizens to be able to take wastewater for granted because they should be able to trust that their municipal leaders are doing the "right thing" in ensuring wastewater treatment and environmental compliance while protecting area waterways. But in this year's annual report, we think it's important to take a moment to demonstrate to citizens how the city is treating and managing wastewater and related city assets.

We do this through a quick process overview and through photos of the project and our team at work. Hopefully, you'll get a sense that these facilities are highly sophisticated—akin to process technology operations found only on a complex manufacturing site. After winning numerous awards from peer groups, it's clear the city's assets and operations are well managed by any standard in the U.S. municipal water and wastewater industry.

Now in place for 26 years, the partnership between the City of Vancouver and Veolia Water North America is delivering cost-effective, compliant operations to citizens while protecting the local environment.

We are pleased to serve our community.

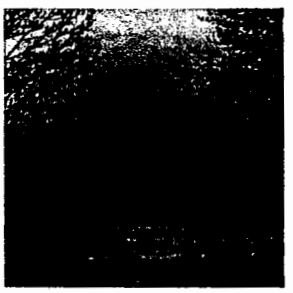
Tom Burns
Vancouver Project Manager
Veolia Water North America – West LLC

Scope of Services

- Operation and maintenance
- Industrial pretreatment program
- Septage receiving program
- Effluent reuse program
- Biosolids reuse, management and disposal

Facilities

- 21.3-MGD Westside secondary activated sludge
- 16-MDG Marine Park secondary activitated sludes
- 4.1-MGD multi-state activated slude industrial lagoon
- Eight pump/lift stations

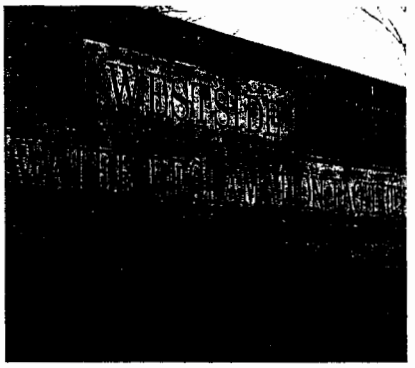


The Vancouver partnership is routinely recognized by water industry peers.

- Water Environment Foundation - George W. Burke Safety Award (2001)
- National Council for Public-Private Partnerships - National Council Public-Private Partnership Award (2000)
- Washington Department of Ecology - Outstanding Wastewater Treatment Plant Award (2000 - 2003)
- Pacific Northwest Pollution Control Association - Award for Ten Years of No Lost-Time Accidents (2000)
- Washington Department of Ecology - Perfect Compliance Award (1998,1999)

Vancouver management team (left to right): Dick Vaughn, Environmental Health Safety and Security Manager; Steve Snider, Laboratory/Industrial Pretreatment Manager; Mike Price, Process Control Manager; Tom Burns, Project Manager; Marc Yarlott, Assistant Project Manager-Facilities; Melissa Sandvold, Assistant Project Manager-Operations; and Owen Boe, Northwest Area Manager.

Assets We Operate



The **Westside Water Reclamation Facility** treats about 10 million gallons of wastewater each day and is designed to treat up to 25 million gallons of wastewater per day. It is the City's workhorse plant in that in addition to processing its own incoming solids, Westside also effectively handles the solids generated by the Marine Park Water Reclamation Facility some 5 miles away. Along with the Marine Park Plant it has consistently received treatment excellence awards from the State's Department of Ecology since 2000.

The **Marine Park Water Reclamation Facility** is the City of Vancouver's showcase treatment plant. It is currently designed at 16 million gallons per day and actually treating about 10 million gallons per day. It has received multiple architectural awards as well as Outstanding Treatment Plant Awards from the Washington State Department of Ecology. Closely linked to the Water Resource Education Center, it is visited by hundreds of groups each year from local schools to delegations from Russia, Japan, Australia and other countries. These visitors y are interested not just in the state-of-the-art processes controlled by Veolia Water staff but also in how they might incorporate a plant of this caliber into their communities.

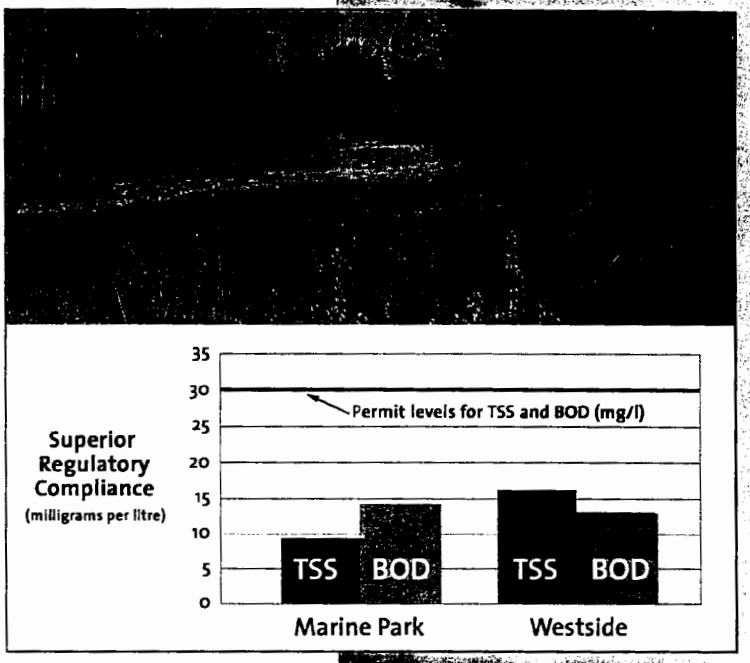
The **Industrial Pretreatment Lagoon** stabilizes food processing waste from Frito Lay, Great Western Malting and Northwest Packing with an influent flow of about 2.3 million gallons per day. Its discharge enters the Westside plant for continued treatment. Since no sanitary waste enters this lagoon, the solids are classed as a fertilizer. They accumulate in the last stage, and are pumped onto an adjacent 85 acres of waterfowl forage. Spring and Fall harvesting of the grasses during 2004 ultimately resulted in the beneficial use of more than 500 bales of hay.

The Results

1. Environmental excellence abounds in meeting permit levels, protecting public health and the environment, recycling solid materials and biosolids, and working with local industry. Stewardship and operational acumen is a must; the Marine Park and Westside facilities both have strict NPDES permits allowing 30 milligrams per litre (mg/l) of Total Suspended Solids and Biochemical Oxygen Demand (BOD organic matter).

In 2004, the Marine Park facility averaged 8 mg/l for solids and 15 mg/l for organics. The Westside facility, which manages a higher level of food and industrial wastes from local industry, averaged 16 mg/l for solids and 13 mg/l for organics. This record is emblematic of our partnership's excellence. Since 1995, the Marine Park facility has never exceeded our NPDES permit. Since 1978, the Westside facility has had no major NPDES violations.

During the wastewater treatment process, captured solid materials are processed in an on-site fluidized bed furnace. Very high temperatures produce an ash which is beneficially reused as a composting material. The public's quality of life is further addressed as potential air emissions are captured and eliminated using scrubbers while potential odors are controlled through a treatment tower.



Veolia Water treats food processing wastes from Frito Lay, Great Western Malting and Northwest Packing in a separate Industrial Pretreatment Lagoon. Since no sanitary waste enters this treatment process, the useful settled solids are collected annually and beneficially used as fertilizer for an adjacent 85-acre site. Two cuttings of mixed grasses occurred during 2004 resulting in a harvest of more than 500 bales of hay

2. Cost-effective excellence is delivered. The charge we keep is to manage assets at the most cost-effective level, as if they were our assets. The fact that Vancouver has world-class assets and yet very affordable rates is quite telling. Comparisons with other area communities, from Camas to Seattle, demonstrate the city's adept management and practices. We know that our partnership greatly contributes to this community strength.

***Results**, continued on page 7.*

AREA UTILITY BILL COMPARISONS

Agency	Water	Sewer	Stormwater	Solid Waste	Total
Camas	$17.30	$22.25	-	$28.29	$ 67.84
Eugene	$12.50	$22.01	$7.29	-	$ 41.80
Vancouver	**$18.10**	**$27.77**	**$5.44**	**$21.80**	**$ 73.11**
Bellevue	$23.04	$36.68	$6.96	$15.18	$ 81.86
Tacoma	$23.88	$41.13	$12.00	-	$ 77.01
Portland	$25.93	$53.06	$12.58	$21.50	$113.07
Seattle	$32.20	$65.80	$10.14	-	$108.14

Information and assumptions by Association of Washington Cities

PAGES 5 & 6 ATTACH AT END

- Freedom Walk
- Discovery Walk
- City River Walk
- Discovery Walk
- Pacific Northwest Clean Water Assoc.
- Local Cystic Fibrosis Walk-A-Thon
- Celebrate Freedom
- Selection Committee for George C. Marshall Leadership Awards
- Committee Member for Discovery Walk
- Member Chamber of Commerce
- Local Mentor for Boys Association
- ARC of Clark County—Disabled Adults
- Boy Scouts of America
- Campfire for Boys and Girls
- Onestop Neighborhood Association
- Dental & Diet Education for Local Youth
- Volunteer for Local Teen Center
- Contributions to the Tsunami that struck Asia
- Local Adopt-A-Family for Youth Camp
- Tours at the Marine Park Water Reclamation Facility
- Vancouver Artwalk
- KBOO & KOPB Public Radio
- Audubon Society
- Share House, Vancouver
- 6th Street Gallery Co-op
- March of Dimes
- City of Vancouver Fire Department
- Assistance in Developing Marine Park Explorer II
- Take Your Child To Work Day

***Results,** continued from page 4*

3. Community involvement runs deep. As for community involvement and outreach, our Mayor, the honorable Royce Pollard, has summed it up quite nicely. "Veolia Water Vancouver serves as an example of community involvement," says Mayor Pollard. Our staff takes the time and pride in supporting and contributing to numerous events and agencies every year. Vancouver is our community and we are Vancouver proud.

4. Safety, Security and Training programs reinforce our corporate commitments to employees and the community. Training programs for our employees are provided to ensure health, safety and security. As a result, each employee knows how their individual job actions affect each department and the environment.

Our commitment to safety tops the list, with only one lost-time accident occurring last year. As a result, our Lost-Time Injury Rate was 2.23 versus the industry average of 2.5 per Bureau of Labor Statistics standards. One accident is one too many and we strive for a completely safe work place. *Especially noteworthy is that only three lost-time accidents have occurred at our projects in the last 15 years—a remarkable record.*

Although the federal government does not require specific security preparations for wastewater treatment systems, we recognize the importance of Federal Public Health Security and Bioterrorism Preparedness and Response Act. We have developed security measures to include a review of secured fencing and gates, yard lighting, and accountability, protocol and monitoring of all visitors and contractors. Our emergency response plans include protection of staff, notification to local emergency response agencies, accountability of all persons, employee responsibilities and the coordination of all emergency activities.

Russ Watts, left, and Jack Brown install a backflow preventer.

Bettina Meadows uses an analytical balance to determine the parts per million (ppm) weight of solids.

Leroy Whitecotton (left) maintenance Planner Scheduler and Bill DuBay, Operator III are with the Westside Water Reclamation facility.

5. Asset management, sophisticated technologies and complex processes save the city money. Expert technicians enable this to occur. The city believes in doing things right and this core belief is echoed throughout our partnership, which focuses on high levels of automation and asset management with an emphasis on life-cycle costs. This approach rejects a "when it breaks, we'll fix it" attitude commonly reflected in many municipal programs that are costly to citizens.

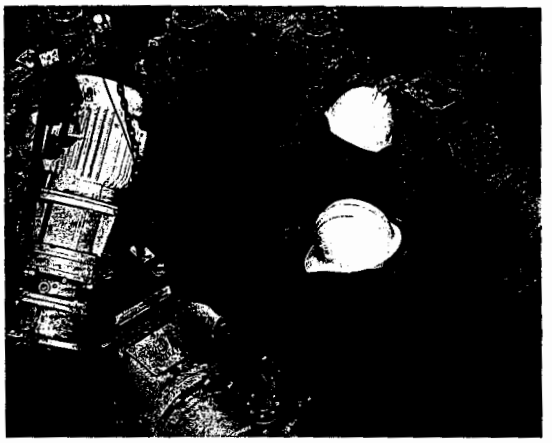
In a word or two, Vancouver's assets are *large and complex.* Good operators put good programs into place that extend the life of these assets and enable further investment. Standard maintenance practices require a large inventory of spare parts (an expensive requirement!) and are often replaced on an emergency basis (an expensive practice!). Standard maintenance practices also typically include low levels of automation and large staffs (again, an expensive requirement).

Instead, we employ high levels of automation to track our processes and remotely manage pump stations. Advanced predictive maintenance practices such as vibration analysis, thermography and precision laser alignment are also utilized. With such approaches in place, "unplanned" maintenance is minimized, resulting in a significant savings to the city.

John Brown, Maintenance Supervisor, uses the Shock Pulse Meter to predict the health of the bearings.

Just one example of our maintenance practices includes the Shock Pulse Meter (SPM), a portable instrument that enables a prediction of the "health" of bearings, has now been in use for the past two years. Due to our expertise in the use of the SPM, a team of NASA officials visited our staff last year to gain a first-hand understanding of how this instrument works so they might apply it to their own bearing manufacturing process for the Shuttle Spacecraft.

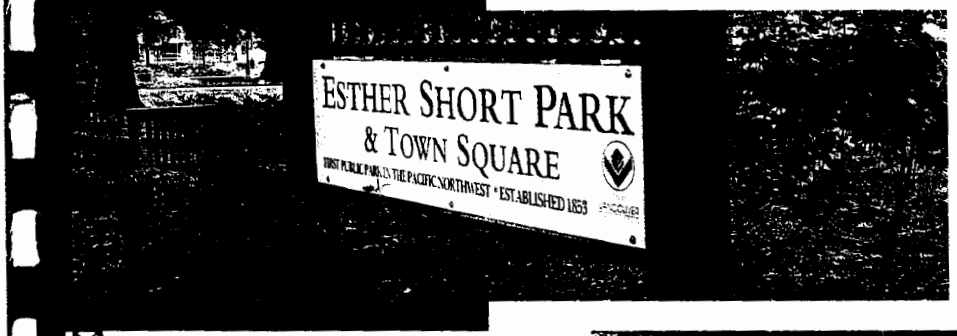
Controlling the processes within our state-of-the-art wastewater treatment plant requires a high level of experience and understanding in the environmental sciences. We sit at the table with the City and its engineers to reach conclusions on safe, effective management and operations of the City's investment. The result of these steps is important—no overflows, smooth transitions in process control, a reduction in spare parts inventories, and top-of-the-line treatment facilities recognized year after year by the State of Washington's Department of Ecology for "Outstanding Treatment."

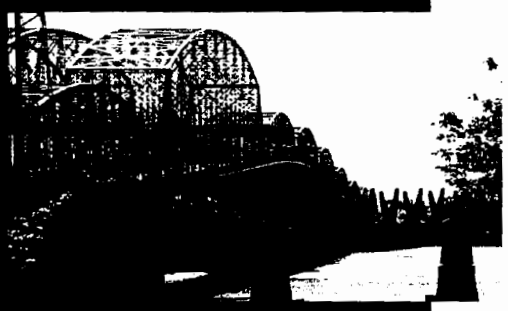


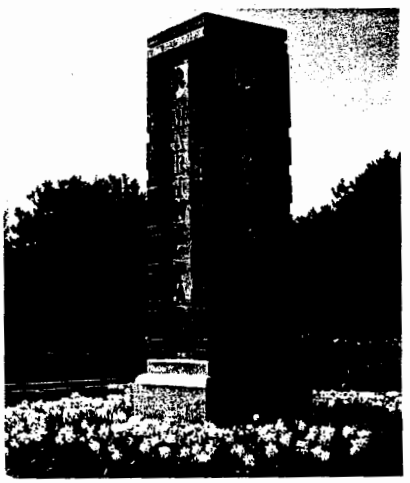
6. Career advancement and training helps employees be the most they can be. Training for personnel improvement is standard and we invest in staffing and training instrumentation techs and SCADA developers that are in-house resources.

7. Company-wide resources support and enhance the Vancouver operation. For resources, we are able to tap into our company's extensive and expert departments all across the country. This includes Operations & Maintenance, Technical Services, Environmental, Health Safety & Security, Laboratory Quality Control, Human Resources and others. Experts in these disciplines help challenge skill sets and solve issues.

Veolia Water North America is the nation's leading water services company, serving more than 600 communities, ranging from large cities (such as Atlanta, Indianapolis and the Tampa Bay area) to smaller communities (such as Leominster, Mass. and Burlingame, Calif.). The company is also expert at managing water and wastewater systems for America's leading manufacturing companies.







Who We Are

Veolia Water North America is the leading provider of comprehensive water and wastewater services to municipal and industrial customers, providing services to approximately 14 million people in more than 600 communities. We operate the nation's largest public-private partnership for water services in Indianapolis, serving approximately 1.1 million people, and the country's very first partnership, established in 1972 with Burlingame, Calif., an ongoing customer now for more than 30 years.

Formerly known as USFilter Operating Services, in early 2004, we proudly adopted the name of our parent company. The company is part of Veolia Water, the Water Division of Veolia Environment (NYSE:VE and Paris Bourse: VIE), the largest environmental services company in the world with more than 252,000 employees in more than 80 countries and annual revenues of more than $33.6 billion. Visit the North American web site at www.veoliawaterna.com and the global web site at www.veoliawater.com.

ASSETS WE MANAGE

- Water treatment facilities and distribution systems
- Wastewater treatment facilities and collection systems
- Reclamation and effluent reuse facilities and distribution systems
- Residuals management (sludge/biosolids/compost) and marketing
- Combined sewer and sanitary sewer systems
- Groundwater remediation sites
- All related above-ground and underground assets (plants, pumps, pipes, hydrants, meters, tanks, towers, reservoirs, wells, etc.)
- Call centers and customer service centers

WHAT WE DO

- Operations and maintenance
- Design-build-operate
- Customer service
- Asset management and capital improvements
- Technology and equipment
- Master planning
- Environmental health, safety and security programs
- Industrial pretreatment programs
- Financing

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WATER PARTNERSHIP COUNCIL MEMBER

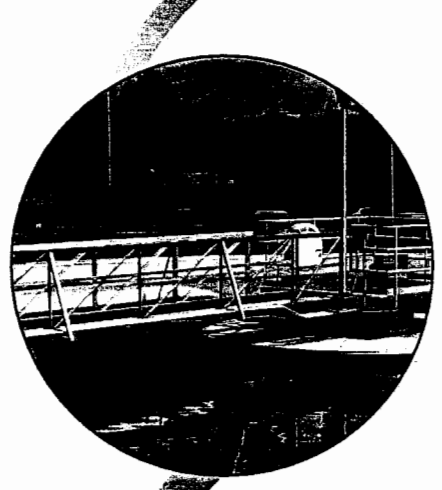
VEOLIA Water

The Wastewater Treatment Plant In Today's World

Some 15 to 20 years ago, an individual could walk into the office of a wastewater treatment plant and be hired on the spot. Not so today. At a minimum, most positions require an associate degree in wastewater technology. Many positions require advanced degrees. Operators and technical specialists are certified in their disciplines.

This quick "walk through" of the Vancouver plants outlines some of the technological processes involved and the expertise required to operate and manage such facilities.

Headworks/Screening. Domestic and industrial wastewater enters the plant's headworks. Here, grit and various objects (sticks, objects, materials) are blocked and removed to help protect processes further on and to reduce the load. These objects and screenings are transported to the local landfill.

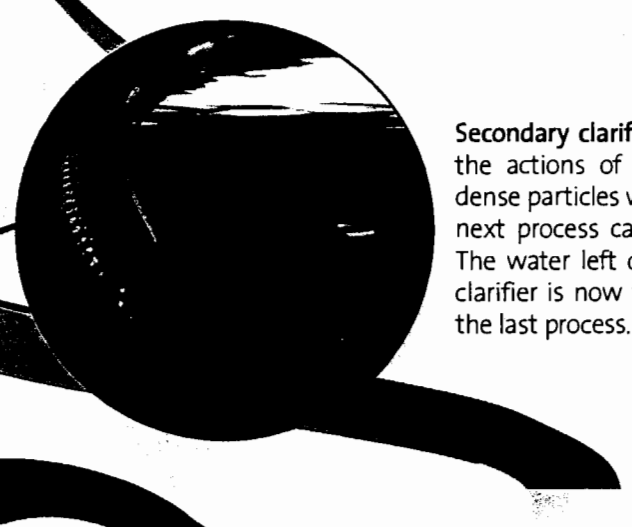


Primary clarification. The wastewater is next allowed to physically settle in primary clarifiers where about 75% of the solid materials (dirt, grit, etc) and 35% of the organic material (substances containing carbon compounds usually of animal or vegetative origin) is removed.

Aeration. The cleaner water remaining now flows to the aeration basins where beneficial microscopic organisms feed on the organic matter and reproduce. During this process, air is added to foster this biological activity.

Discharge. The resulting water is then released into the Columbia River in a manner that is typically far superior to state and EPA permit requirements. For comparison, this photograph documents the incoming wastewater (left), the city's drinking water (middle), and treated wastewater (right).

Disinfection. This last stage disinfects the water using ultraviolet light. This is the final step in the 10-12 hour treatment process and will kill any harmful pathogens.



Secondary clarification. During aeration, the actions of the organisms produce dense particles which slowly settle in the next process called secondary clarifiers. The water left on top of the secondary clarifier is now very clean and ready for the last process.

Laboratory operations. Accurate data is critical to ensuring optimum efficiency at the plant level and ultimately protection of the environment. Our lab experts are highly trained in both analytical technique and quality control. As the state's first laboratory to be certified by the Department of Ecology, our technicians provide us with the benefit of accurate, timely reporting and monitoring of plant conditions. We processed over 15,000 samples in 2004 from the Westside plant, the Marine Park facility, the Industrial Pretreatment Lagoon and other locations in the area.

Computers monitor all the processes in the treatment plant but it takes the knowledge and experience of staff to evaluate all data and make the right decisions to ensure all processes proceed in the right direction. Much of the decision making depends on analyses made in the on-site laboratory. Monitoring and appropriate process adjustments and all required equipment maintenance occurs on a 24/7 basis. Whether it's managing pumps, taking and testing samples or assessing programmable logic controllers (PLC's) for predictive and preventive maintenance, all work is performed by skilled technicians operating with public and staff safety in mind. In all we do, we pursue the best interests of our Vancouver neighbors and fellow citizens.

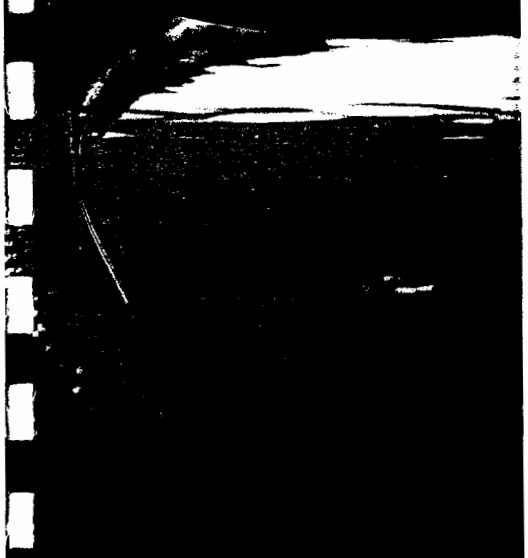
VEOLIA
Water

Bringing Value-Added Services to Jupiter Island and Hobe Sound

- Risk Management
- Water Experts
- Emergency Assistance
- Technical and Capital Support

VEOLIA
Environment

Assets We Manage for You

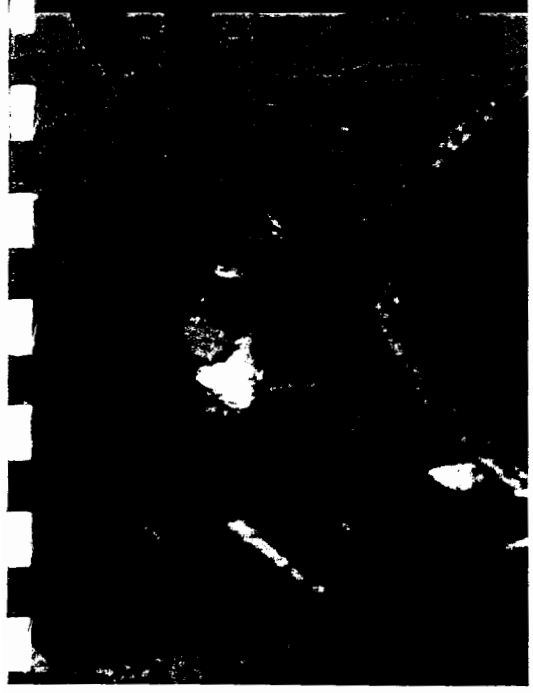


Facilities

- 1.2-MGD Marloff Activated Sludge WWTP
- Wastewater Collection System (60 miles)
- 94 Pump Stations
- 2.2 MGD Ground WTP
- 3.6 MGD Ground WTP
- 2.0 MGD RO Water Treatment Plant
- Water Distribution System (75 miles)
- 22 Aquifer Wells (3.5 MGD)

Scope of Services

- Operate/Maintain/Manage
- Meter Reading
- Meter Replacement Program
- Billing/Collection
- Customer Service
- Biosolids Disposal - 500 dtpy
- Effluent Reuse



Veolia Water—A Proud and Trusted Water Partner

In 1998, Veolia Water North America (then USFilter Operating Services) began our partnership with South Martin Regional Utilities (SMRU). Since that time, we have been a trusted partner, operating the utilities' entire system, including meter reading, billing and collection services, as well as the operation and maintenance of two water treatment facilities and one wastewater treatment facility.

Back in 1998, when the communities decided to ensure a long-term supply of water and water-related services by acquiring two separate utility systems, Veolia Water was selected as SMRU's partner because of our track record for managing related operations and services. Jupiter Island and Hobe Sound have gained much more than just a contract operator for their utility services—the communities have gained a true partner in Veolia Water. Take for example:

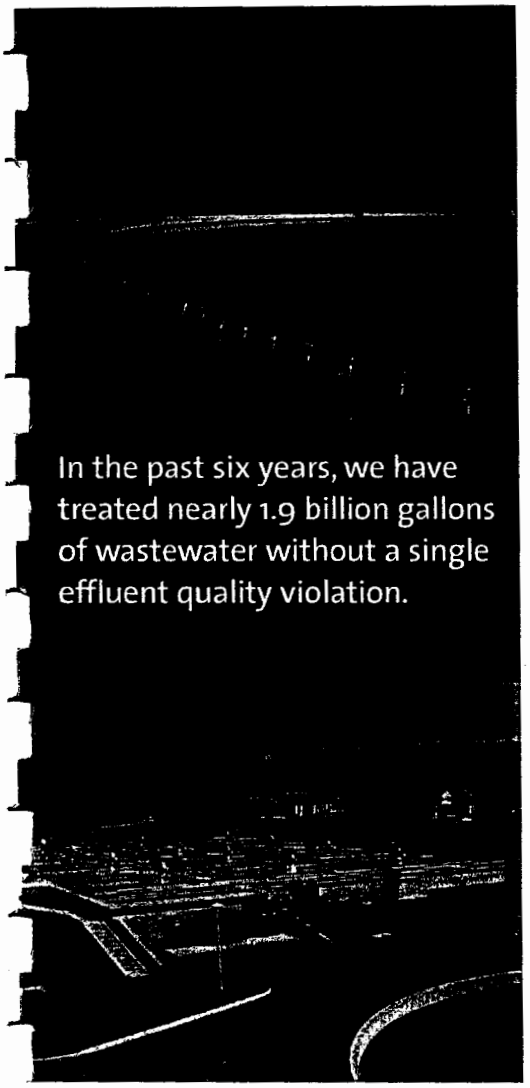
Risk Management. Veolia Water North America has assumed full responsibility for environmental compliance within the design capability of your facilities. Our employees are required to stay up-to-date on all applicable regulations, allowing you to feel at ease for not having to navigate the complicated and ever-changing environmental policies and regulations. Additionally, we have and can offer solutions—such as installing cutting-edge technology—to make your facilities operate within environmental guidelines. Also, we have assumed the full risk for the safety of the employees at the facility—in fact, we have gone 6 years without one single lost-time incident.

Global resources at your finger tips. With more than 3,000 employees in the United States and 77,000 around the world, SMRU has access to Veolia Water's experts in every water issue. In fact, since our partnership began, Veolia Water employees from around the country have spent close to 2,000 hours supporting the successful operations of your utilities—that's 2,000 man hours of outside value-added resources.

Emergency relief. More recently, Veolia Water employees from across the United States rushed to Jupiter Island after it was hit by both Hurricane Frances and Hurricane Jeanne. Thanks to the diligent work of Veolia Water employees, all systems stayed operational, plus the community benefited from the generators brought down from some of our projects in the southern region.

Technical and capital program management. Veolia Water has successfully managed more than $1.5 million in capital improvements at the utility. To name a few, the company improved the effluent quality at the wastewater plant—as well as electrical costs—by installing a fine bubble diffuser. Additionally, the company sent in some of its experts in reverse osmosis systems to assist with training and start-up of the utility's new Reverse Osmosis (RO) plant.

We Manage Your Environmental Compliance, Safety, and Security Risks



We are proud to have served as your risk management and mitigation partner over the years for environmental compliance, safety and security. We have a proven track record in environmental compliance and employee training and safety programs, as well as security of SMRU's water and wastewater system assets. Veolia Water has experts in all of these fields and strong experience in delivering these programs. Your regulatory compliance has been a fundamental risk management benefit since we entered into our partnership. Permit compliance has been continuously achieved for both the water and wastewater facilities, even though both systems have experienced increased flows and loads from continued community growth within the utility service area of SMRU.

In the past six years, we have treated nearly 1.9 billion gallons of wastewater without a single effluent quality violation. We are responsible for approximately 875 regulatory compliance samples per year for the wastewater system. Only one Notice of Violation has been issued in this period of time, for failure to report a discharge to the Rapid Infiltration Basin System that caused an odor, for which we took full responsibility and resolved.

"...zero lost-time accidents or incidents in the past six years."

Since 1998, we have generated almost 7.5 billion gallons of drinking water, with only two regulatory violations for exceeding maximum concentration limits that required public notification.

The safety and security of the water treatment facilities have been demonstrated by compliance with more than 2,000 bacteriological tests each year of the drinking water produced by Veolia Water. Your environmental risks are managed and mitigated by our guarantees of service.

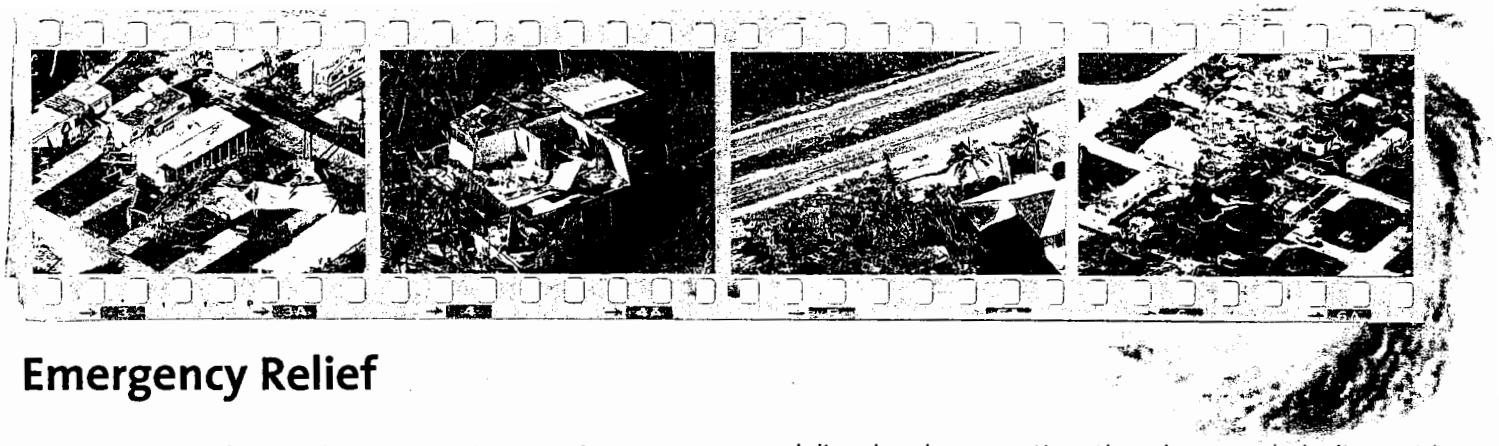
Our training programs for our employees to ensure safety and security in the work environment are unsurpassed and time-tested. As a result of Veolia Water's commitment to creating a health and safety conscious culture, we have a perfect safety record—zero lost-time accidents or incidents in the past six years. Each employee knows how their individual job actions affect utility operations and impact the environment. We understand the risk of having the ultimate responsibility for training and plant environmental compliance.

SMRU's risk for its water and wastewater system assets is significantly mitigated by our pledge to achieve and maintain compliance with all applicable federal, state and local environmental laws and regulations, and to do so in a safe and secure work environment. Our service objective has been and will continue to be 100% compliance with zero lost-time accidents. Thus, your risks are carefully managed so as to minimize potential impacts on costs, service rates and liabilities.

Global resources at your finger tips

Close to 2,000 man-hours have been dedicated, outside of the scope of our contract, to ensure successful operations of your facilities. Below highlights who and why these individuals were called.

Name	Title/Position	Purpose/Function	Man-Hours Provided
Melinda McElligott	South Business Center (SBC) Human Resource Mananger	Management training, staff training, transition support services, benefits training and support services	160
Jay Ritchey	SBC Environmental, Health & Safety Manager	Continual project support for all compliance, health and safety matters; Annual EH&S audit; Fleet Safety Audit; monthly project safety and compliance review; ongoing safety training	240
Don Phillips	Rolling Oaks Project Manager	Review of Customer Services policies and procedures	36
Don Patterson	Palmetto/Sarasota Project Manager	Ongoing support for WWTP operations	45
Van Aboush	SBC Business Manager (former)	Ongoing accounting/financial support for all AR/AP activities	110
Preston Cloke	SBC Business Manager (present)	Ongoing accounting/financial support for all AR/AP activities	60
J.R. Parrish	Hoover, AL, Project Manager	Computerized Maintenance Management Training, Equipment Maintenance Training, Predictive Maintenance Equipment Analysis	210
Pam London	SBC Laboratory QA/QC Manager Tampa Bay Water	Lab QA/QC annual audit, lab training, compliance support services	53
Dan Ryan	V.P. of Environmental, Health & Safety	On-site EH&S audit, Site Security audit	40
Chuck Brence, P.E.	VWNA Sr. Design Engineer (former)	Engineering services at the WWTP for the fine bubble diffuser project, WWTP evaluation	120
Bruce Ratzlow, P.E.	Envirex Design Engineer (former)	Fine bubble diffuser design	35
Harbans Kohli, P.E.	VWNA Sr. Technical Engineer (former)	RO Treatment Plant technical advisor	30
Alan Potter, P.E.	VWNA Sr. Design Engineer (former)	Odor control evaluation, WWTP evaluation	65
Glenn Dunkelburger, P.E.	VWNA SBC Engineering Director (former)	Coordinated all capital project engineering efforts for VWNAOS	78
Mike McCary	Sr. Operator, Hoover, AL, Project	OPS Win computerized operations program training and support	80
Brian Masher	Sr. WWTP Operator, West Melbourne Project	Provided WWTP operator services, training and support	80
John Wikel	Sr. WTP Operator, Tampa Bay Water Project	Provided RO water treatment plant startup operations, training and support services	60
Greg May	SBC Sr. Project Manager	Coordinated all off-site hurricane recovery efforts, and provided on-site recovery coordination and relief efforts	70
Jeff Greer	Wurtland, KY, Project Manager	Coordinated purchase and delivery of generators and fuel for hurricane recovery	40
TJ Meredith	CDR Project, Elizabethtown, KY Project Manager	Coordinated manpower and equipment delivery for hurricane recovery	40
Scott Hall	Sr. Equipment Maintenance Technician Pikeville, KY	Provided on-site hurricane recovery support	100
Matt Priddy	WTP/WWTP Operator, CDR Project, Elizabethtown, KY	Provided on-site hurricane recovery support	70
Carlos Stevens	Lift Station Maintenance Technician Wurtland, KY	Provided on-site hurricane recovery support	70
Melvin Carman	Hardinsburg, KY	Provided on-site hurricane recovery support	70



Emergency Relief

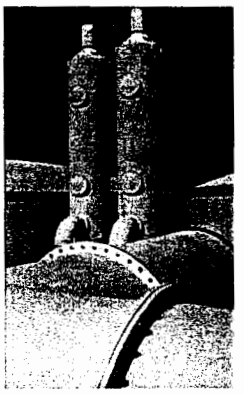
Earlier this year, for four long hours, the eye of Hurricane Frances lingered over Jupiter Island, blowing off roofs and destroying property. For four long days, the staff, families and emergency contractors were sequestered inside the three water and wastewater treatment facilities. The hurricane left a wake of downed power and telephone lines, damaged water mains, uprooted trees and a rubble of buildings—including the homes of three Veolia Water Jupiter Island employees.

The Jupiter Island facilities held up, but the amount of equipment and work needed to keep operations going was enormous. Personnel from our Kentucky projects in Elizabethtown (CDR), Wurtland, Hardinsburg and Pikeville came to Jupiter Island's aid. These employees worked around the clock, cleaning up debris; moving generators; identifying, shutting off and fixing leaking water meters and line breaks; operating the plants and dealing with administrative issues. Two of Veolia Water's employees from Pikeville, Ky., even drove for 20 straight hours to bring an additional generator to ensure continuous power at the plants and water services to the community.

When Hurricane Jeanne ripped roofs off of buildings and picked up debris still stacked on roadsides from earlier hurricanes, once more, the Veolia Water Jupiter Island team took refuge at the water and wastewater treatment plants and began the clean-up and recovery mode again.

The team's efforts paid off. Throughout the storms, the Jupiter Island project successfully maintained water pressure and only a few of the 94 pump stations had minor overflows. Overall, Veolia Water performed far better than neighboring communities, many of which issued boil water alerts and experienced major pump station overflows.

Technical Expertise and Capital Projects Support of Numerous Improvements



As SMRU's service area and assets have grown and changed over the years, we have supported many of these improvements by providing technical expertise and capital program management services. A partnership with Veolia Water has meant that SMRU has had access to a full-scope of municipal services from the world leader in environmental services. As highlighted below, we have provided better technology and needed improvements at the wastewater plant. These technology and equipment solutions have resulted in elevated process control, additional process flexibility, continuous effluent quality compliance and improved asset performance, which all has managed and minimized the life-cycle costs of your wastewater plant. We have demonstrated our priority in protecting and improving your wastewater treatment assets to ensure technical performance, regulatory compliance and environmental protection. In addition to the previously mentioned initiatives, others include:

- Installation of the fine bubble diffusers, rotating drum thickener, mixers for the surge tanks, influent flow meter, chemical odor control system, new blower, radio telemetry system, bar screen and VFD waste activated sludge pumps
- Upgrades to the reuse pump system and the complete rehabilitation of 3 clarifiers
- The replacement of digester diffusers
- The complete emptying and cleaning of all 4 wastewater treatment trains

Additionally, in 2003, we successfully commissioned and started up the Reverse Osmosis (RO) facility, which is a state-of-the-art membrane technology system for providing even higher quality and better-tasting water. As your O&M partner, we utilized in-house engineering and operations expertise with regional personnel. RO systems are the fastest growing state-of-the-art technology application for desalination processes, including treatment of brackish groundwater and surficial water, seawater, and repurification of secondary wastewater. Veolia Water operates more than 10% of the world's installed desalination systems and has demonstrated technology support and O&M expertise in municipal RO systems, including one of the largest seawater RO installations in the world.

Who We Are

Veolia Water North America is the leading provider of comprehensive water and wastewater services to municipal and industrial customers, providing services to approximately 14 million people in more than 600 communities. We operate the nation's largest public-private partnership for water services, in Indianapolis, serving approximately 1.1 million people, and the country's very first partnership, established in 1972 with Burlingame, Calif., an ongoing customer now for more than 30 years.

Formerly known as USFilter Operating Services, in early 2004, we proudly adopted the name of our parent company. The company is part of Veolia Water, the No. 1 water company in the world, serving more than 110 million customers. Veolia Water is a subsidiary of Veolia Environment, the largest environmental services company in the world, with more than 295,000 employees in about 80 countries and annual revenues of more than $28.6 billion.

ASSETS WE MANAGE

- Water treatment facilities and distribution systems
- Wastewater treatment facilities and collection systems
- Reclamation and effluent reuse facilities and distribution systems
- Residuals management (sludge/biosolids/compost) and marketing
- Combined sewer and sanitary sewer systems
- Groundwater remediation sites
- All related aboveground and underground assets (plants, pumps, pipes, hydrants, meters, tanks, towers, reservoirs, wells, etc.)
- Call centers and customer service centers

WHAT WE DO

- Operations and maintenance
- Design-build-operate
- Customer service
- Asset management and capital improvements
- Technology and equipment
- Master planning
- Environmental, safety and security programs
- Industrial pretreatment programs
- Financing

Veolia Water North America
14950 Heathrow Forest Parkway
Suite 200
Houston, Texas 77032
800.522.4774
www.veoliawaterna.com

WATER PARTNERSHIP COUNCIL MEMBER

VEOLIA Water

Appendix D

Part Four

Great Miami River Cleanup (Dayton, Ohio) - Brochure

VEOLIA Water

A special "Thank You" to the following for their support of the 2002 cleanup:

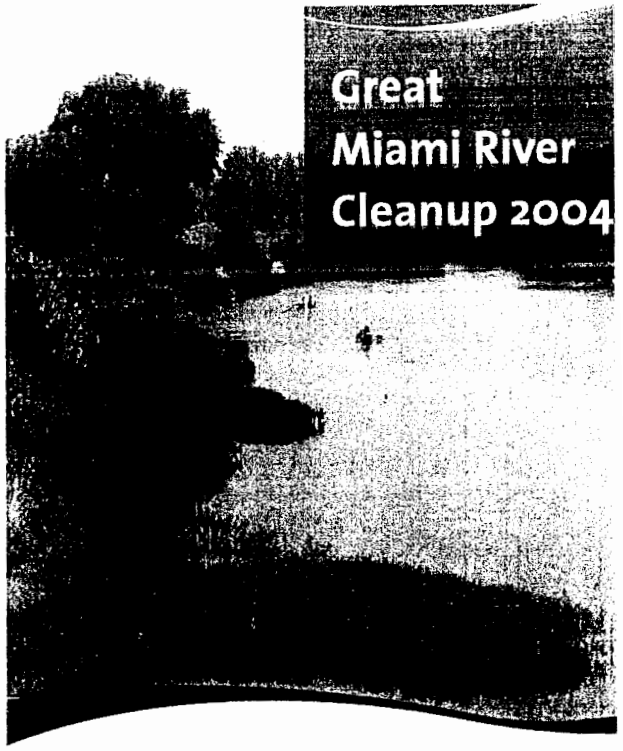
- Beau Townsend Ford
- Advanced Treatment Sciences
- City of Franklin
- City of Huber Heights
- Miami County Park District
- Ohio Department of Natural Resources
- City of Tipp City
- City of Vandalia
- Tri Cities North Regional Wastewater Authority

Project Coordinator
(937) 233-7083 x10

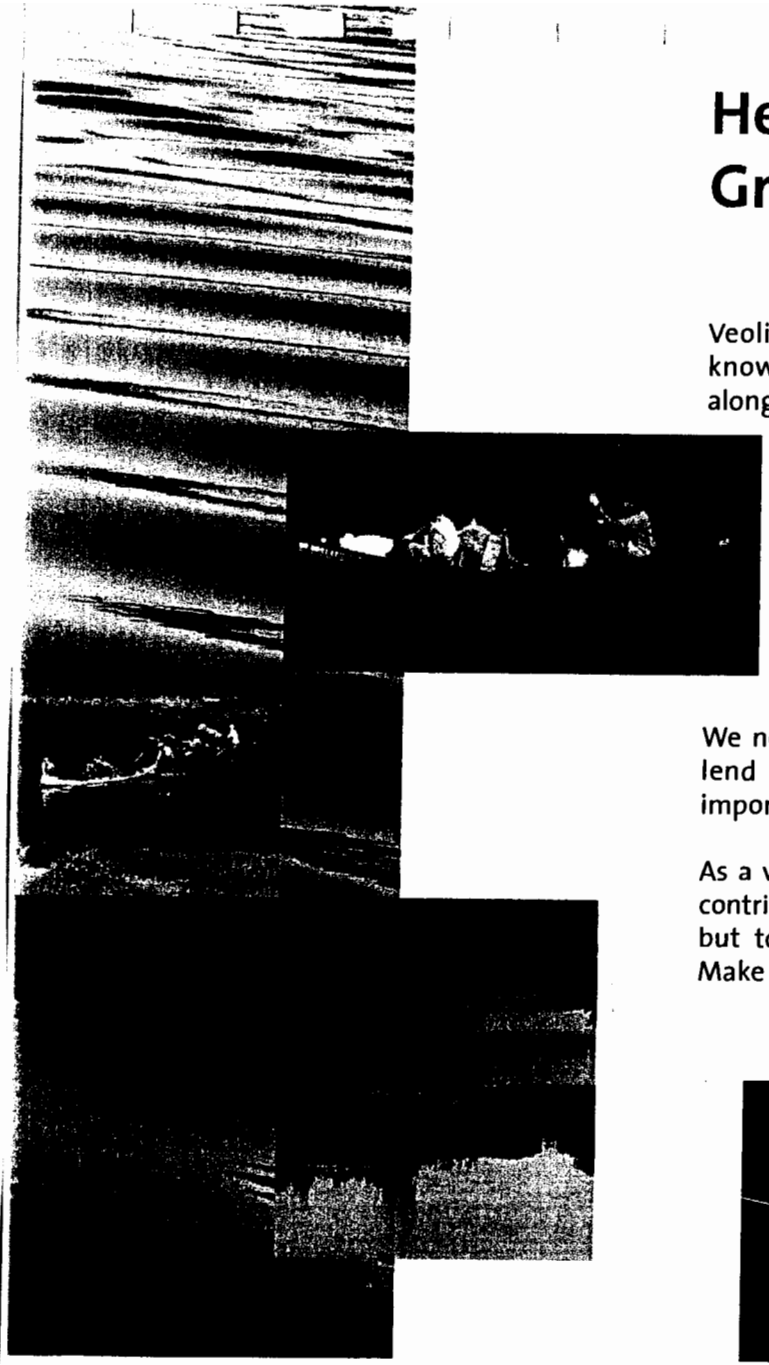
VEOLIA Water

Veolia Water North America
Tri Cities North Regional Wastewater Authority
3777 Old Needmore Road
Dayton, Ohio 45424

www.veoliawaterna.com



VEOLIA Water



Help Make the 16th Annual Great Miami River Cleanup a Success

Veolia Water North America (formerly known as USFilter Operating Services), along with the Miami Conservancy District, is once again sponsoring the Great Miami River Cleanup.

Over the past 15 years, the Great Miami River Clean up has been a huge success – removing more than 150 tons of trash and debris from the river!

We need your help again this year. Please lend a hand so we can maintain our important natural resource.

As a volunteer, you'll be making a positive contribution – not only to your community but to the environment as well. Join us! Make new friends and have some fun!

Great Miami River Cleanup 2004

We'll clean approximately 30 miles of river bank through the course of four canoe trips. Four trips will leave simultaneously and extend from Piqua to the North Regional Wastewater Treatment Plant on Needmore Road. A fifth trip will cover the section of the river beginning at the Franklin Wastewater Treatment Plant.

About Veolia Water North America

We are the leading provider of comprehensive water and wastewater services to municipal and industrial customers, providing services to approximately 14 million people in more than 600 communities.

In the Miami Valley, Veolia Water operates four water and wastewater facilities – the Springboro Water and Wastewater Treatment Plants and the North Regional and Franklin Wastewater Treatment Plants.

About the Miami Conservancy District

Formed in 1915, the Miami Conservancy District protects lives and property through a comprehensive flood-protection system, preserves the quality and quantity of water through monitoring and education and promotes the enjoyment of our waterways through recreation. The District leads the

Appendix E

Appendix E
Part One
Sample O&M Services Agreement

VEOLIA Water

Draft Agreement For
Operations, Maintenance and Management Services

THIS AGREEMENT is entered into this _____ day of _____2005, by and between

City of Nashua, New Hampshire, with its mailing address at _____ (hereinafter "OWNER")

and

Veolia Water North America - Northeast, LLC, with its principal address at 200 Cordwainer Drive, Suite 202, Norwell, Massachusetts, 02061 (hereinafter "VWNA" or "Company").

WHEREAS, OWNER owns and provides for the operation of a water system, including maintenance, repair, expansion administration, billing, collection, customer service and permitting functions; and,

WHEREAS, OWNER desires to employ VWNA to perform the operation, maintenance, repair and select customer service functions for the compensation provided for herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements hereinafter set forth, OWNER and VWNA agree as follows:

1. General

1.1 Definitions of words and phrases used in this Agreement and the attachments are contained in Appendix A.

1.2 All land, buildings, facilities, easements, licenses, rights-of-way, equipment and vehicles presently or hereinafter acquired or owned by OWNER shall remain the exclusive property of OWNER unless specifically provided for otherwise in this Agreement.

1.3 This Agreement shall be governed by and interpreted in accordance with the laws of the State of New Hampshire.

1.4 This Agreement shall be binding upon the successors and assigns of each of the parties, but neither party shall assign this Agreement without the prior written consent of the other party. Consent shall not be unreasonably withheld. Notwithstanding anything to the contrary, Owner is expressly permitted to assign this Agreement to the Merrimack Valley Regional Water District.

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1.5 All notices shall be in writing and transmitted to the party's address stated above. All notices shall be deemed given when delivered, if delivered personally or by courier mail service, i.e., Federal Express or Airborne Express, delivered after such notice has been deposited in the United States mail postage prepaid, if mailed certified or registered U.S. mail, return receipt requested; or received by the party for which notice is intended if given in any other manner.

1.6 This Agreement, including Appendices A through F, is the entire Agreement between the parties. This Agreement may be modified only by written agreement signed by both parties. Wherever used, the terms "VWNA" and "OWNER" shall include the respective officers, agents, directors, elected or appointed officials and employees and, where appropriate, subcontractors or anyone acting on their behalf.

1.7 If any term, provision, covenant or condition of this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

1.8 It is understood that the relationship of VWNA to the OWNER is that of independent contractor. The services provided under this Agreement are of a professional nature and shall be performed in accordance with good and accepted industry practices for contract operators similarly situated. However, such services shall not be considered engineering services and nothing herein is intended to imply that VWNA is to supply professional engineering services to OWNER unless specifically stated in this Agreement to the contrary.

1.9 If any litigation is necessary to enforce the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees which are directly attributed to such litigation in addition to any other relief to which it may be entitled.

1.10 Nothing in this Agreement shall be construed to create in any third party or in favor of any third party any right(s), license(s), power(s) or privilege(s).

1.11 Prior to the commencement of work under this Agreement, each party shall designate in writing an employee or other representative of the designating party who shall have full authority to approve changes in the Scope of Work and compensation therefore, execute written Change Orders reflecting such changes, render decisions promptly, and furnish information expeditiously to the other party when necessary. The Owner's designated representative will also serve as the point of contact for the coordination of VWNA's activities with other OWNER organizations.

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1.12 This Agreement shall be interpreted in accordance with its plain meaning and not strictly for or against either party hereto.

2. VWNA's Services – General

2.1 VWNA shall provide a sufficient number of certified and qualified personnel, including management, administrative, operational, technical, laboratory and clerical, who meet relevant State of New Hampshire requirements and certifications regarding water treatment operations, maintenance and management and are capable and demonstrate experience necessary to operate the Project covered by this Agreement. VWNA will provide a Project Manager whose services will be personal to this Agreement and whose replacement will be subject to OWNER's consent; such consent not to be unreasonably withheld.

2.2 VWNA shall provide ongoing training and education for appropriate personnel in all necessary areas of modern water process control, maintenance, safety, and supervisory skills.

2.3 VWNA shall utilize computerized programs for maintenance, process control, cost accounting, customer service, field operations and laboratory Quality Assurance/Quality Control.

2.4 VWNA shall operate, maintain and/or monitor the Project and the Facility on a 24-hour per day, seven day per week schedule, as described in Articles 3, 4 5 and 6 below.

2.6 Visits may be made at a reasonable time by OWNER's agents so designated by the OWNER's representative. Keys for the Facility shall be provided to OWNER by VWNA for such visits. All visitors to the Facility shall comply with VWNA's operating and safety procedures.

2.7 VWNA will implement and maintain an employee safety program in compliance with applicable laws, rules and regulations.

2.8 As required by law or permit, VWNA will prepare necessary reports and submit them to OWNER for signature and transmittal to appropriate authorities.

2.9 VWNA will provide laboratory testing and sampling presently required by plant performance portions of the Clean Water Act, the Safe Drinking Water Act, and/or any federal, state or local rules and regulations, statutes or ordinances, permit or license requirements.

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2.10 VWNA shall provide OWNER with a full accounting of all billings at intervals and in sufficient detail as may be determined by OWNER, and assist OWNER in the preparation of annual operating budgets.

2.11 VWNA shall maintain all of the records generated by VWNA or the OWNER related to the Project. VWNA shall maintain the originals of all such records in the physical custody of the OWNER. Where records are maintained electronically, records shall be backed up to the OWNER's data processing facilities daily.

2.12 VWNA shall incur all costs related to the provision of the Services, except those costs incurred by the Owner, as specified in Article 7.

3. VWNA's Scope of Services – Transition Services

3.1 Within fifteen (15) days after the Service Commencement Date, VWNA shall submit a preliminary update to the Emergency Response Plan previously maintained by the former operator of the Facility. Within one-hundred and eighty (180) days after the Service Commencement Date, VWNA shall completely review and update the Vulnerability Assessment and the Emergency Response Plan and report to the OWNER on the completeness and appropriateness of these programs and any measures that were not implemented prior to the Service Commencement Date.

3.2 Within thirty (30) days after the Service Commencement Date, VWNA will provide a physical inventory of the OWNER's parts, tools, vehicles and equipment in use at the Facility and a general statement as to the condition of each vehicle or piece of equipment.

3.3 Within thirty (30) days after the Service Commencement Date, VWNA will provide OWNER with a physical inventory of chemicals and other consumables on hand at the Facility. VWNA will provide OWNER with the same quantity of chemicals or equivalent upon termination of this Agreement.

3.4 Within ninety (90) days after the Service Commencement Date, VWNA shall submit a report to the OWNER describing available automatic meter reading ("AMR") systems, a cost benefit analysis of the alternatives and a recommendation.

3.5 Within one-hundred and eighty (180) days after the Service Commencement Date, VWNA will provide a physical inventory of the OWNER's Facility and a general statement as to the condition of the Facility. If required, VWNA will make recommendations to OWNER regarding the need, if any, for OWNER to rehabilitate, expand or modify the Facility to comply with governmental safety regulations applicable to VWNA's operations hereunder and federal regulations promulgated pursuant to the Americans With Disability Act ("ADA"). Nothing herein shall be construed to place upon VWNA a duty to find and report violations

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of either the safety laws or the ADA at the Facility. According to these recommendations, VWNA and the OWNER shall agree on a Priority Upgrading Works Program, to be implemented by the OWNER within an agreed schedule. For the avoidance of doubt, VWNA shall be relieved from any performance obligations when default of performance is caused by the non implementation of the Priority Upgrading Works Program. Until such time as OWNER completes the Priority Upgrading Works Program, OWNER shall reimburse VWNA any penalties or fines paid because of the insufficient condition of the Facility and VWNA shall operate and maintain the Facility on a best efforts basis.

3.6 Within eighteen (18) months after the Service Commencement Date, VWNA shall provide OWNER with a listing of recommended capital improvements that VWNA believes will be required for the Facility. VWNA and OWNER will negotiate the Capital Improvement Program to be implemented by OWNER, and the schedule of the Capital Improvement Program.

3.7 Within eighteen (18) months after the Service Commencement Date, VWNA shall submit a report to the OWNER on measures that can be implemented to conserve water and water resources within the Facility.

4. VWNA's Scope of Services - Operation and Management of Facility

4.1 This Article shall apply to VWNA's operation and management services for the Facility. The Facility is described in Appendix B.

4.2 Within the design capacity and capabilities of the treatment plant, and subject to the provision of Acceptable Raw Water, VWNA will manage and operate the treatment plant so that finished water produced from the plant meets the requirements specified in Appendix C. When Raw Water does not comply with the Raw Water Specifications of Appendix C, VWNA shall manage and operate the treatment plant on a best effort basis. And, if required, VWNA and OWNER shall negotiate in good faith an adjustment to this Agreement (and a fair compensation for VWNA, if required) in order to continue to produce finished water in accordance with the requirements set forth in Appendix C.

4.3 VWNA will operate and maintain the water distribution system and appurtenances as more fully described in Appendix D. VWNA's responsibility for the water distribution system shall end at the customer's water meter, or where no water meter exists, at the customer's property line. VWNA shall not be responsible for completing any new service taps unless OWNER agrees to pay for such service as a Change in Scope hereunder.

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5. VWNA's Scope of Services – Maintenance and Capital Projects

5.1 Preventive and Predictive Maintenance shall be implemented and paid by VWNA. Unplanned Maintenance shall be implemented by VWNA and paid by OWNER Capital Projects services shall be implemented and paid by OWNER.

5.2 VWNA shall perform all Preventive and Predictive Maintenance for the Facility. VWNA shall bear all costs related to Preventative and Predictive Maintenance of the Facility.

5.3 VWNA shall provide the OWNER with full documentation that Preventive and Predictive Maintenance is being performed on OWNER's owned equipment at intervals and in sufficient detail as may be determined by the OWNER. Such a maintenance program must include documentation of all Preventive and Predictive Maintenance and a spare parts inventory.

5.4 VWNA shall be responsible for maintaining all manufacturers' warranties on new equipment purchased by OWNER and assist OWNER in enforcing existing equipment warranties and guarantees.

5.5 VWNA shall perform all Unplanned Maintenance for the Facility. The cost of Unplanned Maintenance is not a component of the Annual Fee set forth in this Agreement. VWNA will invoice the OWNER for all Unplanned Maintenance on a time and materials-plus basis.

5.6 VWNA shall notify the OWNER prior to commencing any Unplanned Maintenance VWNA reasonably believes will exceed Five Thousand (5,000) Dollars. VWNA will not commence Unplanned Maintenance costing in excess of Five Thousand (5,000) dollars without prior written approval from the OWNER.

5.7 Notwithstanding the provisions of Section 5.6, in any emergency affecting the safety of persons or property, VWNA may act without prior written approval, amendment or change order, at VWNA's discretion, to prevent threatened damage, injury or loss. VWNA shall be compensated by OWNER for any such emergency work notwithstanding the lack of prior written approval. Such compensation shall include VWNA's non-labor direct Costs for the emergency work. Nothing contained in this Section shall impose upon VWNA a duty to perform any emergency work absent a change order and failure to perform any such emergency work shall not impose upon VWNA any liability for errors and omissions.

5.8 OWNER and VWNA shall discuss all proposed Capital Projects related to the Facility or expansion of the Facility. The cost of any such Capital Project is not included in the Annual Fee set forth within this Agreement.

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6. VWNA's Scope of Services – Field, Engineering and Customer Services

6.1 This Article shall apply to VWNA's operation, engineering and management services for the OWNER's billing, bookkeeping and customer service functions.

6.2 On a periodic basis, as set forth in Table 6.2 below, VWNA shall read the water meter for each customer of OWNER connected to the water system (hereinafter "Customer") and timely convey that information to OWNER. VWNA shall conduct all repeat meter reads and special readings for closing and opening of accounts.

Table 6.2

Meter Size/Description	Frequency of Meter Read
Meters larger than ¾ inch	Monthly
Meters equal or less than ¾ inch: commercial accounts	Monthly
Meters equal or less than ¾ inch: residential accounts where meters have been converted to radio readers	Monthly
Meters equal or less than ¾ inch: residential accounts where meters have not been converted to radio readers	Quarterly

6.3 VWNA shall respond to requests for service by OWNER such as turning on service for water, rechecking meter readings and physically disconnecting water service.

6.4 VWNA shall implement and maintain a backflow and cross-connection inspection program in accordance with the New Hampshire Environmental Services requirements.

6.5 VWNA shall provide a "one-call contact center" for purposes of receiving Customer inquiries, complaints and emergency service calls related to the Project.

6.6 At the OWNER's direction, VWNA shall provide Engineering Services, as more fully detailed in Appendix E. The cost of Engineering Services is not included in the Annual Fee set forth in this Agreement.

7. OWNER's Obligations

7.1 OWNER shall pay any amounts owed to VWNA by OWNER pursuant to this Agreement.

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7.2 OWNER shall grant to VWNA the sole, exclusive and irrevocable right and discretion to perform the Services and to have access and operate the Facility.

7.3 The OWNER shall fund all necessary Unplanned Maintenance and Capital Projects within the schedule agreed with VWNA. Priority shall be given to safety and the ADA related expenses described in Section 3.5. Any loss, damage, or injury resulting from OWNER's failure to authorize Unplanned Maintenance costing in excess of Five Thousand (5,000) Dollars or Capital Projects when reasonably requested by VWNA shall be the sole responsibility of OWNER.

7.4 The OWNER shall keep in force all Project related warranties, guarantees, easements and licenses that have been granted to OWNER and are not transferred to VWNA under this Agreement.

7.5 OWNER shall obtain, maintain and renew all Project related authorizations for which OWNER is or may become responsible, including, but not limited to building permits. OWNER shall assist VWNA to obtain, maintain or renew all Project related authorizations for which VWNA is or may become responsible.

7.6 The OWNER shall pay all sales, excise, *ad valorem*, property, franchise, occupational and disposal taxes, or other taxes associated with the Project other than taxes imposed upon VWNA's net income and/or payroll taxes for VWNA employees. In the event VWNA is required to pay any sales tax or use taxes on the value of the services provided by VWNA hereunder or the services provided by any subcontractor of VWNA, such payments shall be reimbursed by the OWNER unless the OWNER furnishes a valid and properly executed exemption certificate relieving the OWNER and VWNA of the obligation for such taxes. In the event the OWNER furnishes an exemption certificate which is invalid or not applicable to services by VWNA, the OWNER shall indemnify VWNA for any taxes, interest, penalties, and increment costs, expenses or fees which it may incur as a result of VWNA's reliance on such certificate.

7.7 The OWNER shall provide VWNA, within a reasonable time after request and on an "as available" basis, with the temporary use of any piece of OWNER's heavy equipment that is available so that VWNA may discharge its obligations under this Agreement in the most cost-effective manner.

7.8 OWNER shall provide all registrations and licenses for OWNER's vehicles used in connection with the Project.

7.9 OWNER shall provide for VWNA's exclusive use of all vehicles and equipment presently in full-time use at the Project.

7.10 OWNER shall provide the Project with appropriate security personnel and/or devices to protect against any losses resulting from the theft, damage, or

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unauthorized use of property owned by OWNER and shall accept liability for such losses except to the extent such losses are directly caused by the negligent acts or omissions of VWNA.

7.11 OWNER shall provide to VWNA all information, documents and records relating or connected with the Facility or the Services that OWNER has within its care, custody or control and which VWNA may require in order to meet its obligations under this Agreement.

7.12 OWNER shall provide and secure for the benefit of VWNA all rights of way and easements relating to the Facility and access to the Facility so that VWNA may perform its obligations under this Agreement.

7.13 OWNER shall be responsible for all non-rolling stock, Project-related fuel costs, including electricity, natural gas and fuel oil.

7.14 OWNER shall supply computers, related hardware, and computerized programs for maintenance, process control, cost accounting, customer services, field operations and laboratory Quality Assurance/Quality Control. OWNER will ensure that the computerized programs it provides are integrated with one another.

7.15 OWNER shall provide all administrative support required for handling customer inquiries, bill generation, payment processing and collection. OWNER shall also maintain the accounting systems to track billing, payment and collection activities.

8. Compensation

8.1 VWNA's compensation under this Agreement shall consist of an Annual Fee. The Annual Fee for the period _____ through _____ shall be $_____.

8.2 The services being provided under this Agreement are based on reasonably expected overtime for normal breakdowns or services required after hours. Any additional expenses including straight or over time wages caused by severe weather, a disaster or unplanned event that may be recovered through billing any third party including the State or Federal Government FEMA funds will be billed to the OWNER for reimbursement.

8.3 The Annual Fee shall be negotiated each year at least four (4) months prior to the anniversary of this Agreement's effective date. Should OWNER and VWNA fail to agree, the Annual Fee will be adjusted by multiplying the existing Annual Fee by the escalation formula below:

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$$\text{Escalation Factor} = 0.65 \times \frac{L_N}{L_E} + 0.35 \times \frac{CPI_N}{CPI_E}$$

Where:

L: Labor Inflation Factor
CPI: General Inflation Factor

Escalation Factor shall be calculated every year, on the 1st January of year N, when no agreement on Annual Fee has been reached between OWNER and VWNA.
E shall be the last year where the Annual Fee has been agreed between VWNA and OWNER.

L_N	Last value of Labor Inflation Factor available on 1st January of year N
L_E	Last value of Labor Inflation Factor available on 1st January of year E
CPI_N	Last value of General Inflation Factor available on 1st January of year N
CPI_E	Last value of General Inflation Factor available on 1st January of year E

9. Payment of Compensation

9.1 One-twelfth (1/12) of the Annual Fee for the current year shall be due and payable on the first of the month for each month that services are provided.

9.2 All other compensation to VWNA is due upon receipt of VWNA's invoice and payable within fifteen (15) days.

9.3 OWNER shall pay interest at an annual rate equal to _____, said rate of interest not to exceed any limitation provided by law, on payments not paid and received within fifteen (15) calendar days of the due date, such interest being calculated from the due date of the payment. In the event the charges hereunder might exceed any limitation provided by law, such charges shall be reduced to the highest rate or amount within such limitation.

10. Scope Changes

10.1 A Change in Scope of services shall occur when and as VWNA's costs of providing services under this Agreement change as a result of:

10.1.1 any difference between the actual situation of the Project and the assumptions provided by VWNA in its price proposal;

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10.1.2 any change in Project operations, maintenance, personnel qualifications or staffing or other cost which is a result of an Uncontrollable Circumstance;

10.1.3 increases or decreases in the user base as constituted as of the Bid Submission Date. For the avoidance of doubt, for purposes of this subsection, the actual user base is defined as those users who receive water-related services within the geographic area served formerly by Pennichuck Water Works, including the areas served formerly by Pennichuck East Utilities Inc. and Pittsfield Aqueduct Company;

10.1.4 increases or decreases of not less than seven percent (7%) in the volume of finished water delivered to customers, measured according to readings of customers' meters;

10.1.5 Change in Raw Water Specifications, per comparison with Appendix C as demonstrated by the twelve month average;

10.1.6 increases or decreases in rates or other related charges (including taxes) imposed upon VWNA by a taxing authority - excluding taxes based on VWNA's net income; and/or

10.1.7 OWNER's request of VWNA and VWNA's consent to provide additional services, including but not limited to, Capital Projects and Engineering Services, extension of the Services to assets not listed in Schedule B or extension of the services to new areas not included in the Services Area as of the Contract Date.

10.2 For Changes in Scope described in Sections 10.1.1 to 10.1.5 above, the Annual Fee shall be increased (or decreased) by an amount equal to VWNA's additional (reduced) Cost associated with the Change in Scope plus ten percent (10%).

10.3 For Changes in Scope described in Sections 10.1.6, the Annual Fee shall be increased (or decreased) by an amount equal to VWNA's additional (reduced) Cost associated with such Change in Scope.

10.4 OWNER and VWNA shall negotiate an increase in VWNA's Annual Fee for Changes in Scope based on Section 10.1.7.

10.5 Either OWNER or VWNA may submit or request a Change in Scope as set forth in this article. Each request for a Change in Scope shall be in writing and shall include, without limitation, the following: (i) an explanation of the basis for the request for Change in Scope in detail sufficient to allow the party receiving the notice to evaluate and approve or disapprove the request, (ii) any time restrictions on the implementation of the requested Change in Scope, (iii) the reasons for the Change in

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Scope, and (iv) a statement of the sections of this Agreement that would be modified or otherwise affected by it. Following receipt of the written request the parties shall meet as soon as is reasonably possible and at such meeting shall discuss the nature of the Change in Scope and the reasons for it being requested. The purposes of the meeting shall be to increase the responsiveness of the parties to the situation or needs resulting in the request and, to the extent possible, to reach agreement on guidelines for how the change will best be effected.

10.6 Unless otherwise agreed to in writing, the party receiving notice of a requested Change in Scope shall accept or reject such request within 30 Business Days or such request will be deemed rejected.

11. Indemnity, Liability and Insurance

11.1 VWNA hereby agrees to indemnify and hold OWNER harmless from any liability or damages for bodily injury, including death, property damages and pollution damages which may arise from VWNA's negligence or willful misconduct under this Agreement; provided, VWNA shall be liable only for that percentage of total damages that corresponds to its percentage of total negligence or fault.

11.2 OWNER agrees to indemnify and hold VWNA harmless from any liability or damage or bodily injury, including death, property damages and pollution damages which may arise from all causes of any kind other than VWNA's negligence or willful misconduct, including, but not limited to, breach of an OWNER warranty.

11.3 Unless covered by the indemnities contained in Sections 11.1 and 11.2 above and the insurance policies provided by the parties herein, neither VWNA nor the OWNER shall be liable to the other in any action or claim for consequential, incidental or special damages, loss of profits, loss of opportunity, loss of product or loss of use. Any protection against liability for losses or damages afforded any individual or entity by these terms shall apply whether the action in which recovery of damages is sought is based on contract, tort (including sole, concurrent or other negligence and strict liability of any protected individual or entity), statute or otherwise. To the extent permitted by law, any statutory remedies, which are inconsistent with these terms, are waived.

11.4 VWNA shall be liable for those fines or civil penalties imposed by a regulatory or enforcement agency for violations occurring on or after the Service Commencement Date, of the finished water quality provided for in Appendix C-1 that are a result of VWNA's negligence. OWNER will assist VWNA to contest any such fines in administrative proceedings and/or in court prior to any payment by VWNA. VWNA shall pay the cost of any such contest.

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11.5 OWNER shall be liable for those fines or civil penalties imposed by any regulatory or enforcement agencies on OWNER and/or VWNA that are not a result of VWNA's negligence or are otherwise directly related to the ownership of the Facility and shall indemnify and hold VWNA harmless from the payment of any such fines and/or penalties.

11.6 Notwithstanding anything contained within this Agreement, OWNER shall defend, indemnify and hold harmless VWNA from and against any Losses arising out of or related to:

(i) any Environmental Conditions on, in, under, across or at the Facility;

(ii) any Release or threatened Release of Regulated Substances from the Facility or any location used for the storage, treatment, disposal or beneficial use of influent, effluent, utilities, and wastes produced by the Facility; or

(iii) any violations of Environmental Laws related to operation or maintenance of the Facility, or the storage, treatment, generation, discharge, disposal or beneficial use or other wastes produced, generated or discharged by the Facility,

except to the extent that such Environmental Conditions, Releases or violations of Environmental Laws are caused by the negligent or willful acts or omissions of VWNA in performing its obligations under this Agreement.

11.7 To the fullest extent permitted by law and notwithstanding any other provision of this Agreement, VWNA's liability for performance or non-performance of any obligation arising under the Agreement (whether arising under breach of contract, tort, strict liability, or any other theory of law or equity) including, but not limited to its indemnity obligations specified in Section 11.1 of the Agreement, shall not exceed $_____ cumulatively for the duration of the Agreement, provided that the foregoing limitation shall not apply to any losses resulting from the gross negligence or willful misconduct of VWNA or VWNA's subcontractors, employees or agents in breach of VWNA's obligations under this Agreement.

11.8 Each party shall obtain and maintain insurance coverage of a type and in the amounts described in Appendix F. Each party shall provide the other party with satisfactory proof of insurance.

11.9 The provisions of Sections 11.1 through 11.7 above shall survive the termination of the Agreement.

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12. Term, Termination and Default

12.1 The initial term of this Agreement shall be _____ (___) years commencing _____ ("Initial Term"). Thereafter, this Agreement shall be automatically renewed for successive terms of _____ (__) years each unless canceled in writing by either party no less than one hundred and twenty (120) days prior to expiration.

12.2 A party may terminate this Agreement for a material breach of the Agreement by the other party; only after giving written notice of breach; and, except in case of a breach by OWNER for non-payment of VWNA's invoices, in which case termination may be immediate by VWNA, only after allowing the other party thirty (30) days to cure or commence taking reasonable steps to cure the breach.

12.3 Upon notice of termination by OWNER, VWNA shall assist OWNER in assuming operation of the Project. If additional Cost is incurred by VWNA at request of OWNER, OWNER shall pay VWNA such Cost within 15 days of invoice receipt.

12.4 Upon termination of this Agreement and all renewals and extensions of it, VWNA will return the Project to OWNER as it was upon the effective date of this Agreement, ordinary wear and tear excepted. Equipment and other personal property purchased by VWNA for use in the operation or maintenance of the Project shall remain the property of VWNA upon termination of this Agreement unless the property was directly paid for by OWNER or OWNER specifically reimbursed VWNA for the cost incurred to purchase the property or this Agreement provides to the contrary.

13. Disputes and Force Majeure

13.1 In the event activities by employee groups or unions cause a disruption in VWNA's ability to provide the Services, OWNER, with VWNA's assistance or VWNA at its own option, may seek appropriate injunctive court orders. During any such disruption, VWNA shall operate the facilities on a best-efforts basis until any such disruptions cease.

13.2 Neither party shall be liable for its failure to perform its obligations under this Agreement if such failure is due to any Uncontrollable Circumstances beyond its reasonable control or Force Majeure. However, this Section may not be used by either party to avoid, delay or otherwise affect any payments due to the other party.

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Both parties indicate their approval of this Agreement by their signatures below, and each party warrants that all corporate or governmental action necessary to bind the parties to the terms of this Agreement has been and will be taken.

CITY OF NASHUA, NEW HAMPSHIRE	**VEOLIA WATER NORTH AMERICA - NORTHEAST, LLC**
By: (DRAFT)	By: (DRAFT)
Name:	Name:
Title:	Title:
Date:	Date:

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CERTIFICATE OF COUNSEL

The undersigned, as counsel for the City of Nashua, New Hampshire ("OWNER") in this transaction, hereby certifies that (s)he has examined the circumstances surrounding the selection of Veolia Water North America – Northeast, LLC ("VWNA") and the award and letting of the foregoing contract to VWNA by OWNER, and has found that said selection and award process comply with the procurement laws of the State of New Hampshire and the City of Nashua.

_____ Date: _____

Counsel for OWNER

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APPENDIX A

DEFINITIONS

A.1. "Acceptable Raw Water" means Raw Water compliant with the Specifications of Schedule C.

A.2. "Annual Fee" means a predetermined, fixed sum for VWNA's services. The Annual Fee includes Cost and profit.

A.3. "Bid Submission Date" means July 14, 2005.

A.4. "Capital Project" means (i) an item that will be of a long-term nature having a useful life in excess of three years, as defined by manufacturers' specifications and (ii) those items that require a modification, alteration, addition to, and or improvement to an existing facility with a construction, installation (including materials) or purchase value in excess of $5,000 and (iii) replacement of equipment that has met or exceeded its useful life and (iv) items for construction, placement of new facilities (e.g. piping, equipment, wells, etc., including material costs) and capital purchases that significantly improve operations and or maintenance, aesthetics, long-term capital conditions or other aspects not generally associated with ongoing operations and maintenance. A "Capital Project" shall not (i) include preventive, predictive, routine, and or periodic operations activities; (ii) include preventive, predictive, routine, and or periodic maintenance activities; (iii) allow the combination of a series of smaller projects or costs items to meet the $5,000 threshold, unless deemed eligible by the Owner prior to the commencement of the work activity.

A.5. "Change in Law" means the enactment, adoption, promulgation, modification, repeal or change after the Bid Submission Date of any Applicable Law which (a) necessitates or makes advisable a Capital Project, (b) modifies the Company's guarantees under this Agreement, (c) increases the cost of the Services by establishing requirements with respect to the operation or maintenance of the Facility, (d) otherwise impacts the Company's ability to perform its obligations under this Agreement, or (e) increases or decreases the rate of State gross retail tax or the rate of the use tax or any other tax and results in increased or decreased operation expenses to the Company, which, in the case of (a), (b), (c), or (d), are more burdensome than the most stringent requirements:

(1) in effect on the Bid Submission Date;
(2) agreed to by the Owner as of the Bid Submission Date in any applications for official permits, licenses or approvals to or for the Facility, other than any requirements set forth in said applications to comply with Applicable Laws;

and which, in the case of (e), any changes on the operation expenses of the Company as a result of such increase or decrease in taxes must be: (i) approved by the Owner; (ii)

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minimized by the Company using its best efforts; and (iii) considered by the Parties to be a re-negotiation of this Agreement, which shall comply with the provisions of the Revenue Procedure.

A.6. "Contract Date" means the date specified on the first page of this Agreement.

A.7. "Cost" means all Direct Cost and indirect cost determined on an accrual basis in accordance with generally accepted accounting principles.

A.8. "Direct Cost" means the actual cost incurred for the direct benefit of the Services including, but not limited to, expenditures for project management and labor, employee benefits, chemicals, lab supplies, repairs, repair parts, maintenance parts, safety supplies, gasoline, oil, equipment rental, legal and professional services, quality assurance, travel, office supplies, other supplies, uniforms, telephone, postage, utilities, tools, memberships and training supplies.

A.9. "Emergency Response Plan" has the same meaning set forth in 42 U.S.C. §300i-2(b) (the "Public Health Security and Bioterrorism Preparedness and Response Act of 2002"): "[t]he emergency response plan shall include, but not be limited to, plans, procedures, and identification of equipment that can be implemented or utilized in the event of a terrorist or other intentional attack on the public water system. The emergency response plan shall also include actions, procedures, and identification of equipment which can obviate or significantly lessen the impact of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water provided to communities and individuals."

A.10. "Environmental Conditions" means the presence of any Regulated Substance on or at the Facilities Site, including but not limited to, the presence in containers, on the surface, or in surface water, groundwater, soils or subsurface strata, or the migration of such a Regulated Substance from the Facilities Site.

A.11. "Environmental Laws" means any Applicable Law relating to (i) the protection of public health, safety, natural resources or the environment; (ii) the manufacturing, handling, generation, storage, treatment, processing, transportation, release, discharge, emission or disposal of Regulated Substances; (iii) Environmental Conditions; or (iv) the protection of human health and safety.

A.12. "Facility" means the water treatment and distribution system and appurtenances identified in more detail in Appendix B.

A.13. "Force Majeure" means any act, event or condition that has a direct material adverse effect on the performance of a subcontractor's or supplier's obligations to the Company if such act, event or condition is beyond the reasonable control of the Company, subcontractor or supplier asserting a Force Majeure as justification for not performing its

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obligations; provided, however, such act, event or condition cannot be caused by the negligent or intentional action of the Company, subcontractor or supplier.

A.14. "Losses" means any losses, claims, demands, charges, expenses, costs (including costs of defense, settlement and reasonable attorneys' fees), liabilities, obligations, fines and penalties.

A.15. "Preventive and Predictive Maintenance" means actions performed periodically (or continuously) prior to functional failure (or multiple failure/demand requirements for hidden failures) to achieve the desired level of safety and reliability for an item.

A.16. "Project" means all equipment, vehicles, grounds, rights of way, and the Facility described in Appendix B and, where appropriate, the management, operations and maintenance of such.

A.17. "Services" means the services to be provided by VWNA as detailed in Articles 2, 3, 4, 5 and 6 of the Agreement.

A.18. "Services Area" means the perimeter served by former Pennichuck Water Works.

A.19. "Service Commencement Date" shall mean January 1, 2007.

A.20. "Uncontrollable Circumstance(s)" means any act, event or condition that (a) prevents the Company from meeting or (b) materially increases the cost of performing, its obligations under this Agreement, if such act, event or condition is beyond the Company's reasonable control; provided, however, such act, event or condition is not the result of the Company's failure to operate and maintain the Project in accordance with the terms and conditions of this Agreement.

(a) Subject to the immediately preceding paragraph of this definition, the following acts, events or conditions may qualify as an Uncontrollable Circumstance:

(1) flood, drought, hurricane, tornado, epidemic, severe earthquake, catastrophic fire or explosion, act of a public enemy, war, blockade, insurrection, riot, general unrest, restraint of government and people, civil disturbance, sabotage or similar occurrence;

(2) the order, injunction or judgment of any federal, State or local court, administrative agency or governmental body or officer, including any exercise of the power of eminent domain, police power, condemnation or other taking by or on behalf of any public, quasi-public or private entity; provided, however, that such order, injunction or judgment did not arise in connection with or is not

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related to the negligent or wrongful action or inaction of the Company and that neither the contesting in good faith of any such order, injunction, or judgment nor the reasonable failure to so contest shall constitute or be construed as a wrongful or negligent action or inaction of the Company;

(3) the suspension, termination, interruption, denial, failure to issue, modification or failure of renewal of any permit, license, consent, authorization or approval necessary to the operation, maintenance, repair and management of the Project, if such act or event did not arise in connection with, or is not related to, the negligent or willful action or inaction of the Company; provided, however, that neither the contesting in good faith of any such order nor the reasonable failure to so contest shall be construed as a negligent or willful action or inaction of the Company;

(4) a Change in Law;

(5) the failure of any subcontractor or supplier to furnish services, materials, chemicals or equipment on the dates agreed to; provided (A) such failure is the result of a Force Majeure, (B) such failure materially and adversely affects the Company's ability to perform its obligations and (C) the Company is not reasonably able to obtain substitute services, material, chemicals or equipment on the agreed upon dates; and

(6) unavailability of Acceptable Raw Water.

(b) An Uncontrollable Circumstance shall not include:

(1) any act, event or condition which is caused by the negligence or intentional action of the Company, its subcontractors, agents and employees;

(2) any event, reasonably foreseeable on the Contract Date;

(3) economic infeasibility;

(4) change of certain economical parameters (such as conditions and/or price of supply of Raw Water, waste water discharge price, land use right or rent);

(5) any labor strike, work stoppage or slowdown on the part of the Company's employees;

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(6) subject to the definition of a Change in Law regarding sales taxes, any order, injunction or judgment of any federal, State or local court, administrative agency or governmental body interpreting federal, State, or local tax laws; and

(7) weather conditions in the geographic area of the Owner, other than those listed in (a)(1) of this definition.

A.21. "Unplanned Maintenance" means all maintenance and repair activity not included in the definition of "Preventive and Predictive Maintenance."

A.22. "Vulnerability Assessment" shall have the same meaning set forth at 42 U.S.C. §300i-2(a) (the "Public Health Security and Bioterrorism Preparedness and Response Act of 2002"): "an assessment of the vulnerability of [the community water system] to a terrorist attack or other intentional acts intended to substantially disrupt the ability of the system to provide a safe and reliable supply of drinking water. The vulnerability assessment shall include, but not be limited to, a review of pipes and constructed conveyances, physical barriers, water collection, pretreatment, treatment, storage and distribution facilities, electronic, computer or other automated systems which are utilized by the public water system, the use storage, or handling of various chemicals, and the operation and maintenance of such system."

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APPENDIX B

DESCRIPTION OF PROJECT

VWNA agrees to provide the services necessary for the management, operation and maintenance of the following:

NOTE: This section left blank in order to comply with the RFP's request for scalability.

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APPENDIX C

WATER TREATMENT CHARACTERISTICS

C-1 The water treatment plant has the following design characteristics:

A capacity of _____ MGD of finished water production with ability for chemical additions, flocculation, sedimentation and filtration based on ___ gallons per minute per square foot of filter area. The water treatment plant has the capability for post treatment by chlorination and fluoridation. The average daily flow of raw water is ____ MGD per day.

The raw water has the following characteristics

NTU Raw _____
pH Low _____
pH High _____
Alkalinity _____
Hardness _____

C-2 VWNA will operate the water treatment plant so that water treated will meet the current drinking water standards. VWNA's Annual Fee is based on treating an average daily flow of ____ MGD of raw water per day to the standards specified below.

Turbidity	<0.5 NTU
Iron	<0.3 mg/l
Manganese	<0.05 mg/l
Fluoride	0.8 average mg/l
pH	≥ 7.0
Color	<15 color units
Corrosivity	Non-corrosive
Odor	<3.0 TON
E. Coli	Negative

C-3 The daily flows and raw water characteristics set forth in Paragraph C-1 are the actual twelve (12) months' average for the period ended _____ 200_. Any change of ten percent (10%) or more in any of these characteristics, based upon a twelve (12) month moving average, will constitute a Change in Scope (See Article 10).

C-4 If any of the following contaminants in the raw water causes the finished water to exceed the Maximum Contaminant Levels (MCL) established for finished water quality, VWNA will treat the raw water to reduce said contaminant to an acceptable MCL. The cost of any specific treatment will be in addition to the Annual Fee for the treatment required by this Article C-4.

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Radionuclides	MCL
Radium	5.0 PCi/L
Gross Alpha	15.0 PCi/L

Organic Chemicals

Contaminant	MCL (mg/l)
Alachlor	0.002
Aldicarb	0.003
Aldicarb Sulfone	0.002
Aldicarb Sulfoxide	0.004
Atrazine	0.003
Benzene	0.005
Carbofuran	0.04
Carbon Tetrachloride	0.005
Chlordane	0.002
2,4-D	0.07
Dibromochloropropane (DBCP)	0.0002
o-Dichlorobenzene	0.6
p-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1
1,2-Dichloropropane	0.005
Endrin	0.002
Ethylbenzene	0.7
Ethylene Dibromide (EDB)	0.00005
Heptachlor	0.0004
Heptachlor Epoxide	0.0002
Lindane	0.0002
Methoxychlor	0.04
Monochlorobenzene	0.1
Pentachlorophenol	0.001
Polychlorinated Biphenyls (PCB)	0.0005
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1
Toxaphene	0.003
2,4,5-TP (Silvex)	0.05
1,1,1-Trichloroethane	0.02

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Trichloroethylene	0.005
Total Trihalomethanes	0.1
Vinyl Chloride	0.002
Xylenes (Total)	10

Inorganic Chemicals

Contaminant	MCL (mg/l)	
Arsenic	0.05	
Asbestos	7	(million fibers/liter)
Barium	2	
Cadmium	0.005	
Chromium	0.1	
Fluoride	4	
Mercury	0.002	
Nitrate	10	(as nitrogen)
Nitrite	1	(as nitrogen)
Total Nitrate Nitrite	10	
Selenium	0.05	
Chloride	300	
Copper	1.0	
Fluoride	2.0	
Silver	0.10	
Sulfate	300	
Total dissolved solids (TDS)	1,000	
Zinc	5	

C-5 VWNA will provide laboratory services for monitoring only the following contaminants on an as-requested basis. These contaminants do not have an established MCL.

Aldrin	Hexachlorobenzene
Benzo(a)pyrene	Hexachlorocyclopentadiene
Butachlor	3-Hydroxycarbofuran
Carbayl	Methomyl
Dalapon	Metolachlor
Di(2-ethylhexy) adipatc	Metribuzin
Di(2-ethylhexyl)pthalarc	Oxyamyl (vydate)
Didamba	Pictoram
DichloromethaneDieldrin	Propachlor
Dinoseb	Simazine
Diquat	2,3,7,8-TCDD (Dioxin)
Entodhall	1,2,4-Trichlorobenzene
Glyphosate	1,1,2-Trichloroethane

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APPENDIX D

(Description of O&M for Water Distribution System and Appurtenances)
(Intentionally Left Blank)

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APPENDIX E

(Description of Engineering Services and Rates)
(Intentionally Left Blank)

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APPENDIX F

INSURANCE COVERAGE

VWNA SHALL MAINTAIN:

1. Statutory workers compensation for all of VWNA's employees at the Project as required by the State of New Hampshire.

2. Comprehensive general liability insurance, insuring VWNA's negligence, in an amount not less than $5,000,000 combined single limits for bodily injury and/or property damage.

OWNER SHALL MAINTAIN:

1. Statutory workers compensation for all of OWNER's employees associated with the Project as required by the State of New Hampshire.

2. Property damage insurance for all property including vehicles owned by OWNER and operated by VWNA under this Agreement. Any property, including vehicles, not properly or fully insured shall be the financial responsibility of the OWNER. The OWNER's property damage insurance shall contain a waiver of subrogation in favor of VWNA.

3. Automobile liability insurance for collision, comprehensive, and bodily injury.

Each party will cause the other party to be added as additional insured on the above insurance policies and will require its insurance carrier to provide the other party at least thirty (30) days notice of the cancellation of such policies. VWNA may self-insure reasonable deductible amounts under the policies it is required to maintain to the extent permitted by law. Each policy shall provide a waiver of subrogation in favor of the other party.

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Appendix E

Part Two

Veolia Water North America – Northeast, LLC

2005 - Affirmative Action Program

VEOLIA Water

2005 AFFIRMATIVE ACTION PROGRAM

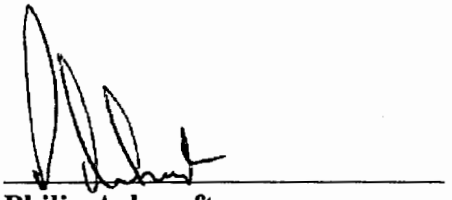
For

Veolia Water North America – Northeast, LLC

Program Completed by: Michael Schnack
EEO Coordinator

Address: 200 Cordwainer Drive, Suite 202
Norwell, MA 02061

Program Approved by:



Philip Ashcroft
President

This Affirmative Action Program is effective from January 1, 2005 to December 31, 2005.

Veolia Water North America – Northeast, LLC

AFFIRMATIVE ACTION PROGRAM

STATEMENT OF PRIVILEGE

Copies of this Affirmative Action Program and all related appendices, documents and support data are made available on loan to the United States Government upon the request of said Government on the condition that the Government hold them totally confidential and not release copies to any person whatsoever. This Affirmative Action Program and its appendices and other supporting documents contain confidential information which may reveal, directly or indirectly, the Company's plans for business or geographical expansion or contraction. The Company considers this Affirmative Action Program, all portions thereof and all supporting material to be its private and confidential property and to be on loan to the Government only under specified conditions, including non-reproduction and non-distribution and to be exempt from disclosure under the Freedom of Information Act upon the grounds, inter alia, that such material constitutes: (1) personnel files, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy and are exempt from disclosure under 5 U.S.C. §552(b)(6); (2) confidential, commercial or financial information which is exempt from disclosure under 5 U.S.C. §522(b)(4); (3) investigatory records compiled for law enforcement purposes, the production of which would constitute an unwarranted invasion of personal privacy and are exempt from disclosure under 5 U.S.C. §552(b)(7); and (4) matters specifically exempted from disclosure by statute and are exempt from disclosure under 5 U.S.C. §522(b)(3).

The Company will submit further detailed documentation supporting this claim of privilege if necessary.

Veolia Water North America – Northeast, LLC

AFFIRMATIVE ACTION PROGRAM

NON ADMISSION STATEMENT

It is understood that this Affirmative Action Program, or any part thereof, does not constitute an admission by the Company of any violation of Executive Order 11246, as amended the Vocational Rehabilitation Act of 1973, the Vietnam Era Veterans' Readjustment Assistance Act of 1974, Title VII of the Civil Rights Act of 1964 or of any federal, state or local law and has been developed in order to reaffirm the Company's policy of providing equal employment opportunity for all persons without regard to race, religion, color, national origin, citizenship, sex, veteran's status, age or disability. Goals have been established, where appropriate, to endeavor to meet affirmative action obligations.

This program is not intended to and will not be used to discriminate against any applicant or employee because of race, religion, color, national origin, citizenship, sex, veteran's status, age or disability.

Veolia Water North America – Northeast, LLC

BRIEF HISTORY OF COMPANY AND MISSION

A NOTICE AND INVITATION TO ALL EMPLOYEES AND APPLICANTS

Philip Ashcroft, PRESIDENT

AFFIRMATIVE ACTION AND EQUAL EMPLOYMENT OPPORTUNITY POLICY STATEMENT

Veolia Water North America – Northeast, LLC has been and will continue to be an equal opportunity employer. To assure full implementation of this equal employment policy, we will take steps to assure that:

a. Persons are recruited, hired, assigned and promoted without regard to race, religion, color, national origin, citizenship, sex, veteran's status, age or disability.

b. All other personnel actions, such as compensation, benefits, transfers, layoffs and recall from lay offs, access to training, education, tuition assistance and social recreation programs are administered without regard to race, religion, color, veteran's status, national origin, citizenship, sex, age or disability.

c. Employees and applicants shall not be subjected to harassment, intimidation, threats, coercion or discrimination because they have: (1) filed a complaint; (2) assisted or participated in an investigation, compliance review hearing or any other activity related to the administration of any federal, state or local law requiring equal employment opportunity; (3) opposed any act or practice made unlawful by any federal, state or local law requiring equal opportunity or (4) exercised any other right protected by federal, state or local law requiring equal opportunity.

I have appointed Michael Schnack, HR Manager, to take on the responsibilities of EEO Coordinator. As EEO Coordinator, he will be responsible for the day to day implementation and monitoring of this Affirmative Action Plan. As part of that responsibility, he will periodically analyze the Company's personnel actions and their effects to insure compliance with our equal employment policy.

If you, as one of our employees or as an applicant for employment, have any questions about this policy or would like to be considered under our Affirmative Action Plan, please see Michael Schnack during regular business hours.

I have reviewed and fully endorse our Affirmative Action and Equal Employment Opportunity program. In closing, I ask the continued assistance and support of all of the Company's personnel to attain our objective of equal employment opportunity for all.

Sincerely,

Philip Aschroft
President

This Affirmative Action Program is effective from January 1, 2005 to December 31, 2005.

SEX DISCRIMINATION POLICY

In accordance with our policy of equal employment opportunity, we have adopted the following policy prohibiting sex discrimination and sexual harassment in the workplace. In addition to continued adherence to the goals enunciated in our Affirmative Action and Equal Employment Opportunity Policy, we will also continue to do the following as applicable:

I. RECRUITMENT AND ADVERTISEMENT

A. Recruit men and women for all positions, except where sex is a bona fide occupational qualification, without regard to the applicant's or candidate's sex.

B. Ensure that "help-wanted" advertising does not express a sex preference for any job, unless sex is a bona fide occupational qualification for that job.

C. Refrain from placing advertisements in newspapers or other media which are labeled "Males" or "Females," or otherwise segregated by sex, unless sex is a bona fide occupational qualification.

II. JOB POLICIES AND PRACTICES

A. Review personnel policies to avoid discrimination on the basis of sex.

B. Consider employees and applicants of both sexes for assignment, transfer or promotion to all positions for which they are qualified, except where sex is a bona fide occupational qualification.

C. Administer employment opportunities, wages, hours, conditions of employment, pensions, recreation programs and employee benefits without regard to sex.

D. Consider married and unmarried men and women equally in all personnel actions, including the administration of wages and benefits, without regard to the number of dependents which an individual may support or maintain. Retirement age and retirement benefits will be equal for both sexes.

E. Provide appropriate facilities, e.g., rest rooms and locker areas, for employees and applicants of both sexes.

F. Refrain from reliance upon state laws which conflict with Title VII of the Civil Rights Act of 1964, as amended, or Executive Order 11246 and are superseded thereby.

G. Provide leaves of absence to employees, without regard to an employee's sex. No employee will be discriminated against because of pregnancy.

Following childbirth, and upon signifying her intent to return within a reasonable time, the Company will reinstate such employee to her original job or to a position of like status and pay, without loss of service credits.

III. SENIORITY

Consider employees' seniority and administer any seniority system without regard to employees' sex.

IV. DISCRIMINATORY WAGES

Determine wage schedules without regard to sex. There will be equal pay for equal work.

V. SEXUAL HARASSMENT

The EEO Coordinator shall notify all supervisors and managers that they are prohibited from engaging in, tolerating or otherwise promoting unwelcome sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature by employees or supervisors, when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, (2) submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual or (3) such conduct has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile or offensive working environment.

The EEO Coordinator shall take reasonable steps to prevent sexual harassment from occurring, including, but not limited to, expressing strong disapproval of such conduct, developing appropriate sanctions, informing employees of their right to raise the issue of sexual harassment under Title VII and the procedure therefore and, generally, developing programs to sensitize managers, supervisors and employees to the nature of this problem.

VI. DEFINITION

The terms "because of sex," on "the basis of sex" and "regardless of sex" include, but are not limited to, because of or on the basis of pregnancy, childbirth or related medical conditions. Women affected by pregnancy, childbirth or related medical or physical conditions shall be treated the same for all employment-related purposes, including the receipt of benefits under fringe benefit programs, as other persons who are not so affected but are similarly able or unable to work.

VII. LEAVE OF ABSENCE DUE TO MATERNITY

Leaves of absence due to maternity are treated under our Family and Medical Leave Act Policy, a copy of which is attached at the end of this section along with a list of employees who took maternity leave pursuant to that policy.

RELIGIOUS AND NATIONAL ORIGIN DISCRIMINATION POLICY

In accordance with its policy of equal employment opportunity, the Company has adopted the following policy prohibiting discrimination on the basis of religion and national origin, and supporting affirmative action to ensure that all individuals are employed and treated during employment without regard to their religion or national origin.

I. SCOPE OF THIS POLICY

This policy applies to all terms and conditions of employment, including, but not limited to, hiring, upgrading, demotion, transfer, recruitment, recruitment advertising, layoff or recall from layoff, wage and benefit administration and selection for training.

II. OUTREACH AND POSITIVE RECRUITMENT

To determine whether members of all religious and ethnic groups are receiving fair consideration for job opportunities, the Company will consider reviewing its employment practices. Special attention will be directed toward executive and middle-management levels, where employment problems relating to religion and national origin are statistically most likely to occur. Based upon the findings of such reviews, we will undertake appropriate outreach and positive recruitment activities, such as those listed below in order to remedy any existing deficiencies. The scope of our efforts, of course, will depend upon all the circumstances including the nature and extent of any deficiencies and our size and resources. The Company will consider the following actions:

A. Explaining to all employees the Company's obligation to provide equal employment opportunity, without regard to religion or national origin, in such a manner as to foster understanding, acceptance and support among other executives, management staff, supervisors and all other employees and encouraging such persons to take all actions necessary to aid the Company in meeting our obligation;

B. Developing reasonable monitoring procedures to insure that our obligation to provide equal employment opportunity, without regard to religion or national origin, is being fully implemented;

C. Informing periodically all employees of our commitment to equal employment opportunity for all persons, without regard to religion or national origin and

D. Enlisting the assistance and support of recruitment sources (including employment agencies, college placement directors and business associates) in referring applicants without regard to religion or national origin.

III. ACCOMMODATIONS TO RELIGIOUS OBSERVANCE AND PRACTICE

The Company will endeavor to make a reasonable accommodation to the religious observances and practices of any employee or prospective employee, unless such an accommodation will impose an undue hardship on the conduct of our business. Generally, we will try to make reasonable accommodations to the religious observances and practices of any employee or prospective employee who regularly observes Friday evening and Saturday, or some other day of the week, as the Sabbath and/or who observes certain religious holidays during the year and is conscientiously opposed to performing work or engaging in similar activity on such days, when such accommodations can be made without undue hardship on the conduct of our business. In determining the extent of the hardship imposed, we may consider: (a) business necessity; (b) financial costs and expenses and (c) resulting personnel problems.

DESIGNATION OF RESPONSIBILITY FOR IMPLEMENTATION

I. EXECUTIVE MANAGEMENT RESPONSIBILITY

As the representative of executive management, the EEO Coordinator has primary responsibility and accountability for implementing, directing and monitoring this Affirmative Action Plan. The EEO Coordinator's responsibilities may include:

A. Implementing the affirmative action programs set forth in this Plan, including the development of policy statements and related internal and external communication procedures to disseminate those policy statements.

B. Developing and supervising the presentation of our equal employment opportunity policy during the supervisory training and new employee orientation programs, which may include question-and-answer sessions for supervisors and employees answering their questions about this Affirmative Action Plan.

C. Designing and implementing an audit and reporting system that will accomplish the following:

1. Measure the effectiveness of our affirmative action programs.

2. Indicate when remedial action is needed.

3. Determine the degree to which our goals and objectives have been attained.

D. Advising management and supervisory personnel on developments in the laws and regulations governing equal employment opportunity.

E. Serving as liaison between the Company and all enforcement agencies.

F. Identifying problem areas and establishing goals and objectives to remedy underutilization in major job groups, if any underutilization exists.

G. Conferring with community organizations representing women, minorities, veterans, the disabled and older workers.

H. Auditing periodically our on-the-job training, hiring and promotion patterns to remove impediments to attainment of the Company's goals and objectives.

I. Rating supervisory employees based, in part, upon their efforts and success in furthering the goal of equal employment opportunity and informing supervisory employees of this evaluation practice.

J. Discussing periodically the Company's commitment to equal employment opportunity with managers, supervisors and employees. During these discussions, the EEO Coordinator will stress the importance of affirmative action, as well as nondiscrimination.

K. Reviewing the qualifications of all employees to insure that minorities and women are given full opportunities for transfers, promotions and training.

L. Providing access to career counseling for all employees.

M. Conducting periodic audits to ensure that the Company is in compliance with federal and state laws and regulations requiring:

1. Proper display of posters explaining the Company's obligation to engage in nondiscriminatory employment practices.

2. Integration of all facilities which we maintain for the use and benefit of our employees.

3. Maintenance of comparable facilities, including locker rooms and rest rooms, for employees of both sexes.

4. Providing full opportunity for advancement and encouraging minority and female employees to participate in educational, training, recreational and social activities sponsored by the Company.

N. Counseling supervisors and managers to take actions necessary to prevent harassment of employees placed through affirmative action efforts and to eliminate the cause of such complaints. Further, the EEO Coordinator will counsel supervisors and managers not to tolerate discriminatory treatment of any employee by another employee or supervisor and to report all complaints or incidents to him.

O. Establishing an internal complaint system that will enable employees to discuss complaints with the EEO Coordinator whenever they feel that they are being discriminated against on the basis of race, color, religion, sex, national origin, disability or veterans' status.

P. Serving as liaison between the Company and community organizations representing minorities, women, veterans, the disabled and older workers.

Q. Developing expertise and knowledge of equal employment opportunity guidelines and regulations in order to advise and update top management and supervisory personnel concerning developments affecting our equal employment opportunity program.

II. THE RESPONSIBILITIES OF SUPERVISORS AND MANAGERS

All supervisors and managers have the obligation as part of their general management objectives to support our equal employment opportunity policy and affirmative action program on a day to day basis. Specifically, they must endeavor to:

A. Respond to inquiries about our Affirmative Action and Equal Employment Opportunity Policy, after consulting with our EEO Coordinator.

B. Assist our EEO Coordinator during the investigation of allegations of discrimination.

C. Participate in recruitment and accommodation efforts designed to enable disabled individuals, disabled veterans and others to secure employment and to advance to positions for which they are qualified.

D. Ensure that all federal and state posters explaining the laws prohibiting discrimination are properly displayed.

E. Participate in the development and implementation of affirmative action programs.

IDENTIFICATION OF PROBLEM AREAS

I. UNDERUTILIZATION

The EEO Coordinator conducted a Utilization Analysis for the 2005 Plan Year comparing the workforce representation of minorities and females to their statistical availability by job group. The Utilization Analysis led the Company to identify underutilization and set goals as follows:

Females in job groups: Craft Workers I (6A), Craft Workers III (6C), Operatives (7), Service Workers (9)

Minorities in job groups: Executive Management (1B), Professional (2), Craft Workers I (6A)

The Company is addressing these potential problem areas by establishing goals which we will attempt to achieve through specific action oriented programs, which are described in the section of this plan entitled "Action Oriented Programs." Our Utilization Analysis and Goals are contained behind the tabs, so named, in this affirmative action plan.

II. ADVERSE IMPACT

To determine if our selection procedures have an adverse impact upon minorities and females, we conducted an adverse impact analysis upon our selection decisions. We compared the selection ratios of minorities and females to those of non-minorities and males, respectively, in the areas of hiring, promotion and termination.

As a result of our adverse impact analysis, we examined each of the selection decisions that occurred in job groups where adverse impact was discovered as described in the Action Oriented Programs section of our plan.

III. COMPENSATION

The Company analyzed compensation to determine whether there are any gender-, race-, or ethnic-based disparities. Where the analysis identified such disparities, the Company examined each area pursuant to our Action Oriented Programs.

IV. IN GENERAL

In addition to the above, the EEO Coordinator will, on an annual basis, as applicable, identify potential problem areas in the total employment process, which may include review of the following areas:

A. Composition of the workforce by minority group status and sex.

B. Composition of applicant flow by minority group status and sex.

C. Overall employee selection process including position specifications, application forms, interviewing procedures, test administration, test

validity, referral procedures, final selection process and other employee selection procedures.

D. New hires, promotions, terminations, etc.

E. Utilization of training, recreation and social events and other programs that are sponsored by the Company.

F. Technical phases of compliance with laws prohibiting discrimination in employment and promoting affirmative action programs, e.g., retention of applications, notifications to subcontractors, etc.

G. "Underutilization" of minorities or women in specific job groups.

H. "Under-representation" or "Concentration" of minorities or women in specific departments. Attached at the end of this section is the Company's JAAR Analysis identifying departments in which minorities or women are statistically under-represented or concentrated.

I. Lateral or vertical movement of minority or female employees occurring at a lesser rate than that of non-minority or male employees.

J. The selection process eliminating a significantly higher percentage of minorities or women than non-minorities or men.

K. Application and other preemployment evaluation forms or procedures not in compliance with federal or state law.

L. Position descriptions inaccurate in relation to actual functions and duties of that particular job.

M. De facto segregation, by race or sex, existing in job titles or job groups.

N. Seniority provisions contributing to overt or inadvertent discrimination by minority group status or sex.

O. Non-support of our affirmative action and equal employment programs and policies by managers, supervisors or employees.

P. Minorities or women significantly underrepresented in training or career improvement programs.

Q. Lack of formal techniques for evaluating effectiveness of the programs set forth in this Plan.

R. Subcontractors and vendors not notified of their responsibility to assist the Company in attaining the goals and objectives set forth in this Plan.

S. Equal Employment Opportunity clause not included in leases, purchase orders or other contracts covered by Executive Order 11246.

T. Equal employment posters not on display.

If the EEO Coordinator's review indicates that the above-listed problems exist or that other impediments are blocking the entry of minority groups or women into our workforce or into specific jobs or job groups, the Company will consider corrective action, as outlined in the Action-Oriented Programs section.

ACTION-ORIENTED PROGRAMS

The Company intends to meet the goals set forth in this plan and to continue implementation of its equal employment opportunity policies through action-oriented programs. Described below are the types of actions the Company may consider:

I. DISSEMINATION OF EQUAL EMPLOYMENT OPPORTUNITY POLICY

A. INTERNAL DISSEMINATION

The Company will take the following actions to disseminate its Affirmative Action and Equal Employment Opportunity Policy, as appropriate, on a regular and continuing basis.

1. Including the Affirmative Action and Equal Employment Opportunity Policy statement in its policy manual and employee handbook, as published. A copy of our EEO Policy, which is contained in our Employee Handbook, is attached under the AA/EEO Policy section tab.

2. Meeting with supervisory personnel to explain the intent of the Affirmative Action and Equal Employment Opportunity Policy and their individual responsibilities for its implementation. We conducted supervisory training for all management about equal employment opportunity, affirmative action and sexual harassment during Plan Year 2004 and have continued the training into Plan Year 2005.

3. Scheduling special meetings with employees or using Company newsletters to discuss and explain individual employee responsibilities or opportunities under the affirmation action program. During the current plan year we will be conducting training for all employees about our affirmative action program and equal employment opportunity in the workplace.

4. Discussing our equal employment policy during any orientation programs we hold, at which time all new employees (and if applicable, transferred and promoted employees) will be advised of our commitment to affirmative action and equal employment opportunity. Our Affirmative Action and Equal Employment Opportunity Policy statement and policy statements affirmatively supporting the employment of minorities, veterans, the disabled and women will be explained during these sessions. During these orientation sessions a management representative from every area of the Company, including Human Resources explains the function of that department. Our Affirmative Action and Equal Employment Opportunity Policy statement and policy statements affirmatively supporting the employment of minorities, veterans, the disabled and women are explained during these sessions. A copy of our "New Employee Checklist," which is distributed as part of the orientation process and addresses equal employment opportunity and affirmative action in the workplace, is attached at the end of this section.

5. Posting the Affirmative Action and Equal Employment Opportunity Policy, along with all required State and federal informational posters on our bulletin boards and updating such posters as required. Our "Affirmative Action and Equal Employment

Opportunity Policy Statement," "Invitation To Covered Veterans To Self Identify," "Invitation to Individuals with Disabilities to Self Identify" and all required federal and state posters are posted in each worksite.

6. Including pictures of both minority and non-minority men and women in all employment and consumer advertising.

B. EXTERNAL DISSEMINATION

Our equal employment opportunity policy will be disseminated externally, as considered appropriate, as follows:

1. All recruiting sources, when utilized, will be advised of the Company's policy. The Company will ask for written acknowledgment by each such recruiting source that it will comply with our policy. Thereafter, on a regular basis, such recruiting sources will be notified of our continuing commitment to equal employment opportunity.

2. The equal opportunity clause will be included in all purchase orders, leases, contracts, etc., covered by Executive Order 11246, as amended. **A copy of our purchase order, which contains language that incorporates by reference the equal employment opportunity clause, is included at the end of this section.**

3. When we advertise in newspapers for prospective employees, the advertisement will include language that communicates that we are an Equal Employment Opportunity Employer, such as "We are an Equal Employment Opportunity Employer M/F/D/V." We also will direct all newspapers not to place help-wanted advertisements in race or sex-segregated columns.

4. Prospective employees are informed that the Company is an equal opportunity employer which maintains an affirmative action program through **the notices we post in areas accessible to applicants and employees and our application for employment. Moreover our affirmative action program is addressed during new hire orientation. A copy of our Employment Application is attached at the end of this section.**

5. Our primary subcontractors, vendors and suppliers will be sent written notification of our Affirmative Action and Equal Employment Policy. Implementation will require assurances of compliance with, inter alia, Executive Order 11246, the Vietnam Era Veterans' Readjustment Assistance Act of 1974 and the Vocational Rehabilitation Act of 1973. Similar assurances will be required from new subcontractors, vendors and suppliers as such relationships are established. **A copy of our Vendor Certification package is attached at the end of this section.**

6. In the event that employees are featured in help-wanted, product or consumer advertising, employee handbooks or manuals or similar publications, both minority and non-minority men and women will be pictured and included.

II. RECRUITMENT AND HIRING

A. Contacting community agencies and educational institutions and seeking referrals of qualified individuals to increase the flow of minority and female applicants. We have contacted and seek referrals from the following affirmative action recruitment sources and educational institutions: America's Job Bank.

B. Contacting the State Division of Employment Security and notifying area and regional employment agencies of our hiring needs and equal employment opportunity policies or post employment openings with America's Job Bank. During Plan Year 2004, the Company regularly listed jobs with the following State Offices of Employment Security:

Office of Employment Security in CT, DE, MA, NH, NY, RI and VT via America's Job Bank

C. Including presentations by minority, female, disabled, older or veteran employees; explanations about the job duties and responsibilities of current and future job openings; explanations of our employee selection process; and distribution of recruiting literature when meetings are held with representatives of recruiting sources.

D. Featuring minorities and women when recruiting or consumer advertising includes pictures of employees or work situations, as appropriate.

E. Placing a reasonable proportion of our help-wanted advertising in media directed to minorities and/or women.

F. Evaluating and analyzing job requirements using job-performance criteria. Special attention will be given to academic, experience and skill requirements to insure that such specification are consistent and are free from bias on account of race, color, religion, age, disability, veteran's status, sex or national origin. Where requirements screen out a disproportionate number of candidates from protected groups, the continued use thereof will be evaluated and "validation" will be considered. We have conducted an impact ratio analysis upon all selection procedures. See the "Impact Ratio Analysis" divider tab, discussed above.

G. Selecting and training personnel involved in recruiting, screening, selection, promotion, disciplinary and related processes to eliminate bias in all personnel actions.

H. Avoiding interviewing or recruiting techniques, such as unscored interviews, consideration of arrest records or credit references, which are not reasonably related to the job in question and disparately affect a group protected by law or Executive Order 11246.

III. ADVANCEMENT IN EMPLOYMENT

With regard to our promotion and transfer procedures, we will consider the following:

A. Posting or otherwise announcing appropriate promotion and transfer opportunities. **Copies of our Job Announcements are attached at the end of this section.**

B. Compiling an inventory of academic, skill and experience levels of individual employees, including minorities and women, which are relevant to performance of jobs within each job group.

C. Initiating necessary remedial job training and work-study programs, if possible.

D. Developing and implementing formal employee evaluation programs. **Copies of our performance evaluation forms are attached at the end of this section.**

E. Assuring that job descriptions are based on job-related criteria.

F. Requiring managers and supervisors to submit written justification for their decision when apparently qualified minority or female employees are passed over for advancement, transfer or training.

G. Establishing formal career counseling programs, including attitude development, educational aid, job rotation and similar programs.

IV. SEPARATION FROM EMPLOYMENT

When minorities, women or other persons placed through affirmative action efforts or protected by law have experienced adverse personnel decisions, such as termination we will consider:

A. Sending an exit interview form to or conducting exit interviews with employees who resign to ascertain the reasons for their voluntary termination and to try and identify "voluntary resignations" that have been caused by unlawful conduct by employees or supervisors. **A copy of our Exit Interview form is attached at the end of this section.**

B. Determining reasons for such adverse decisions, including involuntary terminations, and establishing whether persons not in the protected group with similar work histories and violations of work rules have also been terminated.

C. Attempting to counsel employees about unsatisfactory job performance at least 90 days prior to involuntary termination to provide an opportunity to

correct their performance, as practicable. **A copy of our "Performance Appraisal Guidelines," which provides for a 90 day remedial period following an unsatisfactory performance review, is attached at the end of this section.**

V. COMPANY SUPPORT OF COMMUNITY ACTION PROGRAMS

The Company notifies appropriate public and private organizations, as noted throughout this Plan, of its commitment to equal employment opportunity and affirmative action and will seek referrals of minorities, women, the disabled, veterans and older workers from those sources.

A. IN GENERAL

The Company will continue to make good faith efforts to work with and support community action programs and will consider such diverse activities as:

1. Encouraging minority and female employees to participate actively in National Alliance of Businessmen programs for youth motivation.

2. Supporting vocational guidance institutes, vestibule training programs and similar activities.

3. Assisting secondary schools and colleges in programs designed to enable minority and female graduates of these institutions to compete in the open employment market on a more equitable basis.

4. Supporting programs developed by such organizations as National Alliance of Businessmen, the Urban Coalition and other organizations concerned with employment opportunities for minorities or women.

B. SPECIFIC ACTIONS

A full explanation of our support of community action programs is attached at the end of this section.

INTERNAL AUDIT AND REPORT SYSTEMS

I. DATA TO BE SUMMARIZED BY JOB GROUP AND JOB TITLE

Depending upon occurrence and frequency, summary reports will be prepared for the following actions:

A. Applicants - A record of applicant flow will be maintained showing each applicant's name, race and sex, referral source, job and job group applied for and disposition of the application (hired or rejected).

B. New Hires - Date of hire, name, race, sex, age, disability and veteran's status of the hired applicant, as well as the salary rate and position will be noted.

C. Promotions/Transfers - Date of promotion/transfer, the employee's name, race, sex, age, disability, veteran's status, as well as that employee's old and new departments, job groups, rates of pay and job titles will be recorded.

D. Terminations - (voluntary, involuntary) - Date of termination, name, race, age, veteran's status, disability, sex, position, job title, job group and salary of the terminated employee will be recorded.

II. AUDITS TO BE PERFORMED

A. This Plan will be reviewed and updated at least annually with new goals to be established after each update and review, as needed. Our plan last was updated January 1, 2004.

B. All hiring, promotion, placement, etc., will be compared with established goals to measure progress toward attainment thereof. A copy of our Placement Analysis is in the section entitled "Placement Analysis."

C. The EEO Coordinator will review progress toward meeting the goals and objectives set forth herein on a periodic basis. Following such review and discussion sessions, recommendations to remedy any unsatisfactory aspects of the Company's employment practices will be made and incorporated into the Plan. The supporting data for the audit and recommendations may be attached to the Plan.

AFFIRMATIVE ACTION PLAN FOR INDIVIDUALS WITH DISABILITIES

I. REASONABLE ACCOMMODATION

The Company endeavors to reasonably accommodate qualified disabled applicants and employees so that they can perform the essential functions of jobs at the Company. **A list of accommodations made during the current and prior plan year are included at the end of this section.**

II. REVIEW OF JOB QUALIFICATIONS

During Plan Years 2004 and 2005, the Company reviewed its job qualifications according to the following schedule: Project level positions were reviewed and updated 1/05.

III. STATEMENT OF POLICY

A. Policy

It is the policy of the Company to take affirmative action to ensure equal employment opportunity for disabled persons. This policy covers all aspects of employment including, but not limited to, hiring, assignment, promotion, demotion, transfer, termination, wage and benefit administration, and selection for training.

In order to implement this policy, the Company will make good faith efforts to accommodate the physical and mental limitations of qualified disabled employees or applicants unless such an accommodation would impose undue hardship on the Company's business, require substantial financial cost and expense, or place in jeopardy the safety of the disabled individuals, his or her co-workers, the Company's security, customers of this Company or the general public.

B. Limitations

Individuals who meet the following criteria will be considered for employment or promotion, if otherwise qualified:

1. The employee or applicant is qualified to perform the essential functions of the job or could be qualified to perform the essential functions if the Company made a reasonable accommodation.

2. The employee or applicant can perform the essential functions of the job without unreasonable risks to the safety of the individual, his or her co-workers, the Company's security or the general public.

C. Interpretation

Each disabled employee or applicant will be evaluated on an individual basis with respect to his or her ability to perform a particular job. Disabilities which interfere with the performance of a specific job shall not disqualify a person from employment in another job if the criteria for that job are satisfied.

IV. DEFINITION OF DISABLED PERSON

Federal regulations define a "disabled individual" as any person who:

A. has a physical or mental impairment which substantially limits one or more of such person's major life activities; or

B. has a record of such impairment; or

C. is regarded as having such an impairment.

V. AFFIRMATIVE ACTION MEASURES

The Company will consider the following affirmative action measures:

A. Posting, in appropriate places, informational posters or notices required by federal and state laws and regulations pertaining to the employment of disabled persons.

B. Documenting accommodations made to assist disabled applicants or employees. Such records will be supplied to and maintained by the EEO Coordinator. Department Managers and supervisors will assist the EEO Coordinator in the documentation of accommodation efforts.

C. Placing special emphasis, insofar as it is economically feasible and practical, upon the removal of architectural barriers to the disabled when designing new construction or remodeling old facilities.

D. Taking affirmative action to employ and advance in employment qualified disabled individuals at all levels of employment, including the executive level. Such action will apply to all employment practices including, but not limited to, the following: hiring; upgrading; demotion or transfer; recruitment or recruitment advertising; layoff; termination; rates of pay or other forms of compensation; and, selection for training, including apprenticeship.

1. Proper Consideration of Qualifications

To the extent possible, the Company will review its personnel procedures to determine whether such procedures assure careful, thorough and systematic consideration of the job qualifications of known disabled applicants and employees for vacancies filled either by hiring or promotion, and for all training opportunities offered or available. To the extent that it is necessary to modify personnel procedures, the Company will develop new procedures for this purpose and will incorporate them in our affirmative action program. These procedures will be designed to facilitate review by the EEO Coordinator and/or representatives of federal or state compliance agencies.

2. Physical and Mental Qualifications.

(a) The Company regularly, and at least annually, will review all physical or mental job qualification requirements to insure that, to the extent qualification requirements tend to screen out qualified disabled individuals, they are job-related, and consistent with business necessity, and/or required for the safe performance of the subject job. See Section II, above.

(b) Whenever the Company utilizes physical or mental job qualification requirements in the selection of applicants or employees for employment or any change in employment status, such as promotion, demotion or training, to the extent that qualification requirements tend to screen out qualified disabled individuals, the requirements should be related to the specific job or jobs for which the individual is being considered, consistent with business necessity and necessary for the safe performance of the job.

(c) Whenever an applicant or employee provides information about a physical or mental impairment that substantially limits a major life activity or such information is revealed through a post-offer medical examination, such information shall be kept confidential, except that:

(i) Supervisors and managers may be informed regarding restrictions on the work or duties of disabled individuals and appropriate accommoda tions;

(ii) First aid and safety personnel may be informed, when and to the extent appropriate, of conditions that might require emergency treatment; and,

(iii) Government officials investigating compliance with the Vocational Rehabilitation Act shall be informed as appropriate.

(d) Such a medical examination shall consider only job-related characteristics in a fair and consistent manner.

3. Accommodations to Physical and Mental Limitations of Employees.

The Company will endeavor to reasonably accommodate the physical or mental impairment that substantially limit major life activities for employees and applicants, unless such an accommodation would impose an undue hardship on the conduct of the Company's business. In determining the extent of our ability to reasonably offer an accommodation, the following factors, among others, will be considered: (1) business necessity; (2) financial cost; and, (3) resulting benefit to the Company and the disabled individual. See Section I, above.

4. Compensation.

In offering employment or promotions to disabled individuals, the Company will not reduce the amount of compensation offered because of an individual's receipt of disability income, pension or any other benefit from another source.

5. Outreach, Positive Recruitment and External and Internal Dissemination of Policy.

We will review our employment practices to determine whether personnel programs provide the required affirmative action for employment and advancement of qualified disabled individuals. Based upon the findings of such reviews, we will, as is appropriate, undertake outreach and positive recruitment activities, such as those listed below. It is not contemplated that we will necessarily undertake all of the listed activities or that our activities will be limited to those listed. The scope of our efforts clearly will depend upon the relevant circumstances, including our size, resources and the extent to which existing employment practices are adequate. Thus, we will consider the following:

(a) Sending written notification of the Company's EEO/AA policy commitments to vocational rehabilitation agencies for the disabled.

(b) Developing internal communication procedures to disseminate our obligation to engage in affirmative action efforts to employ qualified disabled individuals, to foster understanding, acceptance and support among our executives, management staff, supervisors and all other employees and encouraging such persons to take the necessary action to aid in meeting this obligation.

(c) Developing reasonable internal procedures to ensure that our obligation to engage in affirmative action to employ and promote qualified disabled individuals is fully implemented.

(d) Informing employees and prospective employees periodically about our commitment to engage in affirmative action to increase employment opportunities for qualified disabled individuals.

(e) Enlisting the assistance and support of recruitment sources of or for disabled individuals to assist us in our efforts to provide meaningful employment opportunities to qualified disabled individuals.

(f) Reviewing employment records to determine the availability of promotable and transferable qualified disabled individuals presently employed, and to determine whether their present and potential skills are being utilized or developed.

(g) Including disabled employees when employees are pictured in consumer, promotional or help-wanted advertising.

(h) Sending written notification of this policy to all subcontractors, vendors and suppliers.

(i) Taking positive steps to attract qualified disabled persons not currently in the workforce who have requisite skills and can be recruited through affirmative action measures.

6. Internal Dissemination of Policy

Our outreach program will receive strong support from supervisory and management personnel. To assure employee cooperation and participation in our efforts, we will adopt, implement and dissemi-

nate this policy internally, by considering use of the following procedures, as deemed appropriate:

(a) Including it in our policy manual;

(b) Publicizing it in the Company's annual report and other reports;

(c) Conducting special meetings with executive, management and supervisory personnel to explain the intent of the policy and individual responsibility for effective implementation, clarifying the Company's Policy;

(d) Scheduling special meetings with all employees to discuss the Policy and explain individual employee responsibility.

(e) Discussing the Policy thoroughly in both employee orientation and management training programs;

(f) Including articles on accomplishments of disabled workers in the Company's publications;

(g) Posting the Policy on the Company's bulletin boards, including a statement that employees and applicants are protected from coercion, intimidation, interference or discrimination for filing a complaint or assisting in any investigation of discrimination against any disabled person; and,

(h) Including disabled employees when employees are featured in employee handbooks or similar publications for employees.

7. Responsibility for Implementation.

Our EEO Coordinator will implement this affirmative action program, and will consider:

(a) Developing policy statements, affirmative action programs, and internal and external communication procedures. The procedures may include regular discussions with managers, supervisors and employees to ensure that this policy is followed. In addition, managers and supervisors may be advised that:

(i) As a general management objective, their work performance is being evaluated on the basis of their

affirmative action efforts and results, as well as other criteria.

(ii) The Company is obligated to prevent harassment of employees placed through affirmative action efforts.

(b) Identifying problem areas through discussions with management and known disabled employees, assist in the implementation of our affirmative action programs, and develop solutions to problems.

(c) Designing and implementing audit and reporting systems that will:

(i) Measure effectiveness of our programs;

(ii) Indicate the need for remedial action;

(iii) Determine the degree to which our objectives have been attained;

(iv) Determine whether known disabled employees have had the opportunity to participate in educational, training, recreational and social activities provided by the Company; and,

(v) Ensure that the Company is in compliance with applicable state law and all implementing regula tions.

(d) Serving as liaison between the Company and federal and state compliance agencies.

(e) Serving as liaison between the Company and organizations of and for disabled persons, and arrange for the active involvement by Company representatives in the community service programs of local organizations of and for the disabled.

(f) Keeping management informed of the latest developments in the entire affirmative action area.

(g) Arranging for career counseling for known disabled employees.

E. Development and Execution of Affirmative Action Programs.

The Company will consider the development and execution of the following programs:

1. Making job qualification requirements available to all members of management involved in the recruitment, screening, selection, and promotion process.

2. Evaluating the total selection process including training and promotion to ensure freedom from the stereotyping of disabled persons in a manner which limits their access to jobs for which they are qualified.

3. Selecting and training all personnel involved in recruitment, screening, selection, promotion, disciplinary, and related processes to ensure that the commitments in this Affirmative Action Plan are implemented.

4. Holding formal briefing sessions with representatives from recruiting sources, during which the Company may provide, inter alia, explanations of current and anticipated future job openings, position descriptions, worker specifications, explanations of the selection process and recruiting literature. Making arrangements for referral of applicants, follow-up with sources and feed-back about the disposition of referred applicants.

5. Including qualified disabled persons on the personnel relations staff.

6. Having employees with disabilities available for participation in career days, youth motivation programs, and related activities in their communities.

7. Incorporating special recruiting efforts at schools or other institutions to reach disabled students.

8. Participating in work study programs with rehabilitation facilities and schools which specialize in training or educating disabled individuals.

9. Using available resources to continue or establish on the job training programs.

* * * *

Although the Company does not use sheltered workshops, it realizes that contracts with sheltered workshops do not constitute affirmative action in lieu of employment and advancement of qualified disabled individuals in the contractor's own workforce. Contracts with sheltered workshops may be included within our affirmative action program, if the sheltered workshop trains employees for the Company and the Company is obligated to hire trainees at full compensation when such trainees become qualified as a "qualified disabled individual" as defined in 41 CFR §60-741.2.

F. The EEO Coordinator will post the following notice to disabled individuals:

Invitation To Disabled Individuals To Self Identify

The Company is committed to taking affirmative action to employ and advance in employment qualified disabled individuals. If you have a physical or mental impairment that substantially limits a major life activity, and would like to be considered under our affirmative action program, please tell us. You may inform us of your desire to benefit under the program after a job offer has been made and/or at any time thereafter. Submission of this information is voluntary and refusal to provide it will not affect the Company's decision whether to offer you employment or subject you to discharge or disciplinary treatment. Information obtained will be kept confidential, except that (1) supervisors and managers may be informed regarding restrictions on the work or duties of disabled individuals and necessary accommodations; (ii) first-aid and safety personnel will be informed, to the extent appropriate, of conditions that might require emergency treatment; and (iii) representatives of federal and state agencies may review such records, as required.

If you are disabled, we would like to include you under our Affirmative Action Plan. It would assist us if you tell us about (1) any special methods, skills and procedures which qualify you for jobs that you might not otherwise be able to perform because of your disability, so that you will be considered for any position of that kind, and (2) the accommodations which we could make which would enable you to perform the essential functions of the job properly and safely, including special equipment, changes in the physical layout of the job, elimination of certain duties relating to the job, or other accommodations. To participate, please see Michael Schnack, HR Manager, the EEO Coordinator.

Employees may request to see copies of the affirmative action plan during regular hours from our EEO Coordinator.

G. The Company will consider maintaining the following records concerning disabled employees covered by this policy:

(1) Annotating appropriate personnel form(s) of each known disabled individual to identify each vacancy for which that disabled individual has been considered and making such records available for review by the Company's personnel officials for use in investigations and internal compliance reviews.

(2) Placing notations on the personnel record of each known disabled employee of each training promotion for which the disabled employee has been considered, and the result of that consideration, including the reasons for any decision.

(3) Appending to the personnel file or application form a statement of reasons for rejection each time that a known disabled employee or applicant is rejected for employment, promotions or training. This statement will include a comparison of the qualifications of the disabled applicant or employee and the person(s) selected, as well as a description of the accommodations considered. This statement will be made available to the applicant or employee concerned as appropriate.

(4) Including with the application form or personnel record a description of any accommodation which makes it possible for a disabled individual to perform a job.

AFFIRMATIVE ACTION PLAN FOR COVERED VETERANS

I. REVIEW OF JOB QUALIFICATIONS

During Plan Years 2004 and 2005, the Company reviewed its job qualifications according to the following schedule: project level positions were reviewed in 1/05

II. STATE JOB SERVICES

To focus our efforts to recruit qualified covered veterans, we will also contact the State Division of Employment Security and notify area and regional employment agencies of our hiring needs and equal employment opportunity policies. **During Plan Year 2004, the Company regularly listed jobs with the following State Offices of Employment Security:**

A. America's Job Bank
http://www.ajb.dni.us/
Affiliated with:

DEPARTMENT of DEFENSE JOBSEARCH SERIOUS NETWORKING

DEPARTMENT of VETERANS AFFAIRS VOCATIONAL REHABILITATION & EMPLOYMENT SERVICE SERIOUS NETWORKING

USAJOBS "WORKING FOR AMERICA"

National Business Partnership NBP

B. POSTS on all State Job Banks via America's Job Bank

III. STATEMENT OF POLICY

A. Policy

It is the policy of the Company to ensure equal employment opportunities for covered veterans. This policy covers all aspects of employment including, but not limited to, hiring, assignment, promotion, demotion, transfer, lay off or termination, administration of wage and benefit programs and selection for training.

In order to implement this policy, the Company will make reasonable good faith efforts to accommodate the physical or mental limitations of qualified disabled veterans, unless such an accommodation would impose an undue hardship on the Company, e.g., requiring substantial cost or expense, or placing in jeopardy the safety of the individual employee, his or her co-workers, the Company's security, its customers or the general public.

B. Limitations

Individuals who meet the following criteria will be considered for employment or promotion, if otherwise qualified:

1. The employee or applicant is qualified to perform the basic requirement of the job in question or could be qualified to perform those basic job requirements if the Company were able to make a reasonable accommodation.

2. The employee or applicant can perform the requirements of the job without unreasonable risks to the safety of the individual, his or her co-workers, the Company's security, its customers or the general public.

C. Interpretation

Each veteran will be evaluated on an individual basis with respect to his or her ability to perform a particular job. Disabilities which interfere with the performance of a specific job will not disqualify a veteran from employment in another job for which the applicant or employee may be qualified.

IV. IMPLEMENTATION RESPONSIBILITY

A. Our EEO Coordinator, Michael Schnack, is responsible for the development and implementation of the Company's policy regarding the employment of veterans in compliance with the Vietnam Era Veterans' Readjustment Assistance Act.

B. In addition, all managers and supervisors are responsible for the continued implementation of the provisions of this affirmative action program in their work areas and as part of their general management objectives will be evaluated, in part, based upon their implementation efforts.

V. DISSEMINATION OF THE POLICY

A. Internal Dissemination

The Company will consider taking the following actions to internally disseminate its policy:

1. Distributing copies of this policy setting forth our affirmative action efforts to enhance the employment and advancement opportunities of covered veterans and discussing it with managers and supervisors to make certain that they are aware of our commitment to the

employment and advancement of qualified covered veterans and to elicit their understanding and support of this program.

2. Having the Company's employment and accommodation policy statement concerning covered veterans available for inspection by all employees or applicants in the EEO Coordinator's office during normal business hours.

3. Discussing our commitment to employ and promote covered veterans in appropriate management, supervisory and employee meetings.

B. External Dissemination

To the extent that it is consistent with the size of the facility and the number of job vacancies available thereat, we will consider developing contacts with appropriate local and state agencies and community service organizations which maintain programs for covered veterans. Such sources may include, but are not limited to, the Veterans Employment Representatives at the applicable state Department of Labor, Regional Veterans Administration Office and veterans' counselors on college campuses, as available and appropriate.

VI. DEFINITION

A. Disabled Veteran

"Disabled veteran" means a person entitled to disability compensation under laws administered by the Veterans Administration for disabilities rated at 30% or more or a person who is discharged for a disability incurred or aggravated in the line of duty.

B. Veterans of the Vietnam Era

Veterans of the Vietnam era are persons who:

1. Served on active duty for a period of more than 180 days, any part of which occurred between August 5, 1964 and May 7, 1975, and were discharged or released therefrom with other than a dishonorable discharge, or

2. Were discharged or released from active duty for a service-connected disability if any part of such active duty was performed between August 5, 1964 and May 7, 1975.

C. Veteran of Other Military Actions

Veterans who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

VII. ADDITIONAL AFFIRMATIVE ACTION MEASURES

The Company will consider the following affirmative action measures:

A. Endeavoring to make reasonable accommodations for the limitations of disabled veterans in those jobs where the safety of the employee, his or her co-worker, or the general public will not be jeopardized.

B. Informing employees of our commitment to the employment and advancement of qualified covered veterans and obtaining their cooperation in achieving the objectives set forth in this policy statement.

C. Posting, in appropriate places, such posters and notices as are required under the federal and state laws and regulations pertaining to the employment of veterans.

D. Documenting accommodations made to assist disabled veterans, including having the EEO Coordinator maintain such records and having department managers assist the EEO Coordinator by making and maintaining such records and documenting all accommodation efforts.

E. Endeavoring to undertake, as appropriate, affirmative actions to employ and advance in employment qualified covered veterans at all levels of employment. Our actions will apply to all employment practices, including, but not limited to, the following: hiring; upgrading; demotion; transfer; recruitment or recruitment advertising; layoff; termination; rates of pay or other forms of compensation; and, selection for training, including apprenticeship and on-the-job training programs. Thus, the Company will consider:

1. Reviewing its personnel processes to determine whether present procedures assure careful, thorough and systematic consideration of the job qualifications of known covered veteran applicants who apply for job vacancies filled either by hiring, transfer, or promotion, and for all training opportunities offered or available. In determining the qualifications of a covered veteran, the Company will consider only that portion of the individual's military record, including discharge papers, relevant to the specific job qualifications for which the veteran is being considered. To the extent that it is necessary to modify any personnel procedure, to avoid adversely affecting covered veterans, the Company will endeavor to develop such new procedures as are required to fulfill our objective. These

procedures will also be designed to facilitate review of our implementation of these requirements by compliance agencies as well as our EEO Coordinator.

2. Physical and Mental Qualifications.

(a) The Company regularly, and at least annually, will review all physical or mental job qualification requirements to insure that they are job-related, consistent with business necessity and necessary for safe performance of the job. See Section I, above.

(b) Whenever the Company applies physical or mental job qualification requirements in the selection of applicants for employment or any employee's change in employment status, such as promotion, demotion, or training, such qualification requirements will be related to the specific job or jobs for which the individual is being considered, consistent with business necessity and necessary for the safe performance of the job.

(c) Any comprehensive medical examination will be used only in accordance with the requirements of this policy. Whenever the Company inquires into an applicant's or employee's physical or mental condition or conducts a medical examination, information obtained in response to such inquiry or examination shall be kept confidential except that:

(i) Supervisors and managers may be informed regarding restrictions on the work or duties of disabled veterans and appropriate accommodations;

(ii) First-aid and safety personnel may be informed, when and to the extent appropriate, of any condition that might require emergency treatment; and,

(iii) Government officials investigating compliance with the Vietnam Era Veterans' Readjustment Assistance Act, or state law, shall be informed of data necessary to investigate compliance with said law(s).

3. Accommodation to Physical and Mental Limitations of Employees.

The Company will endeavor to make a reasonable accommodation to the physical and mental limitations of disabled veterans unless such accommodation would impose undue hardship on the conduct of the Company's business. In determining whether an accommodation will impose an undue hardship, we will consider:

(a) Business necessity;

(b) Financial costs and expenses required for or incurred as a result of the subject accommodation; and/or

(c) The impact of such accommodation on the nature of the job or the Company's practices.

4. Compensation.

In offering employment or promotions to covered veterans, we will not reduce the amount of compensation offered because of any disability income, pension or other benefit the applicant or employee receives from another source.

5. Outreach, Positive Recruitment and External Dissemination of Policy.

The Company may review its employment practices to determine whether personnel programs properly provide affirmative action for the employment and advancement of qualified covered veterans. Based upon the findings of any such reviews, the Company will consider undertaking appropriate outreach and positive recruitment activities, such as those listed below.

(a) Developing internal communication procedures to disseminate our commitment to engage in affirmative action efforts to employ and advance qualified covered veterans in such a manner as to foster understanding, acceptance and support among our executives, managers, supervisors and employees and to encourage such persons to take actions necessary to aid the Company in meeting this obligation.

(b) Developing reasonable internal procedures to ensure that our obligation to engage in affirmative action to employ and promote qualified covered veterans fully implemented.

(c) Informing all employees and prospective employees periodically about our commitment to engage in affirmative action to increase employment opportunities for qualified covered veterans.

(d) We also will consider utilizing recruiting sources such as:

(i) Local Veterans Employment Representatives at the applicable state Department of Labor nearest each establishment where hiring takes place to recruit qualified veterans;

(ii) Regional Veterans Administration representatives at the office nearest each establishment;

(iii) The Office of the National Alliance of Businessmen nearest each establishment where hiring takes place in order to participate in the Jobs for Veterans' Program.

(iv) Veterans counselors and coordinators ("Vet-Reps" and "VCIPS") on college campuses for the recruitment of covered veterans; and,

(v) Local or national veterans groups active in the area surrounding establishment where hiring and recruitment takes place.

(e) Reviewing employment records to determine the availability of promotable and transferable qualified covered veterans presently employed, and to determine whether their present and potential skills are being fully utilized or developed.

(f) Sending written notification of our affirmative action policies to all subcontractors, vendors and suppliers.

(g) Considering programs to recruit qualified covered veterans who are not currently in the workforce, have requisite skills and can be recruited through affirmative action measures. The scope of any efforts will depend upon many circumstances including our size, resources and the extent to which existing employment practices are adequate.

6. Internal Dissemination of Policy.

To make our outreach program effective, we will develop adequate internal support from supervisory and management personnel and our employees. To assure employee cooperation and participation in our efforts, we will consider implementing and disseminating our policy internally as follows:

(a) Including it in our policy manual and employee handbook, as published or revised;

(b) Publicizing it in employee publications;

(c) Conducting special meetings with executive, management and supervisory personnel to explain the intent of the policy and individual implementation responsibility;

(d) Scheduling special meetings with all employees to discuss the policy and explain individual employee responsibilities;

(e) Discussing the policy thoroughly during employee orientation and management training programs;

(f) Including articles on accomplishments of covered veterans in Company publications;

(g) Posting the policy on our bulletin boards, including a statement that employees and applicants are protected from coercion, intimidation, interference or discrimination for filing a complaint or assisting in an investigation under the Vietnam Era Veterans' Readjustment Assistance Act;

(h) Keeping management informed of the latest developments in the entire affirmative action area; and

(i) Participating in veterans "job fairs" whenever possible.

1. Recruiting efforts at all educational institutions should incorporate special efforts to reach covered veterans.

2. An effort should be made to participate in work-study programs with Veterans' Administration rehabilitation facilities which specialize in training or educating disabled veterans.

3. The contractor should use all available resources to continue or establish federally-assisted apprenticeship and on-the-job training programs under 38 U.S.C. 1787.

7. Responsibility for Implementation.

Our EEO Coordinator, Michael Schnack, will implement this affirmative action program, and will consider participating in the following:

(a) Developing policy statements, affirmative action programs, and internal and external communication procedures. The procedures will include regular discussions with managers, supervisors and employees to ensure that the Company's policies are being followed. In addition, supervisors will be advised that:

(i) As a general management objective, their work performance is being evaluated on the basis of their affirmative action efforts and results, as well as other criteria.

(ii) The Company is obligated to prevent harassment of employees placed through affirmative action efforts.

(b) Identifying problem areas, in conjunction with line management and known disabled veterans, in the implementation of our affirmative action programs.

(c) Designing and implementing an audit and reporting system that will:

(i) Measure effectiveness of our affirmative action programs;

(ii) Indicate need for remedial action;

(iii) Determine the degree to which the Company's objectives have been attained;

(iv) Determine whether known covered veterans have had the opportunity to participate in all educational, training, recreational and social activities provided by the Company; and,

(v) Ensure that the Company is in compliance with the Vietnam Era Veterans' Readjustment Assistance Act and the applicable state's Department of Labor's implementing regulations.

(d) Establishing a liaison between the Company and enforcement agencies.

(e) Arranging for career counseling for known covered veterans.

8. Development and Execution of Affirmative Action Program.

The Company will consider the development and execution of the following:

(a) Making available to all members of management involved in the recruitment, screening, selection and promotion process job qualification requirements reviewed pursuant to this policy.

(b) Evaluating the total selection process, including training and promotion, to insure freedom from the stereotyping of covered veterans in a manner which limits their access to any jobs for which they are qualified.

(c) Selecting and training all personnel involved in the recruitment, screening, selection, promotion, disciplinary and related processes to insure that the commitments expressed in this affirmative action program are implemented.

(d) Holding briefing sessions with representatives from recruiting sources, during which the Company will provide explanations of current and anticipated future job openings, position descriptions, and recruiting literature to consider arrangements will be made for referral of applicants, follow up with sources, and feedback on disposition of applicants.

(e) Including qualified disabled veterans or veterans of the covered veterans on the personnel relations staff.

F. The EEO Coordinator will post the following:

Invitation To Covered Veterans To Self Identify

The Company is committed to taking affirmative action to employ and advance in employment qualified covered veterans. If you are a

veteran and would like to be considered under this Affirmative Action Plan, please advise Michael Schnack, the EEO Coordinator. You may advise us of your desire to benefit under the program after a conditional offer of employment has been made and/or at any time in the future. This information is voluntary and refusal to provide it will not adversely affect the Company's decision whether to offer you employment or subject you to discharge or disciplinary treatment. Information obtained concerning individuals will be kept confidential, except that (i) supervisors and managers may be informed regarding restrictions on the work or duties of disabled veterans and necessary job accommodations; (ii) first-aid personnel will be informed, to the extent appropriate, of conditions that might require emergency treatment; and, (iii) representatives of federal and state agencies may review such records, as required.

In order to assure proper placement of all employees, we request that you answer the following questions: If you have a disability which might affect your performance or create a hazard to yourself or others in connection with the job for which you are applying, please state the following: (1) the skills and procedures you use or intend to use to perform the job notwithstanding the disability, and (2) accommodations which we could make to enable you to perform the job properly and safely, including the provision of special equipment, changes in the physical layout of the job, elimination of certain duties relating to the job or other accommodations.

Employees may request to see copies of the Affirmative Action Plan during regular hours from our EEO Coordinator.

G. Our EEO Coordinator will consider maintaining the following employment records concerning veterans covered by this policy:

(1) Annotating the application form and other personnel forms of each known veteran, covered by this policy to identify all vacancies for which he or she has been considered and making such forms available for review by federal and state agencies, as required, and the Company's personnel officials for use in investigations and internal compliance reviews.

(2) Annotating the personnel records or application form of each known covered veteran to: (i) identify each job, promotion or training program for which a covered veteran was considered; and, (ii) the result of that consideration.

(3) Placing a statement in the personnel or interview file in each case where a veteran is rejected for employment, transfer, promotion or training, setting forth the reasons therefor. Any such statement will include a comparison of the qualifications of that veteran and the

person(s) selected, as well as a description of the accommodations considered if the covered veteran was disabled.

(4) Describing in the personnel record any accommodations the Company undertakes which makes it possible to hire, advance, transfer or train a qualified veteran.

Appendix F

VEOLIA Water

APPENDIX F
Price Proposal – Supporting Information

In this Appendix, **Veolia Water North America – Northeast, LLC (Veolia Water)** provides information that supplements that presented in our Price Proposal for the Base and Innovative (Alternative) Proposals. This includes a discussion of Performance Incentives, as well as the Maintenance and Capital Program and Supplemental Engineering Services.

Annual Performance Incentive Fee – Base Proposal

In this discussion, Veolia Water outlines our proposed Annual Performance Incentive Fee Program, an important feature of both the Base and Innovative (Alternative) Proposals. This Appendix section provides explanatory information so that performance incentives being offered as a part of our Base Proposal may easily be understood. Section Two of our Price Proposal (Volume II) provides a discussion of the performance incentives for the Alternative Proposal.

Performance Incentives are an important tool to help the **City of Nashua's** stakeholders and regulators, as well as Veolia Water and its soon-to-be-employees, focus on the **most important key drivers of the business**. Performance Incentives financially reward Veolia Water for significantly improving performance. They also provide the City of Nashua and the community a vital tool to objectively judge our firm's project performance. Public openness about performance appears to be a particularly important issue to Nashua stakeholders.

The incentives presented in this section are specific to Veolia Water's Base Proposal, which offers customer services related to utility operations, except items related to customer billing and collections and the supporting activities.

Under the project approach defined in the Base Proposal, the City of Nashua will provide all of the administrative support required for handling customer inquiries, bill generation, payment processing and collection. Veolia Water assumes that the City will also maintain the accounting systems to track billing, payment and collection activities.

As an introduction to performance incentives, here is an example of an incentive currently in use at a Veolia Water customer service contract, one that includes billing and payment processing:

- The basis of this incentive involves: answering incoming calls within 30 seconds – increase success rate by 3% per year to 88% by 2006.
- This is an excellent call center response rate, and Veolia Water earned this incentive in 2004 by answering 82.7% of customer calls at this project within 30 seconds.

Like many other successful organizations, Veolia Water requires its managers to set performance goals, and these managers and their staff are subsequently rewarded for accomplishing those goals. Veolia Water has applied this same concept of setting goals and rewarding performance to its customer service, operations and maintenance contracts with municipal utilities with much success. For example, Veolia Water successfully utilized this leading-edge methodology in its customer service, operations and maintenance contract with the City of Indianapolis Department of Waterworks. In this contract, challenging improvement goals were mutually established, and Veolia Water may earn an incentive fee annually for meeting each incentive goal.

Use of this methodology enabled Veolia Water to **significantly improve performance during a three-year period, resulting in improved customer service, water quality, maintenance and compliance**. Overall customer satisfaction among Indianapolis water customers in 2004 was above the national average for utilities (70%) with more than 8 of 10 customers saying that Veolia Water is doing an "excellent" or "good" job. Customer satisfaction has improved each year since Veolia Water began managing the waterworks in Indianapolis, demonstrating that performance incentives and good management are highly effective.

Veolia Water is "the contractor" with significant experience in managing to performance incentives. Competitors typically have contracts that penalize them for bad performance, but **Veolia Water's performance incentive methodology rewards significant and objective performance improvements**. There is a big difference in these two approaches and the outcomes. Veolia Water's experience shows that rewarding performance improvements results in higher customer, and therefore client, satisfaction and a higher level of overall performance, compared to the penalty-fee methodology most of its competitors use.

Benefits of Performance Incentives to Nashua

Under the Base Proposal approach, Veolia Water is proposing a set of performance incentives that will deliver the following benefits for the City of Nashua:

- Performance incentives establish an **objective methodology** for the City of Nashua and its citizens to evaluate Veolia Water's true performance, especially in the areas of water quality, watershed management, compliance and responsiveness to customers.
- There are many firms qualified to run water treatment and distribution operations, but **there are few firms that are willing to place themselves under open scrutiny and to hold themselves to high performance improvement goals.** We welcome communication about our performance to the citizens of Nashua. Veolia Water typically posts this performance data on its Web site for public review. Veolia Water's openness to public review and scrutiny is likely to be appreciated by Nashua's citizens.
- Based on our past experience, use of performance incentives in Veolia Water's contract with the City of Nashua will result in **improved customer satisfaction and increased overall performance**, and this marked improvement will be easy to demonstrate to the citizens of Nashua.

Objectives

Veolia Water will provide Nashua a set of quantifiable measures against which:

- Over the term of the contract, serves to reward Veolia Water for providing an ever-increasing standard of performance to Nashua.
- Can objectively determine the allocation of the Incentive Fee .
- Offers stakeholders an objective method to measure and evaluate performance.

Methodology

The ways in which the performance incentive approach for Nashua will be implemented under the Base Proposal include:

- The performance incentives, year-to-year improvement goals, incentive dollar values, and the methodology for measurement will be mutually agreed upon prior to the contract onset. The performance incentives will be challenging and provide Veolia Water with stretch goals to improve performance and maintain accountability to the City of Nashua.
- Veolia Water will thoroughly document incentive performance. On an annual basis, performance will be evaluated by the City of Nashua.
- Upon completion of the City's evaluation at yearend, Veolia Water will be awarded an incentive fee from the City of Nashua for each performance incentive earned.

Veolia Water is committed to continually improving the level of service provided to the City of Nashua's customers while increasing overall customer satisfaction, stewardship of the watershed, and openness to public review. Performance incentives are an important tool that Veolia Water has used very successfully to accomplish these important goals for other clients, and Veolia Water welcomes the opportunity to use similar performance incentives in its proposed contract with the City of Nashua. Based on our past experience, Veolia Water believes that the use of performance incentives will result in increased customer satisfaction and positive recognition for the City of Nashua for selecting this innovative and effective approach to contract performance.

Maintenance and Capital Project Definitions

Veolia Water offers the following definition for a City Capital Project:

- City Capital Project means:
  - (i) item(s) that will be of a long-term nature having a useful life in excess of three years, as defined by manufacturers' specifications
  - (ii) those items that require a modification, alteration, addition to, and/or improvement to an existing facility with a construction, installation (including materials) or purchase value in excess of $5,000
  - (iii) repair or replacement of equipment that has met or exceeded its useful life with a construction, installation (including materials) or purchase value in excess of $5,000
  - (iv) items for construction, placement of new facilities (e.g., piping, hydrants, valves, equipment, wells, etc., including material costs) and capital purchases that significantly improve operations and or maintenance, aesthetics, long-term capital conditions or other aspects not generally associated with ongoing operations and maintenance.

Capital project costs will include field work, engineering, and inspection services.

Capital Replacement Projects

A Capital Replacement Project, for the purposes of this proposed O&M (operations, maintenance and management) services contract with the City of Nashua, can be defined as one that does not include preventive, predictive, routine and or periodic maintenance activities. Listed below are examples of City Capital Projects:

- Growth projects, including the addition of new customers. The addition of new customers, including, but not limited to, the tap, service line, meters and other appurtenances to support the growth, with any required engineering, review and inspection included. The addition of new customers will not be subject to the $5,000 rule.
- New and replacement vehicles and heavy equipment.
- Individual painting of facilities, equipment, tanks, etc., with a value of over $5,000.
- Pump and/or motor repair or replacement repair, with a projected cost of over $5,000.
- Well and well pump maintenance, with a projected cost in excess of $5,000.
- New or replacement wells and abandonment of old wells.
- Driveway and parking lot replacement or resurfacing, with a projected cost in excess of $5,000.
- Vehicle repair or replacement, with a cost estimate of over $5,000.
- Installation of new water main and appurtenances.
- Replacement or rehabilitation of existing water mains, service lines and associated appurtenances.
- Modifications, replacements and relocations to facilitate public works projects.
- Valve replacements and new installations, all of which are not subject to the $5,000 rule.
- Hydrant replacements and new installations, all of which are not subject to the $5,000 rule.
- Repair or replacement to any facility, with a projected cost of over $5,000.
- New fencing identified as a result of security and safety audits or associated with a Capital Project.
- Tank installations.
- Chemical conversion projects.
- Telecommunications, computer and software systems
- Meter replacements, which are not subject to the $5,000 rule.
- Any structural failures to fixed assets, such as treatment facilities, dams, etc.
- Clean out of sludge storage lagoons, if over $5000.

Planned Maintenance Definition

The Planned Maintenance to the Water Works system that will be provided by Veolia Water under this proposed O&M contract with the City of Nashua will be as follows:

1. Inspect and exercise all system valves annually. Valves will be located, boxes cleaned out, raised or lowered if required and the valve will be turned to ensure proper operation. Measurements will be verified (if available) or created and recorded on valve records. The City will be furnished with a copy of the updated valve records annually. Valve replacements will be either Unplanned Maintenance or City Capital.

2. Inspect and operate all City-owned fire hydrants once each year. Locate and inspect each hydrant to ensure proper operation, paint and make sure each hydrant barrel is properly drained. Hydrant records will be updated, if available, or a hydrant record system will be created to provide proper record keeping. Hydrant replacements will be either Unplanned Maintenance or City Capital.

3. Conduct an annual flushing program. Schedule an annual main flushing program to flush sediment and corrosion particles from the distribution mains. Provide the City with advance notice of the planned flushing dates, advertise the program in a newspaper having general circulation in the City to alert customers and conduct the program at a time of minimal disruption to customers.

4. Collect and analyze water samples from the system in accordance with State of New Hampshire Department of Environmental Services (NHDES) regulations, NHDES Env-Ws 325.

5. Use reading devices provided by the City, read meters of system customers and meters for non-system sewer customers on a monthly basis. Readings will be turned over to the designated agent in the City when the routes are completed. The City will provide Veolia Water with pre-programmed devices with routes preloaded and ready to read.

6. Test meters in accordance with the regulations of the State of New Hampshire's Public Utilities Commission (NHPUC), NHPUC Rule 605. Meters, which register outside a range of 97-103%, will be removed and replaced with an accurate meter from stock or from the new-meter inventory. All replaced meters will be sealed to prevent tampering. Meters that fail the test will be repaired and/or replaced. For meters that are impractical to repair, the meter will be scrapped. Veolia Water will update a meter record if available for the City, or establish a meter record maintenance system. Meters that have been damaged due to abuse tampering or neglect will be repaired at the City's expense as part of Unplanned Maintenance, pursuant to the fee schedule that is defined in the O&M Services Agreement with the City.

7. Locate and mark out all Water Works system water mains and mark water services in the right of way when requested by City, contractors or when required by Dig-Safe. Upon receipt of notices of planned construction in City service areas, respond within a defined time period to locate and mark the street where the system is located.

8. Implement a backflow prevention and cross-connection program in accordance with the requirements of the NHDES. The cross-connection backflow prevention program for communities serving more than 1,000 persons must be approved by the NHDES. The backflow prevention devices are owned and maintained by the customers. Veolia Water's backflow prevention program is outlined in our Technical Approach (see Volume I, Section One).

9. Perform service disconnects (shutoffs) and reconnects for enforcement of payment of accounts or for other violations of the City's rules pertaining to water service. The City will prepare a list of services to be shutoff for non-payment or other reasons and forward to Veolia Water. The shutoffs and reconnects shall be scheduled and conducted during normal business hours, Monday through Friday, excluding holidays. After-hours calls will be billed under Unplanned Maintenance.

10. Respond to customer requests for service in a timely, courteous manner. These requests will include turning services on or off at the curb box, checking for leaks, re-reading meters, checking water quality and generally communicating with customers and responding to their concerns.

11. Make visits to each of the booster pumping stations and well fields on a scheduled basis. Inspect the equipment, make necessary adjustments, provide routine lubrication, provide corrosion control, inspect controls and instrumentation, change record charts and perform other appropriate routine tasks. Any abnormalities will be identified and reported to the City for further direction. The City will pay all utility bills associated with the booster facilities.

12. Perform preventive and predictive maintenance of all water treatment equipment. This includes all equipment for the collection of, treatment of and distribution of water. Any abnormalities or corrective action required will be identified and reported to the City for further direction.

13. Perform preventive and predictive maintenance on all pond system equipment. Structural failures would be considered City Capital by definition, as would major maintenance activities.

14. Meet formally with the City on a monthly basis during the term of the Agreement to coordinate and review the actions of the Veolia Water and the City in terms of implementing the Planned Maintenance, Unplanned Maintenance, and Engineering Services contemplated in the Agreement.

Unplanned Maintenance Definition

Planned Maintenance is defined and measurable and generally allows for reasonably accurate budgeting. Unplanned Maintenance is very difficult to predict. The Water Works system is susceptible to breakage from age, freezing, defective material, improper installation, shifting of soils due to movement created by frost or ice, damage by contractors or others excavating near mains and services. Due to the difficulty in forecasting the occurrences of Unplanned Maintenance, Veolia Water recommends that the City of Nashua establish a Maintenance Fund for Unplanned Maintenance expenditures.

Veolia Water will provide Unplanned Maintenance for the Water Works system, for which our firm will be compensated, pursuant to the fee schedule provided in our Price Proposal (Volume II).

Under our proposed Innovative (Alternative) Approach, Volume II – Section Two of our Price Proposal, Veolia Water has proposed a cost-sharing approach to control and share the risks associated with Unplanned Maintenance expenditures. Unplanned Maintenance typically includes the following:

1. Responding to and repairing emergency leaks on mains, valves, hydrants, services and meters.
2. Replacing main sections, valves, hydrants, services and meters that are impractical to repair.
3. Replacing valves or hydrants, which are found to be defective during inspection and maintenance activities.
4. Thawing and/or repairing frozen mains, services, hydrants and meters.
5. Responding to emergencies created by fires, floods or other natural disasters.
6. Installing flushing valves on dead end mains to clear lines.
7. Adding water treatment plant equipment such as pumps and motors.

Supplemental Services

Water systems are constantly expanded and affected by changing conditions and customer demands. As requested in the RFP, Veolia Water has proposed a list of Supplemental Services that can be requested by the City of Nashua.

As discussed in our Technical Proposal (Volume I), Veolia Water will, using our in-house resources as well as those of our proposed engineering/construction services subcontractor, Dufrense-Henry, provide engineering and construction management services required for meeting the Supplemental Service requirements for the Water Works system, for which we will be compensated as Supplemental Services, pursuant to the fee schedule defined at the end of this Appendix.

Scope of Work

Supplemental services under this proposed O&M services contract with the City of Nashua will be considered as engineering and construction services that will be defined as including the following:

1. **Reviewing new construction in the City.** This will include meeting with developers and other City customers who request main extensions or new service installations. Review plans, establish appropriate sizing of facilities (may require additional services under item 6 below) and provide standards and specifications.
    - **Item 1.a & 1.b: Review of an individual Residential service assumes a maximum of a two-hour effort, for Commercial or Industrial services assumes a maximum of four hours; any complications or extenuating circumstances that require significantly more time will be billed at the Project Engineer hourly rate.**

- Item 1.c: Main extension can vary significantly in terms of the complexity and time required to perform an adequate review and to meet with the customer's engineer; therefore, these services will be provided on an hourly rate basis for a Project Engineer. Customers will be given a Review Fee estimate based on the size and complexity of project prior to beginning review.
- Item 1.d: Customers will be provided a hard copy of the Standard Water Main, Services and Appurtenances Specification upon request for a fixed fee.

2. Inspecting new construction. Provide on-site inspection of new installations to ensure compliance with City standards and specifications.

   - Item 2.a: This item does not include full-time inspection, but only the time required to make one inspection prior to backfilling a service, observe pressure testing, verifying that the as-built drawing provided by the customer are correct, and inputting the as-built record into the City system. Complications or extenuating circumstances that require significantly more time will be billed at the Project Engineer hourly rate.
   - Item 2.b: This item does not include full-time inspection, but only time required to make inspection during critical times prior to backfilling to verify compliance with stand specifications, observe pressure testing, verifying that the as-built drawing provided by the customer is correct, and observing disinfection of new facilities and appropriate follow-up bacteriological sampling before activation of lines. Complications or extenuating circumstances that require significantly more time will be billed at the Project Engineer hourly rate.

3. Creating as-built records. Create an as-built record of new installations on an AutoCad file. Copies of all such files would be provided to the City. For individual services, the customer will be responsible for supplying the as-built AutoCad file and Veolia Water will only enter the file into the City's system per item 2.a above.

   - Item 3.b: For Developer Projects, the customer will be responsible for supplying as-built records in an acceptable digital format and Veolia Water will enter this information into the City system on a rate per drawing.
   - Item 3.c: In cases where a Customer or the City requires Veolia Water to create an as-built AutoCad file, the work will be performed on an hourly rate basis for an AutoCad Technician.

4. Veolia Water assumes that the City will provide a reasonably accurate GIS map of the water system; however, there may be needs to provide updates on mains, hydrants and gate valve records. The updates to the City's distribution mapping will be provided on an hourly rate basis for an AutoCad Technician. Any required field location or verification will be provided on an hourly basis by a Field Engineer.

5. Assessing "unaccounted for" water (system tightness assessment). At least once each year, summarize and compare water production records with total system consumption as measured through customer meters. If the unaccounted for amount is in excess of 10%, Veolia Water will conduct a leak detection program to identify lost water and implement action to mitigate water lost in the system due to leakage.

6. Preparing hydraulic modeling and analysis. Veolia Water assumes that the City will provide a working hydraulic model containing detailed computer files on the

primary pipes, nodes, booster pumps (etc.) and storage of the distribution system.

- Item 6.a: Veolia Water will become familiar with the hydraulic model and distribution system, and we will be prepared to run specific queries for system improvements, fire flow determination or analysis of developer projects for a lump sum price.
- Item 6.b: Veolia Water will provide system analysis to identify hydraulic bottlenecks, and low pressure areas, and also develop recommendations for additions and improvements on an hourly rate basis for a Senior Project engineer and Staff Engineer.
- Item 6.c: Assess the impact of future growth on the system for Developer projects; man-hours required to perform this analysis will be based on complexity of project, location within the system and number of iteration required. The cost will be based on hourly rates for a Senior Project Engineer and Staff Engineer, and an estimate will be provided to the Customer prior to commencement of work.

7. **Performing annual pump efficiency checks.** Conduct an annual pump efficiency check for each booster-pumping unit and make recommendations to the City for maintenance, repair or replacement required to maintain pumping capacity at optimum efficiency levels.

8. **Preparing the Fire Flow test and report.** Provide a Field Technician to perform fire hydrant flow tests, which includes operating the hydrant, the flow meter and the pressure gauge during hydrant test, taking readings and providing a summary report to the City and the customer requesting the test.

9. **Performing specialized watershed engineering studies.** Veolia Water will provide watershed management centered on the goals of protecting and improving the source water quality of the Water Works, developing water withdrawal protocols that ensure optimal source water quality and source water management, developing and implementing best management practices, and watershed water quality research and analysis to further understanding of the watershed and its long-term health. Veolia Water will work with the City of Nashua and environmental groups such as the Pennichuck Watershed Council to develop long-term strategies for the watershed. These services will be provided on an hourly rate basis for a Senior Project Engineer. Or, if the scope of services warrants, these services will be provided by a third-party under contract with Veolia Water and billed at cost plus Administrative Fee to the City.

10. **Implementing Capital Planning for water system improvements.** Veolia Water will meet with the City to review priorities and set goals for the overall Water System Capital Program. In our role as the O&M services provider to the City, Veolia Water will not only prepare the appropriate draft plans for City's review, but more importantly, we will bring to this project: creativity and innovation in the assessment of situations; the ability to effectively address cost and water quality needs; the capability to conceptualize alternatives; as well as the capability to develop recommendations that integrate with overall water quality and service goals. The planning function will be an ongoing activity that will provide a five-year plan with annual updates and recommended capital for the upcoming fiscal year. These services will be provided at no additional cost. Detailed plans, engineering and construction cost estimating will be provided as an additional services as outlined in

item 11 below.

11. **Providing other engineering services, as required by the City.** Veolia Water will supply other engineering services for: capital planning; capital execution; detailed engineering studies; and GIS projects, on hourly rates based on the following rate schedule or will negotiate lump sum priced proposals on specific scopes of work as requested.

Service Fee Schedule for Supplemental Services

As requested in the RFP, Veolia Water has proposed a list of Supplemental Services that can be requested by the City of Nashua.

Our firm, using our in-house resources and those of Dufrense-Henry, proposes to perform these services in addition to the Services provided as part of our fixed fee for the O&M contract.

Two tables are presented below, with Table III.F-1 outlining those services that Veolia Water felt would best serve the City of Nashua and this partnership, and Table III.F-2 provides an hourly rate schedule for the classifications of staff that would be involved in the delivery of these supplemental services.

Table III.F-1. Veolia Water – Proposed Service Fee – Supplemental Services

	Service	Price
1	New construction plan review	
	a. New services: Residential	$200 per service
	b. New Service: Commercial or Industrial	$400 per service
	c. Main extensions (varies with extent of each project)	$106/hour
	c. Provide standard specifications	$50 per set
2	Inspect new construction	
	a. Domestic services, including as-built	$160 per service
	b. Mains and fire services	
	First 100 ft.	$400
	Plus next 400 ft.	$3 per foot
	Plus over 500 ft.	$2.50 per foot
3	As-built records	
	a. Services –	See 2 a. above
	b. Mains – assumes all plans provided to City in acceptable digital format	$400 per sheet
	c. Create Digital as-built Records	$62/hour (AutoCad Technician)
4	Updates to GIS mapping	
	a. Pipe records from as-built	$62/hour (AutoCad Technician)
	b. Service records from as-built	$62/hour (AutoCad Technician)
	c. Gate valve and hydrant records	$62/hour (AutoCad Technician)
	d. Field location of service, valves or gates	$75/hour (Field Engineer)
5	Unaccounted for water audit	Cost included in Base Fee

Table III.F-1. Veolia Water – Proposed Service Fee – Supplemental Services		
	Service	**Price**
6	Hydraulic modeling and analysis	
	a. Base Modeling – assumes the City provides working model and data.	$5,000/lump sum
	b. System improvement analysis	$90/hour (Staff Eng.) & $106/hr (Project Engineer) as required
	c. Model run for developers	$90/hour (Staff Eng.) & $106/hr (Project Engineer) as required
7	Pump efficiency tests – annual, all 4 stations Assumes all pumps are metered, pressure taps are installed and pump curves are available	Cost included in Base Fee
8	Fire flow tests, includes report to City	$300 per test
9	Watershed engineering studies	$125/hour (Senior Project Engineer)
10	Capital planning	Cost included in Base Fee
11	Billing and collection – charged in $/ customer/month. For the 24,500 PWW Customers.	$1.47/customer/month
12	Billing and collection – charged in $/ customer/month. For the next 20,000 customers added to the System.	$1.82/Customer/month
13	Customer surveys – fixed price	$22,000
14	Other services	See attached Rate Schedule
	Contractor will charge the City for Engineering Services on a time and materials basis. For each task to be performed, Contractor will submit an estimate to the City. At the completion of the project, Contractor will submit an invoice to the City for the work performed.	
	Annual Adjustment to Fee Schedule – The fee schedule for engineering services shall be adjusted on each anniversary date of the Agreement, same adjustment factor applied to the Fixed Fee.	

Table III.F-2. Hourly Rate Billing Schedule		
Position	**Tasks/Responsibilities**	**Billing Rate**
1- Senior Project Manager	Client relationship, coordinates & oversees work	$156/hr
2- Project Manager	Schedules, budgets, procurement, project coordination.	$135/hr
3- Senior Project Engineer	Studies/planning/engineering	$125/hr
4- Project Engineer	Plan review, GIS & hydraulic modeling	$106/hr
5- Field Engineer	Construction observation, field measurements, data collection	$78/hr
6- Staff Engineer	Support Studies/eng/modeling tasks	$90/hr
7- AutoCad Technician	Preparation of drawings & as-builts, GIS updates	$62/hr
8- Senior Resident Inspector	Inspects construction, field reports	$95/hr
9- Resident Inspector	Inspects construction, field reports	$84/hr
10- Administrative support	Administrative functions	$60/hr

Appendix G

VEOLIA Water

APPENDIX G
Capital Program Management – Value Engineering

Veolia Water North America – Northeast, LLC (Veolia Water) provides the additional information presented in this Appendix to document the opportunities for process improvements, reduced chemical costs, and reduced Capital Expenditures over the next five years of this operations, maintenance and management (O&M) services contract with the City of Nashua, New Hampshire.

Surface Water Treatment Plant

The "*Water Treatment Plant Evaluation and Capital Improvement Plan*" prepared by Fay, Spofford & Thorndike (FST) dated May 7, 2004, recommended the implementation of Alternative I at an estimated cost of $31.5 million.

Alternative I is presented as a cost-effective alternative that includes implementation of a number of source-water management strategies as well as key improvements at the water treatment plant, such as increasing the filter media depth and adding approximately 6.5 million gallons of finished water storage.

Veolia Water believes that several modifications could be made to the suggested alternatives that would result in better water quality, savings in chemicals, equipment and efficient plant operations. We have addressed these modifications in the paragraphs that follow.

G.1 - Raw Water Quality Management

The FST report recommended hypolimnetic aeration for the Pennichuck Brook Pond system (Bowers, Harris and Supply in-pond improvements) as one of the source-water management methods. However, hypolimnetic aeration is normally recommended for deeper lakes and reservoirs (depth greater than33 feet), needs a large hypolimnion to work properly and its use in shallow lakes and reservoirs should be viewed with caution.

The effectiveness of this approach depends on the proper design and sizing in relation to oxygen demand and may increase eddy diffusion of nutrients to epilimnion even if stratification is maintained. As the depth of the ponds varies between 18-25 feet, Veolia Water proposes artificial circulation/mixing to maintain a uniform temperature and DO throughout the water column, reduce algal proliferation and the formation of taste and odor compounds. This will also alleviate the formation of anoxic zones and the release of iron and manganese from the sediments. The raw water with a uniform temperature will result in improving the performance of the Pulsator® process (in the water treatment plant) as well.

The objective of circulation/mixing is to prevent or reverse the anoxic conditions that can develop in the deeper water of a lake or reservoir in the summer. Proper mixing will also lead to an isotherm and a uniform dissolved oxygen condition in the lake or reservoir.

Veolia Water proposes the SolarBee® artificial circulation systems (manufactured by Pump Systems, Inc., Dicknison, ND) for use in the Pennichuck Brook Pond system to improve overall water quality (uniform temperature, enhanced dissolved oxygen, reduced iron, manganese, phosphorus, ammonia, etc.) and reduce algal proliferation.

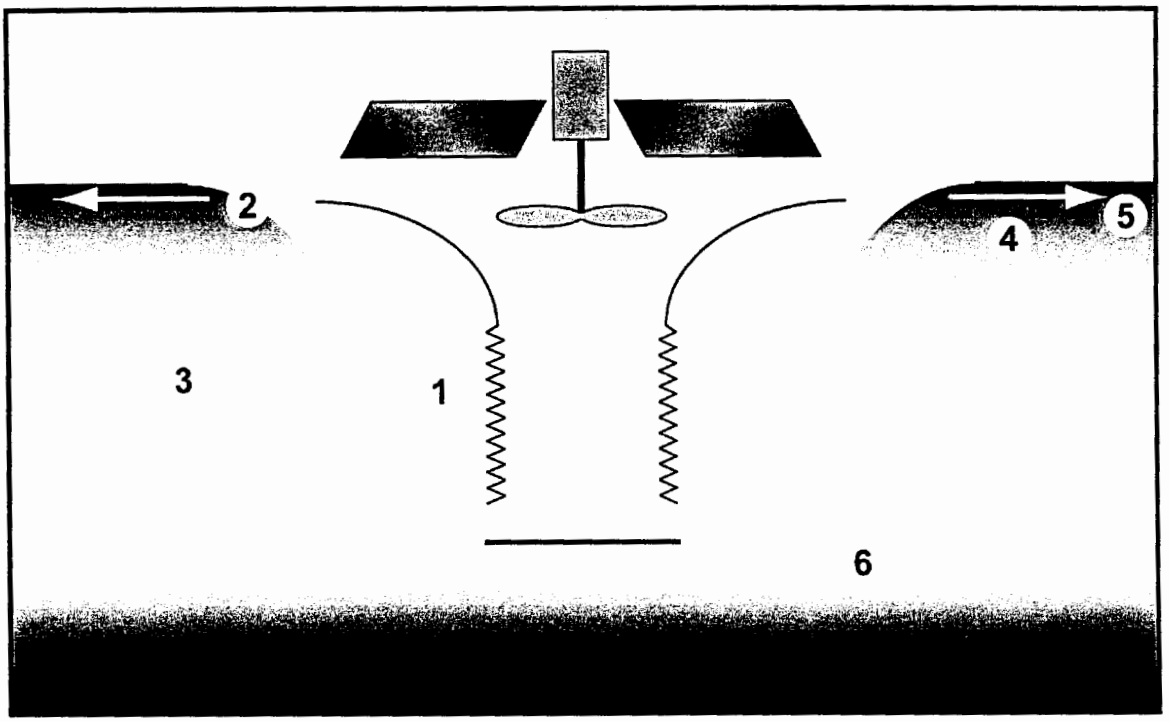


Figure III.G-1: Schematic of SolarBee: Solar Powered Reservoir Circulator

The SolarBee circulation system reveals a new paradigm for eutrophication control. Rather than trying to limit overall algal growth through reductions in nutrient (primarily phosphorus) availability, the SolarBee circulation prevents blooms of blue-green algae (cyanobacteria) through habitat disturbance. This form of bio-manipulation selects against bloom-forming blue-green algae while favoring non-blue-green algae. A brief description of the SolarBee equipment and its operation is presented in the paragraphs that follow.

The SolarBee aeration systems are powered by solar energy and can operate 365 days per year (see Figure III.G-1, above). The SolarBee is a floating solar-powered pond and reservoir circulator constructed of stainless steel and corrosion-resistant polymers. This 16-foot diameter machine draws up to 10,000 gallons per minute from a specific depth and spreads it gently across the top of the reservoir for continuous surface removal, effectively creating a continuous circulation pattern in the waters above the intake depth. As blue-green algae require quiescent waters for optimal growth, they do not thrive well when the reservoir's surface is continually disturbed (Pearl, 1995). This SolarBee-induced water movement has shown to be consistently effective at preventing blue-green algae blooms in more than 80 fresh and salt water bodies throughout North America, since first introduced for this application in 2002. The ability of the SolarBee system to effectively eliminate blue-green blooms by maintaining surface water turbulence has been well-documented in other lakes where they have been installed (Pontius, 2003).

The intake hose of this system is up to 36 inches in diameter, depending on the model, and the intake depth can be configured for 3-100 feet deep, with 16 feet of adjustment. The SolarBee's mixing action greatly accelerates the biological and solar processes that aerate and clean up the water, resulting in an environment that is more uniform in dissolved oxygen and temperature throughout the water column and less conducive for algal proliferation.

Table III.G-1, below, shows the estimated cost of artificial circulation utilizing the SolarBee systems. The cost of the hypolimnetic aeration system recommended by FST is also presented for comparison. By adopting the SolarBee system a net savings (NPV) of $571,300 can be realized.

Table III.G-1. Estimated Cost of Artificial Circulation (SolarBee System)

Pond	SolarBee System		Hypolimnetic Aeration (Recommended by FST)	
	Capital Cost ($)	Annual O&M Cost ($)	Capital Cost ($)	O&M Cost ($)
Bowers	78,000	600		
Harris	78,000	600		
Supply	38,000	300		
Total	194,000	1500	633,000	15,000
NPV (20 years, i=8%)	208,700		780,000	
Net Savings	571,300			

G.2 - Optimizing Coagulation

FST recommends that jet pump mixers be used to improve chemical dispersion for optimizing coagulation. However, jet pump mixers are not efficient in terms of producing a homogeneous suspension of the coagulant, and the O&M costs of these units are significant. Efficient mixing of the coagulant and coagulant aid is critical for efficient operation of the downstream Pulsator.

Veolia Water recommends installing static mixers in the raw water lines (42- and 48-inch diameter), as they offer the following advantages: 1) they are very efficient in terms of producing a homogeneous suspension in a vessel of much smaller size, shorter hydraulic retention time, and have good mixing efficiency; 2) near plug flow with a high degree of radial mixing promoting micromixing; 3) low maintenance, reliability and retrofitability with low headloss; 4) chemical saving (10-20%), compared to conventional rapid mixing; and 5) low capital and O&M costs.

If site conditions permit, open channel mixers can also be considered for efficient mixing of the chemicals, and these types of units provide a low capital and O&M costs, compared to jet pump mixers.

Table III.G-2, which follows, shows the options for chemical mixing as compared to the jet pump mixers recommended by FST. As seen from this Table, by selecting open channel mixers or static mixers the net savings can be as much as $1,504,240.

Table III.G-2. Headworks Evaluation and Options for Mixing Chemicals				
Options for Mixing	Capital Cost ($)	Annual O&M Cost ($)	NPV (20 Years, i = 8%)	Net Savings ($)
Jet Pump Mixers (FST)	1,355,000	24,000	1,586,000	
Static Mixers*	96,000	2,000	115,600	1,470,400
Open Channel Mixers*	70,000	1,200	81,760	1,504,240
* Does not include the cost savings realized in chemical usage (10-20%)				

G.3- Alkalinity Supplementation, pH = 7.5

FST recommended caustic soda and carbon dioxide over hydrated lime and carbon dioxide. The LCC of hydrated lime ($2.14 million) is higher than the LCC of caustic soda ($1.62 million) which is puzzling (lime is almost 1/6 the cost of sodium hydroxide).

Assuming capital costs are similar for both systems, the operational savings by continuing to use hydrated lime could be as much as $117,000 per year, or on an NPV (20 years, i=8%) basis, $1,146,600. Some changes will be needed on site to produce a better gradation of lime (e.g., using high quality make-up water) to minimize the operational issues associated with its use.

Total CIP Savings: $571,300 + $1,504,240 + $1,146,600 = $3,222,140.