



Submitted to:



City of Flint, Michigan
Department of Purchases & Supplies

**Response to
Invitation to Bid
Water Quality Consultant
Proposal No.: 15-573**

January 29, 2015

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January 29, 2015

Mr. Derrick F. Jones
Purchasing Manager
City of Flint
Department of Purchases and Supplies
1101 S. Saginaw Street, Room 304, Third Floor
Flint, Michigan 48502

**Subject: Response to Invitation to Bid – Proposal No.: 15-573
Water Quality Consultant**

Dear Mr. Jones:

In response to your Request for Bid/Proposal (RFP), **Veolia Water North America Operating Services, LLC** (Veolia) is pleased to have the opportunity to provide this letter submittal. We have prepared a response that is focused on providing the **City of Flint** with a complete solution to address the immediate reliability and operational needs of your water system throughout your continuous operations – whether under the current draw from Flint River or future draw from Lake Huron.

In reviewing the challenges that the City of Flint is facing, we present a longer-term approach for the Operational Evaluation Report, which involves implementation and monitoring through 2016 and the transition to Lake Huron supply. Our commitment to the City of Flint is to make sure the utility can identify the immediate issues through the proposed report, and also secure its future by addressing and fixing these issues identified in the report, build capacity for the future, and better manage the change in water sources in 2016.

Depending on the City's preference, Veolia's expertise to reinforce operations is available to Flint through performance advisory services using our innovative Peer Performance Solutions (PPS), or through longer-term contract operation and maintenance (O&M) type services. Both approaches are designed to help the City of Flint benefit from operational reliability and utility-wide efficiencies.

— With the PPS approach, Veolia addresses fundamental issues from the ground-up to deliver improved reliability, compliance and efficiencies for major water and wastewater agencies. Under this model, our Subject Matter Experts (SMEs) would work in collaboration with the City's management team, your line managers and your operators to develop the path forward that suits your needs – both now and into the future. Over the course of this process the City remains in control of all levels of management at all times and benefits from Veolia's expertise through the support of a small team of on-site experts, who in turn can access the rest of our company's worldwide resources.

Veolia's PPS approach is highly data-driven to identify and implement cost savings and deliver utility optimization and organizational best practices. One key example of this model at work is in our ongoing contract with the Pittsburgh Water & Sewer Authority (PWSA). That partnership began in 2012 and was just (this past month) extended for a new term. Working with PWSA, Veolia is implementing a long-term strategy to improve water quality and customer service, increase efficiency, and overcome financial challenges.

PWSA serves the needs of more than 310,000 people in the greater Pittsburgh area, and Veolia assisted them in realizing more than \$5.5 million annually in recurring revenue and efficiencies. This involved working with PWSA to establish a Distribution System Optimization Plan with the State of Pennsylvania, to implement a Process Control Management Plan at their water treatment plant, to identify early warnings for non-compliance trends, to update their laboratory Quality Control/Quality Assurance (QA/QC) program, to initiate performance monitoring methods, and to initiate the use of compliance metrics in order to improve relationships with regulatory agencies. We also implemented a Community Outreach Program to improve the public's perception of PWSA and create positive media attention for the agency.

Veolia is also applying the PPS model for New York City's water and wastewater operations. Under a contract that began in 2011, Veolia has reviewed all aspects of that utility's practices to assess potential improvements. Working collaboratively with the City's water and wastewater operators and managers, Veolia focused on areas including: chemical use and pricing; labor productivity; inventory management; sludge process optimization; and overall O&M activities. Under this approach, our firm identified opportunities that are expected to yield annual recurring financial benefits of more than \$100 million by 2016 -- to date, more than \$90 million in savings and revenue enhancements have been reported by New York City.

The highly collaborative PPS partnership model evolved as an alternative to Veolia's traditional O&M services delivery approach, an approach that our firm first applied over 42 years ago under the first municipal contract operations partnership in the U.S. – an ongoing partnership with the City of Burlingame, California. Today, our firm continues to use this model to provide water and wastewater services to over 160 municipal clients. To demonstrate the depth of our firm's award-winning experience in the operation of surface water plants we have included a list of Veolia-operated plants as an attachment to this letter. Veolia's contract operations services are also available to Flint, as an alternative to PPS.

In the remainder of this letter, we outline our approach to: providing immediate assistance related to the review and evaluation of the water treatment process and distribution system; development of recommendations and a report for maintaining compliance with both State of Michigan and federal agencies; and assistance in implementing accepted recommendations from the report. The report that Veolia would develop for the City would outline findings and provide recommendations for continual oversight of the approved recommended practices to improve the quality of water until the implementation of the Karegnondi Water Authority (KWA) project.

Veolia's Understanding and Proposed Approach to Providing the Water Quality Consultant Scope

Our longer-term approach would begin by addressing the immediate assistance outlined in your RFP, and then service beyond that scope. Under this expanded scope, Veolia would help with the transition from the Flint River source to Lake Huron water to avoid a repeat of this scenario. That transition is expected to be in place in 2016 and will complete the City's transition from using water provided by the Detroit Water and Sewerage Department (DWSD) to drawing water from the Flint River, using the City-owned water plant.

With a Notice of Proceed issued, Veolia would mobilize a team of experts, including our two prominent water SMEs, from our corporate Technical Services Group (an in-house team of technical and management experts that support the company's projects and operations throughout North America). These experts would include:

- **Marvin Gnagy, P.E. - Water Process and Quality Manager** – He has more than 37 years of water quality management experience, and is a certified Water Operator in Ohio and a registered Professional Engineer. Mr. Gnagy has completed projects that have involved the set of tasks that the City as defined under this contract, and was most recently engaged as a part of a Veolia team of experts that worked with DWSD and the City of Detroit on a program to evaluate their water and wastewater operations and proposed solutions. This included conducting an intensive due diligence examination of Detroit's water and wastewater facilities and operations, and the development of two reports, a Peer Review Report, which looked at the current operations with a focus on identifying immediate and long term needs, and a Transition Plan: Retail Services for the City of Detroit, which outlined the issues facing the DWSD and the City as the water and wastewater operations changed under a new regionalization approach. Through that work, Mr. Gnagy understands the City of Flint's drivers for this new project, and will be able to use the work that Veolia has done to date for the DWSD to aid in identifying the optimal solution for your water system and the transition from DWSD to your own operations.

Mr. Gnagy's background and key experience that relates directly to the work scope outlined for Water Quality Consultant tasks includes:

- River Water & Groundwater Treatment and Disinfection Byproducts (DBP) Reduction – Mr. Gnagy has very broad experience with both river water and groundwater treatment on project work involving unit process design and operations to meet drinking water standards and water quality goals. Indeed, he has

conducted numerous studies involving DBP (particularly THM) reduction to meet drinking water standards, establishing treatment alternatives and process targets for THM compliance solutions.

- **Master Plan Development and Unit Process Improvements** – Mr. Gnagy prepared the master plan and performed plant evaluations for unit process improvements to meet future drinking water standards for the City of Adrian, Michigan's 10-MGD water treatment plant. That plan discussed multiple options for process improvements and chemical feed adjustments, specifically targeted for THM control treatment. Jar testing was used to define the chemical dosing and treatment scheme that resulted in the most effective THM reduction solution for the city. He also served as Project Manager for a DBP Reduction Study for the City of Akron, Ohio's 67-MGD water supply plant. That study reviewed jar testing evaluations and historical monitoring records to develop the necessary treatment process adjustments to effectively reduce THMs in the drinking water. Computer models were developed using the data obtained to predict the chemical treatment needs based on source water quality, and to predict THM concentrations following treatment adjustments using the chemical treatments selected. Recommendations included chemical feed adjustments and further study related to advanced treatment technologies.

Other work in this area included serving as the Project Manager for an optimization study for the Village of Blissfield, Michigan's 2.2-MGD water treatment plant to determine needs for improved turbidity and THM concentrations. All major unit processes and chemical feed systems were evaluated for optimal treatment needs. Jar testing and plant operating adjustments were made weekly to improve water quality and process control. Implementation of organics control treatment was accomplished that successfully achieved compliance with both the turbidity and THM compliance requirements.

Mr. Gnagy also conducted plant reviews, performed process design changes, designed new flocculation equipment replacements, and designed and started-up new washwater handling operations for several of DWSD's water treatment plants. That work involved three plants, the Southwest, Lake Huron and Springwells water plants, and focused on improving operations and to meet drinking water compliance.

A full resume for Mr. Gnagy is provided as an attachment at the end of this letter.

- **Theping Chen, P.E. - Process and Operations Optimization Manager** - He has close to 30 years of water engineering, operations and research experience, and he spent 15 years as a water consulting engineer in Michigan and is a registered Professional Engineer in the State of Michigan. Mr. Chen's experience includes working with DWSD on various projects related to master plan, source water protection, water quality management, treatment process optimizations including PAC and ozone design criteria development, taste and odor control, residual management and capital improvement program development. He has also worked extensively with the Michigan Department of Environmental Quality (MDEQ) on compliance issues with focus on water quality compliance, and is a well-published author at the national and state level conferences.

With Veolia, Mr. Chen has been engaged in supporting the ongoing operations and management contract for the City of Buffalo, New York's water operations, and in providing technical support for Veolia's water plant operations at the cities of Gloucester and Brockton, Massachusetts; with that work including jar testing evaluation and compliance strategies development for DBPs.

Mr. Chen's background and key experience that relates directly to the work scope outlined for Water Quality Consultant tasks includes:

- **River Water and Groundwater Treatment** – Mr. Chen has broad experience with both river water and groundwater softening treatment on projects including: on-call engineering, comprehensive needs assessment, filter and chemical system rehabilitation projects for the City of Marion, Ohio's 9.1-MGD water treatment plant (treating combined groundwater and river source water), under a scope of work that involved investigating DBP control strategies and conceptual design of a UV treatment system; a comprehensive regulatory review and capacity evaluation for the City of Dayton, Ohio's two groundwater water treatment plants (96-MGD each); and a comprehensive disinfection and DBPs compliance strategy review for the City of Ann Arbor, Michigan's water treatment plant (a combined surface and groundwater softening plant with at rated capacity of 27-MGD) as part of an overall Water Master Plan project.

- Ozone and Disinfection Technologies - His experience in this area included completing ozone system study, design, construction management and optimization projects for more than 10 municipal water treatment plants.
- DBP Compliance – Mr. Chen’s experience in this area includes: optimizing and upgrading ozone systems, and proposing the use of biological filtration to enhance the TOC removal to control DBPs for the City of Shreveport, Louisiana’s water treatment plant; optimizing chlorination application, conducting a review of contact time calculation to minimize DBP formation, and proposing UV system upgrades for the City of Marion, Ohio’s water treatment plant; evaluating a commercial (self-fabricated) aeration system for installation in elevated and ground-level water storage tanks to reduce the hot spots in Northern Kentucky water treatment plant’s water distribution system; and development of tracer test program to calibrate the water quality model for the City of Akron, Ohio.

A full resume for Mr. Chen is provided as an attachment to this letter.

These staff will be responsible for delivering on the immediate tasks that the City has defined:

- • Reviewing and evaluating the City’s water treatment process and distribution system. This will include evaluating the City’s processes and procedures to maintain and improve water quality.
- • Developing a report on the finding of the evaluation, with specific recommendations to maintain compliance with both State of Michigan and federal agencies. This will include outlining recommendations that will improve the water treatment and distribution system.
- • Assisting the City in implementing accepted recommendations. This will include providing continual oversight and support for the implementation of any approved recommended practices. Recommendations will focus on those areas that will improve the overall process of treating and distributing water, including improvements to water quality until the implementation of the KWA project (anticipated to be by mid-2016) under which the City will be receiving and treating Lake Huron water.

In addition to Mr. Gnagy and Mr. Chen, our core staff group, would be assisted by other technical, operations, management and communications experts from Veolia to proceed promptly into implementation simultaneously.

We believe that addressing the fundamental issues concerning water quality compliance and operational reliability is much more complex than the recommendations study and advisory services approach outlined in your RFP.

We want to ensure that the utility can fix these immediate issues effectively and without delays, while at the same helping the City to begin to build capacity for the future and better manage the 2016 water source change in a systematic way – with all the relevant stakeholders engaged along the way.

In undertaking these tasks, Veolia understands that in 2014 the City completed the transition from using water provided by DWSD to drawing water from the Flint River – utilizing your own water plant to treat and distribute water to those served by your system. Since that transition process was completed, it was found that many of the City’s eight water quality testing sites exhibited low chlorine residual levels, and several of those sites developed had positive tests for total coliform, which resulted in issuance of boil water notices for precautionary measures. To address this, the City implemented valve replacements and additional chlorination that yielded consistent chlorine residuals throughout the system. However, quarterly reporting to the MDEQ of Disinfectant Byproduct Levels resulted in trihalomethane levels above the maximum contaminant level (MCL), with an annual average level that triggered a violation notice from the MDEQ.

To date the City, working with an outside engineering team, developed and submitted to the MDEQ an Operational Evaluation Report. The next testing period is scheduled for the middle of February and an update to this report will be required by March 1, 2015. That update will incorporate the results of the tests required by the MDEQ.

The City is expecting to work with the selected Water Quality Consultant to complete the required testing and prepare the updated Operational Evaluation Report. As a secondary element of this task, the City is seeking to retain the selected Consultant to aid in the implementation of these suggestions.

Veolia excels at the day-to-day operation issues and understands how to fix them using diverse and subject matter expertise in a structured, bottom-up type, staff engagement process. That is why we designed the PPS approach to help convert the report findings into actionable items for the City of Flint's staff and then help them implement those changes. This would involve making sure that your staff understand why changes are being made, ensuring that they have the training necessary to make the changes, and then following up to be certain what is planned works or if not then provide help making adjustments. This will involve also a monitoring process to make certain the changes are on track for management and the public.

All of this can then be used to help the City to be prepared to begin receiving and treating raw water from Lake Huron through the KWA. The end goal of this process will be to develop within the City's staff a better understanding and capability to handle the changes in water, whether drawing water from the City of Flint's or the new KWA supply sources.

Veolia's Anticipated Level of Effort

In order to respond to the immediate needs of your defined scope of work, we anticipate mobilizing a team of technical, operations, maintenance and communications SMEs to: calibrate daily water quality samples with the City's hydraulic model; refine the operational strategies for the plant and distribution system; coordinate daily efforts across plant, operations and maintenance staff; and to alleviate continued concerns from the public through a public communications process. The elements of this approach would be delivered under a management and staffing approach which allows for collaboration between the City and Veolia's technical and management team.

- For purposes of the scope of services outlined in the City's RFP, Veolia's core staff would be charged at a common rate of \$225/hour, plus expenses.
- For the longer-term type of approach, Veolia would set a single lump sum price for the study, implementation and long term services after review and discussion with the City on selecting your preferred approach – the PPS approach or the contract O&M approach. At that time, we can also explore an incentive-based (risk/reward) type of approach, one which is common under PPS contracts, where Veolia's fee is based on achieving performance targets that we would mutually agree upon. As demonstrated in our work with water and wastewater clients, Veolia's PPS model has provided great insight into working with large utility staffs to change the culture and ensure implementation of ideas that improve the utility's performance.

The methodology for implementing a PPS approach, as outlined on Figure 1 (below), includes each of the following steps:

- Preparation – This stage involves the mobilization of resources (Veolia and the City), a joint project kickoff meeting (Veolia and the City), development and implementation of a communications plan (Veolia and the

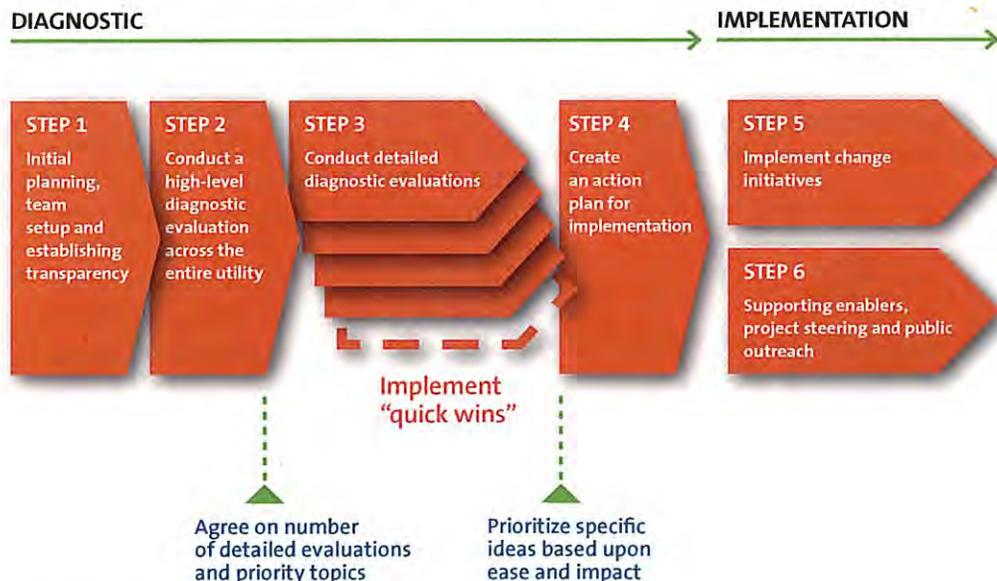


Figure 1.
Veolia
Peer Performance
Solutions (PPS) –
Service Delivery Model

City), and data collection (Veolia). The City and its consultants have already done a lot of work on the problem and are achieving some success.

- **Top-down Analysis** – This stage involves data analysis, benchmarking, field observations, interviews and idea generation workshops. This would be done to assure how effective current changes have been and if there are any additional actions to be taken.
- **Bottom-up Analysis** – This stage involves detailed analysis and modeling of the available options, working in collaboration with the City’s management team and staff.
- **Action Plan** – This stage involves defining specific steps for a recommendation based on the actual, current state and desired state performance of an asset.
- **Plan and Report** – This stage involves the final development and delivery of a written report summarizing findings and presenting analyses and recommendations

These actions are what we would provide during the study phase of the project, and the following actions are what we would do to implement study recommendations

- **Implementation** – Putting plans into action. This involves working with O&M and management staff to carry out the proposed plan. This effort I focused on building capacity and confidence within the staff to solve the problem.
- **Monitoring and Repeat** – Monitoring the process and then repeating it, digging even deeper into the organization for additional savings and improvements.

Using this type of plan and approach, Veolia can address the immediate scope/needs defined for the Water Quality Consultant task, and work with the City of Flint to provide a long-term and sustainable approach for the needs of your water treatment and supply system.

Addressing the Requirements of the Invitation for Bid

Veolia recognizes that we are submitting this Proposal as an alternative approach for the City of Flint to consider within the procurement process that you have defined, and in that regard we are providing the other specific information that your have requested as part of the formal RFP response, including:

- **Company’s Information** – Veolia Water North America Operating Services, LLC is the respondent, and the contact information for our firm is as follows: Veolia - 101 West Washington Street, Suite 1400 East, Indianapolis, IN 46204 - **Telephone:** 317/917-3700
- **Firm Background and History** – Veolia is a company that traces our history in providing operations and related services to municipal clients back more than 42 years. Today our firm ranks as the leader in the delivery of O&M and related services, including those under the PPS model. This include serving as the operator and manager of over 180 municipal wastewater systems (processing over 1.66 billion gallons a day of flow) and some 90 municipal water systems (providing over 715 million gallons a day of water).

Today, Veolia ranks grown as the leading water services provider in North American market, with more projects, operations, resources, expertise and demonstrated success than any other services provider. This record of performance and market leadership is affirmed in the most recent survey from the publication Public Works Financing (opposite), which shows Veolia’s better than 40% market share, with revenues and a renewal rate that lead the industry. What these market leading indicators serve to show is that we can meet the standards of experience and capabilities that the City of Flint is requiring under this new contract.

Water operators ranked by 2013 revenues

O&M and DBO market share reported by Public Works Financing (PWF) | March 2014

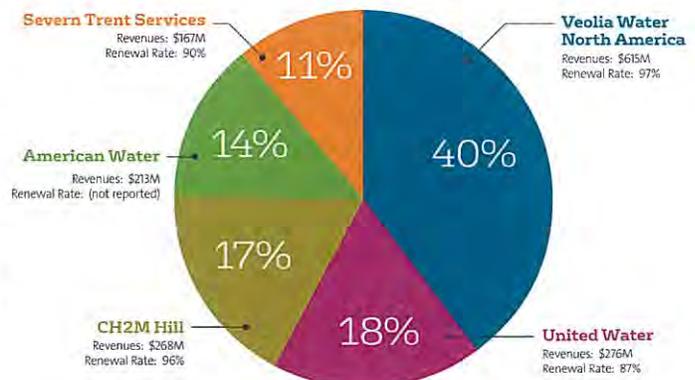


Figure 2.
Veolia Service
Delivery Models
and Experience

Veolia Example →	NYC	Buffalo	Milwaukee	Indianapolis	Baltimore Compost	Rialto California	Franklin Ohio
Options → Criteria ↓	PPS	Delegated Management	Single Activity O&M	Full O&M	DBO or T	Concession	Privatization
Ease of Procurement	●	●	●	●	●	●	●
Agreeable to Employees	●	●	●	●	●	●	●
Ease of Cancellation	●	●	●	●	●	●	●
Public Rate Control	●	●	●	●	●	●	●
Speed of Implementation	●	●	●	●	●	●	●
Ease of Permitting	●	●	●	●	●	●	●
Ease of Continued Use of Alternative Project Delivery	●	●	●	●	●	●	●
Ease of Acceptance by Other Stakeholders	●	●	●	●	●	●	●

- **Firm Qualifications, Experiences and References** - Like the City of Flint, we are at our core utility managers and service providers, and Veolia understands the need for high quality, efficient service and dependable reliability. We also work with communities like yours to deliver services under a variety of contract models, each focused on providing our municipal partners with the best value under a long-term and sustainable approach and customized to their objectives. Figure 2, above, outlines our experience with various service delivery models, each of which involves working with clients to develop a customized approach to meet their particular needs and objectives. This table also shows the key advantages of each type of service delivery approach, with **green** being optimal in terms of ease of execution and delivery and **red** being the most challenging and complicated in terms of delivery. This table also highlights example projects where our firm has successfully delivered each of these approaches (and many of those are highlighted under the reference projects section of this letter). What this table also shows is that Veolia can offer alternative transaction structures, including long-term lease, concession arrangement or sale/purchase.

As we discussed above, Veolia currently operates and manages 90 municipal water systems (providing over 715 million gallons a day of water); at the end of this letter we have provided a summary table of this experience.

Following here we provide some of the specific clients/projects as the core references that we are submitting for the City of Flint’s consideration:

- **Pittsburgh Water and Sewer Authority (PWSA), Pittsburgh, Pennsylvania** - The PWSA’s Board of Directors unanimously selected Veolia in 2011 to deliver an innovative approach to managing the system, provide measurable results to customers and demonstrate an ability to quickly and easily collaborate with employees. In 2014, this management assistance/PPS contract was extended for a new term, recognizing the success of the effort to date.

Since the beginning of this partnership, Veolia has assisted the PWSA in realizing more than \$5.5 million in annually recurring revenue and efficiencies.

PWSA provides water and sewer services to 310,000 people in the City of Pittsburgh and surrounding areas. The agency hired Veolia to: 1) provide interim executive management services, leading 270 public employees in the delivery of water and wastewater services in the greater Pittsburgh area; and, 2) conduct a study to identify ways to cut costs and improve service. Under a management assistance scope, Veolia has worked with the PWSA to establish financial controls that limit spending and increase accountability, foster competition among companies seeking to do business with and on behalf of the PWSA, and identify opportunities for operational efficiencies having a direct impact on the utility’s bottom line.

Under this contract, Veolia's management team is integrated into PWSA's organization to manage the agency's staff at their offices and operations sites, while another team of experts jointly identifies and evaluates improvement opportunities. This joint effort aims to help the PWSA improve the utility's customer service and performance levels.

The study phase of this project (Phase 1) was completed, and that work effort helped PWSA improve the customer service and performance levels by utilizing in-depth diagnostics of current operations. Veolia also developed recommendations for improvement that were approved by the PWSA board, and we are now supporting PWSA employees in implementing initiatives aimed at reaching new performance metrics. The Phase 1 report identified measures that will lead to annually recurring savings. During the partnership's first year, a team of water and wastewater experts from Veolia helped PWSA improve the utility's customer service and performance levels by

conducting in-depth diagnostics of current operations, developing recommendations for improvement and supporting PWSA employees in implementing initiatives aimed at reaching new performance metrics. The analysis and resulting operational changes helped PWSA reduce its cost of operations and increase the utility's revenue by, among other things, re-securing a large commercial customer. The total impact of these changes has allowed the PWSA to approve an annual budget without a water rate increase.

Early quick-wins under Phase 1 work for this project involved optimizing water production run-times at the membrane plant, which will reduce chemical costs by \$350,000 annually, and implementing enhancements at the customer service call center that slashed the call-abandonment rate almost immediately and reduced customer call waiting time by half. A key focus of the work is on identifying efficiencies in O&M practices for over \$3 billion in above- and below-ground infrastructure that serves the water and sewer conveyance needs of customers across 54 square miles. The initial tasks in this area involved working with the PWSA's managers and staff to meet Consent Decree (CD) obligations to state and county regulators. Under this initiative, Veolia's management and support teams worked to organize the department and create a culture of responsibility and accountability for the success or failure of projects. Veolia also worked with the PWSA's local and national engineering consultants and contractors to get them back on schedule, clearing a backlog of potentially litigious disputes, which allowed projects to move forward. Other tasks included working on the feasibility of creating a stormwater authority to better assess stormwater usage and create additional revenue for increased levels of service. Additionally, Veolia assisted with the planning for a more than \$150 million Capital Improvement Program (CIP) covering three years. This initial program addressed the PWSA's most critical infrastructure needs. The underground (water and sewer) pipelines in Pittsburgh are 80 to 100 years old and winter line breaks are a constant occurrence, so the PWSA is continually replacing underground assets.

Throughout these efforts, Veolia's Pittsburgh-based team worked side-by-side with the PWSA's staff, helping them execute the utility-approved initiatives and training them to sustain the work after the work of this partnership is complete.

- **Client Reference:** Alex Thomson, Chairman of the Board, PWSA c/o Houston Harbaugh, P.C. - Three Gateway Center, 401 Liberty Avenue, 22nd Floor, Pittsburgh, PA 15222
- **Telephone:** 412/281-5060 - **Email:** athomson@hh-law.com

Veolia in North America – Experience Profile

- 188 Municipal and Commercial Clients
 - 90 Municipal Water Treatment Facilities
 - 2,952 Miles of Distribution System Lines
 - 87 Water Pump Stations
 - 171 Water Wells
 - 183 Municipal Wastewater Treatment Facilities
 - 5,286 Miles of Collection System Lines
 - 1,158 Wastewater Pump Stations
 - 31 Industrial Pretreatment Programs
 - 13 Billing/Collection Operations
 - 23 Meter Reading Operations - 147,399 Meters Read
 - 4 Public Works Operations (other than Water/Wastewater)
 - 6 Operations Assistance/Peer Performance Solutions Projects
 - 53 Energy Installations (owned/operated/managed)
 - 631.6 MW of Energy Generation/Supply Capacity
 - 290,394 tons per day of Chilled Water Capacity
 - 443 MMBTU/hour Total Hot Water Capacity
 - 13.2 million pounds/hour of Total Steam Capacity
- 95 Industrial Clients
 - 60 Industrial Wastewater Treatment Facilities
 - 23 Industrial Water Treatment Facilities
 - 913.3 Million Gallons Water Treated Daily
 - 1.7 Billion Gallons Wastewater Treated Daily
 - 293,089 Dry Tons of Biosolids Processed/Year
 - 19.2 Million+ Population Served Daily

- **City of Buffalo, New York** - In 2010, Veolia began a 10-year partnership with the City for O&M of their water supply system which serves more than 77,000 customer accounts. This is the largest water system under contract O&M in New York State, with facilities and operations that include: a 160-MGD surface water treatment plant; 814 miles of water distribution system, customer service management (meter reading, billing and collections); capital program management; and underground asset management (UGAM) and above-ground asset management programs.



"The Buffalo Water Board... is confident that we have selected the best operator for our system ... Veolia Water's demonstrated focus on service has convinced us that our long-term partnership will result in notable advances ... We expect Veolia Water to move us forward through the next decade with marked efficiency improvements and technological advances while maintaining our exceptional water quality."

— Oluwole McFoy, Chairperson, Buffalo Water Board
Speaking at the start of the contract in 2010.

In addition, Buffalo was one of the first cities in the U.S. to use the Veolia North American Meter Testing Facility. Under that approach, some 400 meters from the City have been sent to the facility on an annual basis for accuracy testing and evaluation of remaining life. On average, Veolia repairs/replaces more than 3,400 meters annually in Buffalo, and customer service metrics involve answering

up to 7,000 calls a month in one minute or less and collecting 96% of meter revenue. Some 96% of all meters in the City are true-read type, with only 4% being estimated, and over 3,000 commercial and industrial accounts in Buffalo are now on mobile-read AMR systems.

Veolia transitioned the City's water operations to our firm under a delegated management type of contract, with the O&M staff remaining direct City employees working under supervision of Veolia's management team. Under this arrangement, Veolia has worked with the City and the staff to establish new work disciplines and procedures and to drive performance and enhance the quality of service. A core part of this effort involved establishing some 20 performance metrics to track and determine performance and accountability under this partnership.

In the area of customer service, Veolia implemented new customer service phone/information systems and partnered with the Water Authority service center staff to implement a process of a customer service cultural change that have enhanced performance and provided a better customer experience.

- **Client Reference:** O.J. McFoy, Water Board Chairperson, City of Buffalo, City Hall, 65 Niagara Street, Rm. 1101, Buffalo, NY 14202 - **Telephone:** 716/851-4333 - **Email:** omcfoy@sa.ci.buffalo.ny.us
- **Tampa Bay Water, Florida** - Veolia has worked with this agency since 2000 under multiple contracts that have focused on water treatment, storage and supply.

Tampa Bay Water, a regional water authority, serves the needs of over 2.5 million people in the communities of Tampa and St. Petersburg, and this agency ranks as the largest wholesale treated water supplier in Florida.

Veolia's initial project with Tampa Bay Water began in April 2000 when, following a year-long selection process among four competitive teams, they awarded our company a \$135 million, 15-year (with a 5-year option) contract to design, build and then operate a new 60-MGD Regional Surface Water Treatment Facility.

Since that time, the Tampa Bay Water-Veolia Water Public-Private Partnership has constantly expanded over the years – a testament to the quality of our work and our client's trust and satisfaction.

Veolia's initial design-build-operated (DBO) contract was for a 66-MGD surface water treatment plant, and that was followed by additional service agreements for the maintenance of a 30-MGD groundwater treatment facility, O&M of a 15-billion reservoir, and an engineering-procurement-construction management (EPCM) type contract for a new 45-MGD hydrogen sulfide treatment plant and 20-MGD high-lift pumping station.

Tampa Bay Water also awarded Veolia Water a second DBO contract to expand (nearly doubling the size) the original surface water plant from 66-MGD to 120-MGD.

Today the Public-Private Partnership between Tampa Bay Water and Veolia Water is the largest in Florida, and the surface water treatment plant is among the most technologically sophisticated in the world.

- **Client Reference:** Mr. Matt Jordan, General Manager, Tampa Bay Water - 2575 Enterprise Road, Clearwater, FL 33763 - Telephone: 727/796-2355 - Email: mjordan@tampabaywater.org.
- **DeKalb County Department of Watershed Management (DWM), Georgia** - DeKalb County is Georgia's third-largest county, with more than 700,000 residents. The DWM hired Veolia in 2014 to assist in identifying cost savings and customer service improvement, and work completed to date has involved conducting a comprehensive and independent review of their water and wastewater operations.

DWM's operations include: a 140-MGD water treatment plant; 65 pump stations; two wastewater treatment plants (20-MGD and 36-MGD in capacity); more than 5,000 miles of water and sewer pipe; and a customer service operation that provides services to 700,000 residents in the Atlanta metropolitan region.

The County and Veolia estimate that this review could produce as much as \$8 million in savings annually for DeKalb ratepayers, reducing costs and helping mitigate rate increases.

After a thorough analysis of existing operations, Veolia has presented a proposal to transform the entire customer service organization and leverage existing technological solutions to reduce wait times and increase satisfaction for customers. In addition to customer service, Veolia will support implementation of best practices across the utility's administration, planning, operations, maintenance and capital programs, and billing and collections.

In tandem with the assessment, Veolia is working with the DWM to implement County-approved operations and management initiatives focused on achieving measurable operational, revenue and organizational enhancements to ultimately reduce operating costs and improve service levels, allowing DWM to provide more efficient and sustainable services.

Some of the early wins under this contract have included: construction and maintenance wrench-time findings that offer the potential for more than \$1 million in annual impacts; efficiency studies of field operations crews at the wastewater plant that identified more than \$1 million in annual savings through insourcing current contractor spend; and more than \$500,000 in annual savings identified in the areas of chemicals and power at the water treatment plant. Veolia continues to work with the County as we focus on shaping a long-term approach to meeting their needs.

- **Client Reference:** Dr. James M. Chansler, P.E., Director DWM, DeKalb County - 1580 Roadhaven Drive, Stone Mountain, GA 30083 - Telephone: 770/621-7234 - Email: jmchansler@dekalbcountyga.gov



The Public-Private Partnership between Tampa Bay Water and Veolia Water, which began in 2000 and now encompasses multiple projects for the water treatment and supply, ranks as the largest and most successful of its type in the State of Florida. The project has been recognized with numerous awards, including the 2013 Plant Operations Excellence Award from the Florida Department of Environmental Protection.

- **New York City, Department of Environmental Protection (DEP), New York** - Veolia began working with the DEP in 2011 to optimize their operations and help implement savings initiatives. New York City's water and wastewater operations that serve over 9 million people daily, delivering over 1 billion gallons of clean water and treating more than 1.3 billion gallons of wastewater per day. These operations include: 13 wastewater treatment plants; a new 290-MGD water treatment plant; 6,000 miles of sewers; and 7,400 of miles of distribution lines.

The primary scope of this PPS program involved reviewing all aspects of this utility's operations to assess potential improvements in areas including: chemical use and pricing; labor productivity; inventory management; sludge process optimization; and overall O&M. Additionally, the project identified such enabling steps as public outreach, legislative initiatives and other processes for the implementation of recommendations.

Veolia's final report for the Phase 1 work ultimately identified over 100 implementable measures for the City's consideration. Throughout the first phase of this innovative partnership, the City's employees worked alongside our project team under a joint management and governance structure to identify operational and organizational efficiencies. In order to capture "quick wins," our joint team identified and implemented several cost-saving initiatives within the first three months: chemical procurement modifications, for example, yielded million dollars in annual recurring savings.

Under this approach, Veolia has identified opportunities that are expected to yield annually recurring financial benefits of more than \$100 million by 2016, and, to date, over \$90 million in savings and revenue enhancements have been reported by New York City's DEP. These benefits represented between 9% and 11% of the agency's \$1.2 billion fiscal year 2012 budget.

In June 2012, Veolia received notice to proceed with the official implementation phase, Phase 2, which involves implementing the approved recommendations of the assessment phase (Phase 1) under a four-year contract. To implement this phase of the project, we mobilized a world-class team to work with the City's staff in their offices and at their water and wastewater operations locations.

Veolia's unique partnership, New York City's Operational Excellence (OpX) program, is focused on enhancing water and wastewater services, streamlining workflows, boosting efficiency and continuously identifying opportunities for improvements that will allow DEP to maintain its high level of customer service, safety and productivity while minimizing rate increases for its roughly 836,000 ratepayers. To achieve this, DEP set an ambitious goal for the OpX program right from the start – to achieve significant operating benefits by 2016. The program goes beyond individual projects and encompasses transformational initiatives, including enhancing performance management, strengthening core capabilities in human resources and procurement and fostering an organizational culture focused on performance and continual improvement. To reach these goals, the Veolia-led team worked with DEP to:

- Review current O&M practices for potential improvements in terms of energy usage and production opportunities, chemical usage and pricing, labor productivity, inventory management and optimal sludge processes.
- Recommend implementable measures to improve and/or streamline operations and maintenance, increase efficiencies, enhance productivity and reduce costs.
- Support public outreach, legislative initiatives, and other processes required to implement recommendations.
- Work with DEP staff to implement the recommended initiatives.

During the top-down and bottom-up analysis work conducted in Phase 1, which continues in the Phase 2 work, the Veolia team identified current strengths within DEP's operation and noted five key areas where improvements will have significant financial benefits for the agency: efficient and sustainable use of resources and materials; enhanced workforce effectiveness; improved revenue collection; development of a metrics-based performance culture; and strengthening DEP's support services. The OpX program confirmed that DEP is a world leader in meeting drinking water and wastewater compliance, performing

well above the average of similar utilities. In the first six months of the OpX program, 100+ individual improvement ideas were identified and evaluated.

- **Client Reference:** Mr. Steve Lawitts, Chief Financial Officer, New York City DEP - 59-17 Junction Boulevard, 8th Floor, Flushing, NY 11373 - Telephone: 718/595-6576 - Email: slawitts@dep.nyc.gov.gov
- **City of Indianapolis, Indiana** - From 2002 to August 2011 (when the City completed the sale of its water system assets to a quasi-governmental utility services provider), Veolia operated what was (at the time) the largest water system O&M contract in the U.S. The Indianapolis water system is a regional operation, serving the needs of almost one million people in central Indiana, and included: four surface water treatment plants, ranging in size from 16-MGD to 96-MGD; five groundwater treatment plants, ranging in size from 2-MGD to 24-MGD; a 4,300-mile water distribution system; and pumps, storage tanks and reservoirs. The City's water system includes 38,000 fire hydrants, 300,000+ customer accounts, meter reading (310,000 meters – residential, commercial and fire), meter replacement program, and billing & collection (600,000 accounts). A key element of the project focused on customer service improvements, and over the nine years of work in managing this system (prior to the sale of the utility by the City), Veolia achieved a customer satisfaction rate of at least 90% (independent survey) and answering 88% of 70,000 monthly calls within 30 seconds. Improvements that were implemented by Veolia in the area of customer service includes empowering customer service employees to resolve most issues on the first call ("One and Done"); responding to 99% of emergency calls within 60 minutes; maintaining the operations ranking in the top quartile for performance in billing accuracy, customer complaints and O&M (AWWA benchmarking survey); ensuring customers were not without water for more than 12 hours; providing customers with 24-hour access to their billing and account information.

Over the course of this nine-year contract, Veolia stopped a trend of substantial annual customer rate increases and had achieved a cumulative \$83.1 million in savings at contract completion in 2011. At the end of the contract, our annual operating costs were some \$2 million less than the previous management's had been when we started in 2002. We also improved the quality of operations by simultaneously achieving ISO 9001 and 14001 certifications, making the City the only major U.S. city to achieve both certifications.

Veolia also worked with this client to establish a set of key performance indicators (KPIs) that formed the basis for the award of a portion of our fee. Under the incentive plan, a portion of our fees were paid only if we met specified customer service, water quality, operations and other performance measures. By directly linking performance to compensation, this partnership established a new model in the water outsourcing industry. Over the nine-year life of this agreement, Veolia achieved over 90% of incentive payment fees.

- **Client Reference:** Mr. Sam Odle, Past Chairman, Board of Waterworks - City of Indianapolis, 3939 Priority Way S. Drive, #400, Indianapolis, IN 46220 - Telephone: 317/706-6349 - Email: samuallodle@gmail.com
- **Atlanta/Fulton County, Georgia** - Veolia, in a 50-50 joint venture with a minority-owned business enterprise, began operating the Atlanta-Fulton County Treatment Plant (which opened in November 1990). Over the term of this contract, Veolia has worked with the facility owner, the Atlanta/Fulton County Water Resources Commission (AFCWRC), to triple the capacity of this water treatment plant using a variety of process improvement and capital improvement approaches.

The scope of work for this project has involved all aspects of facility O&M, as well as working with the AFCWRC for facility expansion and upgrade. Over the past decade, Veolia implemented a pilot program to increase the plant's 30-MGD production capability to meet its rated flow of 45-MGD (as rated by the Georgia Environmental Protection Division, GEPD), with no capital expenditures. Subsequent efforts increased the plant's rated capacity to 56-MGD; with an ultimate treatment capacity of 135-MGD. Water demand is so great that the AFCWRC 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's O&M program has also reduced the power, chemicals, and overall operations costs, with savings passed on 100% to the AFCWRC. In addition, we have had no change orders to the contract even though the plant capacity expanded to 90 MGD under our current agreement.

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The project also includes O&M responsibility for a 200-MGD raw water pumping station, dual 54-inch raw water pipe, more than 800 million gallons of reservoir capacity, and the treatment plant. The raw water pumping station—located on the Chattahoochee River—and raw water mains connect it to the surface water treatment plant. 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, clearwell storage, and finished-water pumps.

The success of the water operations project also led to a new contract with Fulton County for the O&M of their regional wastewater facilities, as highlighted above, and in 2014 Veolia was again selected for the renewal of the water operation contract under a competitive renewal process.

- **Client Reference:** Ms. Kathy Crews, General Manager - Atlanta-Fulton County Water Resources Commission - 9750 Spruill Road, Alpharetta, GA 30202 - **Telephone:** 678/942-2790 - **Email:** kcrews@afcwrc.com
- **District of Columbia Water and Sewer Authority (DC Water), Washington, DC** - DC Water is the largest wholesale customer of the Washington Aqueduct (Aqueduct), a federally-owned public water supplier operated by the U.S. Army Corps of Engineers. Veolia was retained to conduct a comprehensive evaluation of the Washington Aqueduct operations and related organization processes, and then recommend improvements that will add value to the delivery of services to its wholesale customers.

Working in collaboration with Aqueduct staff, Veolia brought in experts to complete the evaluation phase (Phase 1), focused on identifying ways to ensure that DC Water is receiving reliable, quality drinking water at efficient production cost. More than 25 individual improvement ideas were identified and thoroughly evaluated during the four-month study phase, and up to 15% in savings were identified by the Veolia at the Aqueduct. The cumulative annual impact of successfully transforming operations is projected to be between \$8 million and \$12 million total (OPEX and CAPEX) recurring yearly saving.

Veolia worked to review every aspect of the Aqueduct's operations, including the treatment process, maintenance and support functions. This review included the Aqueduct's capital program and also included an assessment of the key financial metrics and a high-level asset valuation.

Additionally, our team worked to benchmark the Aqueduct operations against some of Veolia's own operations, as well as other publicly operated utilities in order to identify gaps in performance and efficiency. This comprehensive analysis work involved site visits to the treatment facilities, discussions with staff, hands-on observations of the work performed, and in-depth review and analysis of all of the documentation provided. For example, the maintenance assessment involved over 100 hours of wrench-time observations, and for the procurement scope, we reviewed all of the contract specifications, terms and conditions. As part of this work, our teams conducted over a dozen one-on-one discussions and workshops with leadership and staff.

Veolia's team also analyzed data available across the organization and built new databases where necessary to generate insight. For instance, we used the CMMS data to develop the Pareto analysis in the maintenance section of the final report. To recommend implementable measures, Veolia facilitated workshops to generate, prioritize and refine initiatives across the different scope areas of the assessment. Most of the prioritization took place during the Steering Committee meetings, which included both Washington Aqueduct and DC Water participation and input. The Wholesale Customer Board was also involved in the review process through a presentation in September 2013 that summarized the primary findings and recommendations of the study. Working with the Washington Aqueduct and DC Water, Veolia identified approximately 10 improvement initiatives for maintenance, six initiatives in capital planning, five initiatives for water treatment, three initiatives for operations and two initiatives for support functions, including procurement. All of these more than 25 initiatives are supported by proposed enhancements in communications, training and performance management. These activities are often referred to as "enablers," which help organizations get the most out of their initiatives by properly supporting them with investments in these three overlapping activities.

Veolia has been selected to continue into Phase 2, Implementation, and that work (which will begin in 2015) will involve advising Aqueduct management and staff, coaching them on how to perform the recommended enhancements, measuring progress and refining approaches. The focus of this approach will be on ensuring that the staff can carry on this work and that the Washington Aqueduct can continue to benefit from our expertise long after our contract concludes.

- Client Reference: Thomas P. Jacobus, General Manager - Washington Aqueduct, Baltimore District, U.S. Army Corps of Engineers, 10 South Howard Street, Baltimore, MD 21201
- Telephone: 202/764-0031 - Email: thomas.p.jacobus@usace.army.mil
- Staff Experience – Veolia has provided resumes for the two core staff proposed for this project as an attachment to this letter. These resumes provide the requested information on each staff member, including experience, relevant education, degrees, certifications and any other pertinent information related to the base of experience they bring to this partnership with the City of Flint.
- Project Scope – At the start of this letter we provided a statement discussing our firm’s understanding of the requested services and our approach to providing the services requested.
- Price for Services – With our proposed approach, presented earlier in this letter, Veolia provide a pricing schedule (hourly rates for key staff) to perform the requested services.
- Affidavit – Veolia has completed the required Affidavit and it is provided as part of our submittal (as an attachment to this letter).

Finally, as we discussed at the start of this letter, Veolia is offering this as an Alternative Bid/Proposal, which is being submitted to you in the requested form and format – an executed original and two copies of our letter proposal submittal – and remains a valid offer for 120 days from the date of submittal. Further, our Bid/Proposal is based on the City’s RFP and other documents and information provided as part of the procurement process, as well as on the contractual concepts under which Veolia normally provides the services outlined in this letter. Veolia’s Bid/Proposal also assumes the negotiation and execution of a mutually acceptable contract consistent with those concepts. We would note that contractual provisions that often require discussion and further agreement include, among other provisions, warranties, indemnities, casualty risks, insurance, environmental liability, ownership of wastes, consequential damages, contractual limits of liability and remedies for breach or default and termination. We do not believe that these matters should present any serious obstacles to the negotiation of a contract, and we are prepared to meet with you to discuss them at your convenience.

As the Veolia Executive Sponsor for this proposed work with the City of Flint, I will be the key contact as we move forward with this process. Further, as we discussed in our meetings with you, my background for this key role includes a combination of utility management experience, as well as experience in leading Veolia’s PPS work with other major communities and water utility operations in the U.S.

I am also the former President and Manager of the water system for the City of Indianapolis, which Veolia operated and managed for over nine years. Under that O&M contract, our firm achieved an industry-first in performance standards and quality management.

My contact information for the purposes of this Proposal is as follows:

Mr. David Gadis – Senior Vice President – Sales – Municipal and Commercial Development
Veolia Water North America Operating Services, LLC
101 West Washington Street, Suite 1400 East, Indianapolis, Indiana 46204
Telephone: 317/716-5683 – Fax: 317/917-3718 – Email: david.gadis@veolia.com

I invite you to contact me should you have any questions with regard to our Bid/Proposal, or if you need any additional information.

Mr. Derrick F. Jones, Purchasing Manager
City of Flint, MI

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January 29, 2015

We very much look forward to your review of this submittal and the next steps in this procurement process for this proposed new partnership.

Sincerely yours,



David Gadis
Senior Vice President
Veolia Water North America Operating Services, LLC

Attachments:

- 1 - Resumes for Key Staff
- 2 - Experience Summary Table
- 3 - Affidavit for Corporation

Attachment 1
Resumes for Key Staff



Education:

BS, Chemical and Environmental Engineering, University of Toledo

Registrations/ Certifications:

F-1 Waterworks Operator, Michigan
Registered Professional Engineer, Ohio
Class IV, Water Supply Operator, Ohio
Class III, Wastewater Operator, Ohio

Memberships/ Affiliations:

American Water Works Association
Operator Training Committee of Ohio (OTCO)

Background:

Mr. Gnagy is the Water Process Manager with the Engineering and Optimization group of Veolia Environnement North America (Veolia)'s Municipal and Commercial Technical Support Group. In this role he provides support for Veolia's design/build, design/build/operate (DBO) and operations, maintenance and management (O&M) projects in the U.S. and Canada. This includes providing technical and capital project support to municipal, commercial and other projects in the water and energy business lines.

Mr. Gnagy joined Veolia in 2010, and prior to his current role he worked as the Municipal Water Technical Manager with Veolia Water North America Operating Services, LLC (Veolia Water)'s Technical Direction Group. In these technical leadership roles, he has provided engineering and operational expertise to projects related to troubleshooting process and equipment problems, achieving water quality goals, maintaining regulatory compliance, optimizing treatment and chemical processes, maintaining system water quality and participating in the development of new projects throughout North America.

Mr. Gnagy has also worked as part of the teams engaged in the delivery of projects under Veolia Water's Peer Performance Solutions (PPS) project approach. This new approach involves working with large water and wastewater utilities in to conduct detailed operations evaluations that lead to operations efficiencies and cost saving for their operations. In this work, Mr. Gnagy has provided support for some of the largest water and wastewater utility operations in the U.S., including that for New York City, New York.

Mr. Gnagy has over 33 years of experience in management, operation, maintenance, design and construction of water treatment systems. He is experienced with chemical treatment operations and troubleshooting for the optimization of treatment processes and operational sequencing.

Mr. Gnagy also has experience in conventional and advanced treatment technologies, and has been involved with solving treatment issues and providing regulatory compliance. His experience includes: water supply development and monitoring; chemical treatment; mixing applications; taste and odor control; oxidation and coagulation treatment; chemical softening; ion exchange softening; clarification; filtration techniques; membrane filtration and membrane softening; disinfection methods; pumping operations; bench-scale, pilot testing and demonstration studies; high-rate treatment technologies; dewatering and solids handling; and process monitoring and optimization. His design experience has provided operator-friendly solutions to solve both regulatory and operational issues for a number of water treatment systems in the U.S.

In addition, Mr. Gnagy has specific knowledge of regulatory drivers and compliance in multiple state, and he has been involved with the development of site-specific operating strategies that help treatment plants achieve water quality goals and regulatory standards.

Work History:

- **2013-Present: Water Process Manager – Engineering and Optimization Group – Municipal and Commercial Technical Support Group – Veolia Environnement North America**
 - Works as part of an in-house specialty team that provides technical and management support for new and ongoing projects with municipal and commercial clients. This involves supporting projects under the water treatment and supply, wastewater collection and treatment, and energy utility operations and management business lines.
 - Served as Subject Matter Expert in the area of water operations for a contract with the Detroit Water and Sewerage Authority (DWSD) and the City of Detroit to evaluate their water and wastewater operations and proposed solutions. This includes an intensive due diligence examination of the facilities and operations and development of two reports, a Peer Review Report, which looked at the current operations with a focus on identifying immediate and long term needs for the DWSD, and a Transition Plan: Retail Services Report for the City. These reports outlined the issues facing the DWSD and the City as the water and wastewater operations changed under a new regionalization approach.
- **2010-2013: Municipal Water Technical Manager – Technical Direction Group - Veolia Water North America Operating Services, LLC**
 - Worked as part of the Veolia Water PPS team in New York City (operations evaluation and identification of improvements for the City's water supply systems), as well as the team involved in implementing a PPS project with DC Water and Sewer Authority (DC Water), Washington, DC. The DC Water project involved conducting an independent comprehensive review of the operations and management of the Washington Aqueduct (WAD). The focus of this work was on examining WAD's operations, considering: overall operational efficiency; reliability and security of supply; and total water quality management. The project with New York City involved operations efficiency studies that identified utility-approved opportunities expected to save the City \$108–\$130 million per year; Veolia Water is currently engaged in the implementation phase (Phase 2), which will cover the next five years.
 - Responsible for providing technical and operational expertise to current and ongoing Veolia Water projects. Participated in the development of new projects throughout North America.
 - Provided technical consultation and process troubleshooting for water treatment plant operations throughout the U.S., including a variety of conventional and advanced water treatment processes and the specialized equipment they employ.
- **2009-2010: Water Resources Manager - Brown and Caldwell**
- **2005-2009: Water Resources Manager/Operations Manager - URS Corporation**
- **1996-2005: Operations Specialist/Senior Design Engineer - Arcadis**
- **1989-1996: Operations Specialist - Jones & Henry Engineers**
- **1986-1989: Superintendent of Water - City of Defiance, Ohio**
- **1979-1986: Superintendent of Water - City of Berea, Ohio**
- **1977-1979: Water and Wastewater Operator - Village of LaGrange, Ohio**

Other Key Experience:

- Involved with the testing design and optimization of treatment processes including: source water characterization and oxidative organics fractioning; carbon adsorption; enhanced coagulation techniques; effective mixing applications; high-rate clarification processes; solids contact clarification; high pressure and low pressure membrane technologies including ultrafiltration (UF) and nanofiltration (NF); TOC removal and DBP control; enhanced softening techniques; anion exchange processes; chlorine and chlorine dioxide disinfection; chloramination; precipitative
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softening and recarbonation; tube and plate settlers; sludge management (pumping and processing, gravity thickening, lagoon storage and dewatering, land application, filter press dewatering and centrifuge dewatering); and laboratory analyses and operations.

- Significant experience in distribution system operations, including pumping operations, booster disinfection techniques, water quality monitoring, taste and odor investigations, iron and manganese related issues, unidirectional flushing programs, cross connection control, and repair and maintenance of piping systems.
 - Served as Project Manager for a number of water treatment plant design projects related to implementation of chemical and treatment process improvements aimed at achieving compliance with drinking water standards, and improving plant operations and water quality. Provided construction oversight for the projects once construction of the improvements began.
 - Provided chemical and process optimization services for a number of water treatment plants across the U.S. defining needed upgrades in operating practices and/or process equipment to enhance water quality and reduce operating costs.
 - Conducted a number of bench-scale, pilot-scale, and full-scale process investigations related to identification of operating strategies and advanced treatment technologies to meet more stringent drinking water standards and developed recommendations for process treatments and equipment necessary to achieve regulatory compliance.
 - Designed and equipped municipal drinking water laboratories for process monitoring, bacteriological analyses, algae identification and speciation, and advanced instrumentation and analyses.
 - Prepared site-specific water and wastewater treatment plant operations and maintenance manuals for more than 120 systems across the U.S. outlining operating strategies, equipment descriptions, process control techniques, instrumentation and control systems, troubleshooting, and maintenance activities.
 - Developed operating standards and training manuals related to jar testing and coagulation operations, mixing applications, solids contact clarification, water and wastewater disinfection, lime-soda softening and recarbonation techniques, filter inspection techniques, formation and control of DBPs, and an overview of the Stage 2 D/DBP and LT2 ESWT Rules. Also served as principle instructor for these courses since their development.
 - Instructor for basic and advanced water treatment courses for the Operator Training Committee of Ohio; and instructor for basic math, basic chemistry, and basic hydraulics for the Michigan Department of Environmental Quality.
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Education:

BS, Environmental Engineering,
East China University of Chemical Technology, 1985

MS, Environmental Engineering,
University of North Carolina at Chapel Hill, 1991

Registration:

Registered Professional Engineer,
Michigan

Additional Training and Certification:

Construction Documentation Technologist

Memberships/Affiliations:

American Water Works Association
(Past National committee members on Source Water Protection, Taste & Odor, and Organic Contaminant Control)

Water Environment Federation

International Ozone Association

(Current PAG board of directors, and past conference planning committee),

International UV Association

Background:

Mr. Chen is a Process and Operations Optimization Manager with the Engineering and Optimization group of Veolia Environnement North America (Veolia)'s Municipal and Commercial Technical Support Group. In this role he provides support for Veolia's design/build, design/build/operate (DBO) and operations, maintenance and management (O&M) projects in the U.S. and Canada. This includes providing technical and capital project support to municipal, commercial and other projects in the water and energy business lines.

Mr. Chen has almost 30 years of water system engineering, operations and research experience. He joined Veolia in 2014 and has been engaged in supporting the delivery of projects under O&M and Peer Performance Solutions (PPS) project approaches. The PPS approach involves working with large water and wastewater utilities in to conduct detailed operations evaluations that lead to operations efficiencies and cost saving for their operations. In this work, Mr. Chen has provided support for some of the largest water and wastewater utility operations in the U.S., including that for New York City, New York, and Washington, DC. Most recently he was part of the Veolia team that worked with the Detroit Water & Sewerage Authority in conducting an operations assessment, which yielded a comprehensive due diligence report and a second future planning/operations report for a regional approach for the water and wastewater operations.

Mr. Chen's experience includes working as a Senior Technical Specialist, Senior Project Manager, Technical Manager, as well as Research and Development (R&D) Specialist. He has extensive experience in water, wastewater treatment and water quality, and has worked on numerous study, planning, design, and services during construction projects. This work has included master planning, water and wastewater treatment, taste and odor control, asset management, biosolids management, residual management, and water quality.

Work History:

- **2014-Present: Process and Operations Optimization Manager – Engineering and Optimization Group – Municipal and Commercial Technical Support Group – Veolia Environnement North America**
 - Works as part of an in-house specialty team that provides technical and management support for new and ongoing projects with municipal and commercial clients. This involves supporting projects under the water treatment and supply, wastewater collection and treatment, and energy utility operations and management.
 - Served as a Technical Support Manager for PPS and O&M project sites, including:
 - DC Water and Sewer Authority (DC Water), Washington, DC. - Project involved conducting an independent comprehensive review of the operations and management of the Washington Aqueduct (WAD). The focus of this work was on examining WAD's operations, considering: overall operational efficiency; reliability and security of supply; and total water quality management.

Under the DC Water PPS project task, a key work task included: conducting a workshop evaluating the induction mixer to improve rapid mixing, review of water quality and chemical dosages, alternatives for controlling algae in the two water treatment plants) for the Washington Aqueduct McMillan Water Treatment Plant.

- Pittsburgh Water & Sewer Authority (PWSA), Pennsylvania – This PPS project has involved evaluating the operations of this agency’s water and wastewater operations. This utility serves more than 300,000 people in the greater Pittsburgh area. A main area of focus for the work was on the development of Key Performance Indicators (KPIs) that were used to drive system improvements for the PWSA. Work tasks engaged in under this contract involved evaluating the algaecide alternative, and CAL-FLO replacing lime.
- Detroit Water & Sewerage Department, Michigan – Served as part of a team that worked with the DWSD along with Counties in the greater Detroit area in shaping comprehensive water and wastewater solutions considering the needs of the City and those of customers in the surrounding County areas. The work involved developing a comprehensive Peer Review Report, along with a second report (Retail Report) that discussed issues surrounding the formation of the Great Lakes Water Authority and the impact of that on operations of the DWSD and the City of Detroit. These reports involved performing extensive due diligence of the City’s water and wastewater assets, preparing reports documents and supporting materials, and then presentations to multiple parties, including state level and judicial, City and County managers. Work tasks under that contract included conducting a process review for the DWSD’s five water treatment plants.
- City of Buffalo, New York – This is an O&M contract that began in 2010 for operations and management of a water system serving a population of 280,000, with facilities and operations that include: a 160-MGD surface water treatment plant; 814 miles of water distribution system, customer service management (meter reading, billing and collections); capital program management; and underground asset management (UGAM) and above-ground asset management programs. Involved in supporting this operation in soliciting bids for an induction mixer and streaming current monitor, and alternative evaluations for these systems.
- City of Brockton, Massachusetts – This is an O&M contract that began in 1988 and includes: water operations for a 1.3-MGD and a 24-MGD surface water treatment plant, two raw water pump stations (40-MGD capacity), and two ground storage tanks (11.4 million gallons capacity); and wastewater operations for a 20.49-MGD tertiary wastewater treatment plant, three pump stations, and an 18 dry ton per day multiple-hearth sludge incinerator. Served as the Lead Technical Support Specialist for the conduct of a comprehensive water quality and water treatment plant review. This included evaluating alternatives for algae control, TOC and manganese removal, and evaluating manganese removal and short filter runtime, as well as backwash pump cavitation issues.
- Owned and Managed Energy Operations – Conducted a comprehensive system operation and optimization review for two Veolia energy makeup water treatment plants, including: Kendall Station Cogeneration in Cambridge, Massachusetts and the Grays Ferry Cogeneration Plant in Philadelphia, Pennsylvania. This included performing a review of river source water pretreatment alternatives, and identifying optimization opportunities of the ultrapure water treatment processes.
- **2013-2014: Independent Water Consultant – Solon, Ohio**
- **2012-2013: Project Principal - ARCADIS US Water – Cleveland, Ohio**
 - Served as Task Lead for softening water treatment plant upgrade and expansion evaluation for:
 - Dayton and Montgomery County Water Efficiency Master Plan, Ohio- Worked as the senior consultant and lead author of the three tasks reports, including: Task 5 - Water Treatment Plant Capacity Evaluation and Assessment for two 96-MGD softening water treatment plants; Task 6

- Regulatory Review and Compliance Assessment; and Task 9 – Evaluation of Groundwater Wells Reclassification’s Impact on Water Treatment.
- Delaware County Water System Master Plan, Ohio – Served as the Task Lead for water treatment. The work involved evaluating the historical water productions and forecasted the future water production profile. Evaluated the treatment plant expansion and upgrade needs for four surface water and groundwater softening plants to best utilize the available source of supply to meet the future water supply needs. Provided recommended scope of work, process schematic and opinion of cost for upgrading and expanding the water treatment plants.
- Northeast Ohio Regional Sewer District (NEORS) - Cleveland, Ohio – Worked as a Technical Consultant/ O&M Manual Task Process Engineer for the NEORS’s Southerly Wastewater Treatment Plan’s biosolids handling facility. Responsible for preparing an O&M manual for the centrifuge dewatering system.
- Eureka Resources, Pennsylvania - Served as Process Mechanical Design Task Leader for a new frac wastewater treatment plant. The process included: oil/water separators; primary clarifiers; pH adjustment units; membrane biological reactors; crystallizer; sludge thickening and dewatering units; and various raw wastewater and treated wastewater storage tanks. Lead the design documentation preparations and coordinated and reviewed the P&ID drawing development.
- New York City, Department of Environmental Protection, New York - Performed a quality assurance and quality control (QA/QC) role for the NYDEP’s Groundwater Treatment BOD report. Reviewed basis of design report for treatment of three well sites which uses treatment processes such as air stripping with and without vapor GAC adsorption, liquid GAC adsorption, and chemical oxidation followed by filtration for iron and manganese removal.
- City of Monroe, Michigan – Served as the Technical Lead for the City’s Water Treatment Plant Ozone System Improvement Study. Assessed the current conditions of the existing system, evaluated different generator and ozone contactor improvement alternatives, and made recommendations and provided opinion of cost for each alternative.
- Other Work - Supported winning proposals for Akron Water Quality Modeling, Alliance Joint Dewatering System, and Minneapolis Water Pool of Consultants. Served as: Technical Knowledge and Innovation and Technical Community of Practice member; Client Account Manager for Aqua Ohio and Pennsylvania American Water; and manager and support specialist for business development efforts, including pursuits with DWSD, NEORS, the Louisville Water Company, the City of St. Louis, the MSD, the City of Toronto’s wastewater treatment plant, the City of Ann Arbor’s water treatment plant, the City of Toledo’s water treatment, and the Warren County water treatment plant.
- **2012: Technical Director and Technical Practice Network Leader, Water and Urban Development - AECOM Asia - Hong Kong/Shanghai China**
 - Served as the Technical Practice Network Leader and the Team Leader for: Asian Development Bank/JiangXi Government Boyang Lake Water Resource Management project; Project Manager of Shanghai Wastewater Treatment Plant Sludge Management Strategy Optimization Study; and Process Lead for the 50-MGD first membrane filtration plant feasibility study, and first 37-MGD sea water desalination plant feasibility study proposal in Hong Kong.
- **2010-2012: Regional Director, Water and Urban Development - AECOM China – Shanghai**
 - Served as the Regional Director for Water and Urban Development in China with responsibility for: operation, strategic plan development, client management, business development and project delivery and staffing management of PRC WUD business line; leading the team winning record numbers of ADB and WB funded PPTA, ADTA and loan implementation projects (over \$10M USD) in 12 months; conducting high profile national strategy and policy projects in China on Boyang Lake

Water Resource Management (largest fresh water lake in PRC), National Stormwater Management and Water Logging Prevention Policy Study, and National Wastewater Treatment Plant Sludge and Wastewater Reuse Technology and Policy Study for PRC; consulting on wastewater treatment plant sludge management technical route studies for Beijing and Shanghai, two largest municipalities in PRC, including two of world's largest wastewater treatment plants: the Beijing GaoBeiDian plant and the Shanghai BeiLongGang plant; and serving as Process Manager for the Hong Kong Shatin Water Treatment Plant reprovisioning (expansion from 90-MGD to 145-MGD) with ozone and two-stage filtration (one biological) treatment processes.

- **2010: Senior Project Manager/Senior Technical Specialist - AECOM - San Francisco, California**
 - Worked as Senior Project Manager supporting AECOM Water operations and projects in North America. This included:
 - Project Manager and Lead Process Engineer on the Groundwater Reuse project for NASA Ames Research Center in Moffat Field, California. Upgraded the collection system from three pump-and-treat groundwater treatment systems, conducted hydraulic analysis and designed the pump and control upgrades. Designed the modifications of converting the existing 240,000 gallon tank into a RO permeate storage tank. Lead the alternative evaluation, and design services for treating the three different sources of pump-and-treated groundwater. Prepared the D/B contract for construction of a new 850,000 gallon tank. Designed the upgrade to the RO pretreatment system including the installation of dual media filter, UV reactor, and chemical feed system. Designed the refurbishment of the RO system including the new pumps, sensors, and RO membrane elements. Designed the new CIP system, and CIP waste neutralization and disposal system and piping, RO concentrate disposal system and piping. Designed and upgraded the control system for the RO permeate distribution system, provided the constant pressure in the system that allows the auto-source switching in the event the distribution system loss of pressure.
 - Engineering Manager for a multi-year, as-needed, system-wide zebra mussel study and control project with the California Department of Water Resource.
 - Senior Technical Consultant on the City of Portland, Oregon's, 225-MGD Bull Run Water Treatment Plant Chlorination Alternative Study. Evaluated bulk hypochlorite storage and feed, low strength (0.8% wt.) onsite generation of hypochlorite, high strength (12% wt.) onsite generation of hypochlorite, and onsite gas chlorine generation technologies. Conducted the conceptual design, including sizing, layout, list of equipment, construction and O&M cost estimate. Conducted the market research on installations, operation experience and cost.
- **2006-2009: Global Drinking Water Oxidation & Disinfection Technical Practice Workgroup Leader, Project Manager and Senior Technical Specialist – Metcalf & Eddy, Inc. (later acquired by AECOM) – Cleveland, Ohio**
 - Served in multiple roles for an engineering and operations company, including serving as: Global Drinking Water Oxidation and Disinfection Technical Workgroup Leader; International Ozone Association Champion; Ohio American Water Company (OAWC) Client Coordinator; Senior Technical Specialist; and Project Manager.
 - Key project work and accomplishments included: developing the company's first project for from both Ohio American Water and Pennsylvania American Water, and then managing the treatment plant projects with these two clients; developed the \$25 million Ashtabula Water Treatment Plant design/build project with the OAWC; organized the workshop for IO₃A and IUVA/IO₃A conferences; served as Project Manager and Lead Process Engineer for the OAWC Marion Water Treatment Plant chemical and filter systems improvements project; served as Project Manager for the OAWC Marion Water Treatment Plant needs assessment study, and on-call engineering services for both water and wastewater systems; served as Project Manager for the Elyria Water Treatment Plant intake study and preliminary design project; served as the Lead Technical

Engineer on the Shreveport ozone system improvement study and preliminary design project; served as the Lead Technical Engineer on Miami-Dade County Water and Sewer Department's Hialeah Water Treatment Plant filter backwash improvement alternative evaluations; served as the Project Manager and Lead Process Engineer for the Pennsylvania New Castle water treatment plant filter-to-waste addition project; and Project Engineer for the Northeast Ohio Regional Sewer District's ECT-4 Baffled Drop CSO Shaft Physical Model Study.

- **2001-2006: Multiple Technical and Management Roles - CH2M HILL – Detroit, Michigan**
 - Worked in multiple roles, including: Northeast Regional Water Process Practice Leader; Northeast Regional Water Treatment Technology Leader; member of the Detroit Client Service Management Team; Member of the Northeast Regional Water Service Team; Technical Director of China Water Business Group; and Project Manager.
 - Responsibilities in these roles included: contributing to developing strategic business plan for local, and region-wide markets; maintaining client contact and involvement in business development efforts for strategic water projects; and contributing to business development for water projects in Ann Arbor, Louisville, Cincinnati and other communities in the Mid-West.
 - Worked on multiple projects with the DWSD, including:
 - Task Manager for DWSD's 50-year Comprehensive Water Master Plan. This work involved: evaluation of capacity development; analysis and projection of significant industrial flows and loadings; and projected flows from significant industrial users (SIU) and quality in the next 50 years by decade, industrial category, and geographic areas, within DWSD's service area.
 - Task Project Manager for the summary and evaluation of Detroit wastewater treatment plant capacity and performance, as part of the development of a comprehensive wastewater master plan for the DWSD. The plant has a rated secondary treatment capacity of 890-MGD, and primary treatment capacity of 1,700-MGD. Summarized the design criteria; assessed the existing and near-term capacity under the comprehensive treatment plant renovation project for both liquid and solids processing streams; conducted water quality and compliance status analysis; and discussed the suitability of the plant to meet future expansion and treatment needs including the proposed additional dewatering from CSO basins.
 - Project Manager and Lead Process Engineer for improvements to two wastewater treatment plant pump stations, including pickle liquor buildings, the polymer utilization building, and main plant influent building rehabilitation for DWSD. The wastewater treatment plant has a secondary treatment capacity of 890-MGD. Replaced all polymer delivery pumps, pickle liquor feed and transfer pumps, and influent sampling pumps. Managed the selection and sizing of various chemical and wastewater transfer pumps, with specific consideration of handling chemicals and high solids applications, and designed the new piping layout and control system. Assisted in preparing the specifications for various pumps and pipes and oversaw the design and specification of the basket strainers. Prepared construction documents and provided services during construction.
 - Managed an evaluation of long-term solids disposal alternatives as part of the development of a comprehensive wastewater master plan for DWSD. The plant has a rated secondary treatment capacity of 890-MGD. Conducted a thorough review of the current solids production and handling practices at the plant; reviewed the applicable treatment technologies and current and future regulations; and developed various alternatives and implementation plans as well as a scoring system to rank and select the recommended alternatives. Also developed capital and operations cost estimates for each alternative.
 - Project Manager and Lead Engineer for field sampling activities review and pre-audit service for the DWSD. Reviewed program documents and QA/QC procedures as well as the standard operating procedures. Audited the field sampling safety issues, reviewed EPA auditing reports

and pertinent federal regulations and EPA guidelines, and recommended areas that needed improvement.

- Manage and Lead Engineer for the preparation of a low-interest loan application for the Drinking Water State Revolving Fund for the DWSD. Prepared an overview project plan for the 2004-2008 loan programs, successfully securing \$30M per year in low-interest loans from the Michigan DWSRF.
 - Task Manager for a source water protection project for DWSD. Summarized the pertinent federal and state regulations and international charters and agreements related to the Great Lakes and reviewed the associated watershed initiatives, trends, and programs, as well as the current and future monitoring technologies. Investigated the existing spill notification system and procedures and conducted a national survey on the early-warning monitoring and source water protection programs. Developed the framework for establishing a source water protection program. Made recommendations for short-, intermediate-, and long-term improvement and proposed the scope and estimated cost of the near-term capital improvement project needs of this first source water protection plan for a surface water utility in Michigan.
 - Task Manager for the development of a water quality management and treatment plant capital improvement plan for DWSD, covering their five water treatment plants (with a combined capacity of over 1.7 billion gallons per day). Reviewed the past and ongoing projects, reviewed the short-term and long-term water quality regulations. Developed short- and long-term water quality goals. Conducted a thorough assessment and evaluation of the current treatment process for capacity, technology and performance. Selected future treatment technologies and prepared the conceptual preliminary design and cost estimate for each plant, including ozone and UV installations. Coordinated ongoing plant improvement projects and developed a capital improvement plan for plants that would meet both system growth and water quality needs while maintaining a limited increase (6-7 percent) of water rate to DWSD customers in the future.
 - Task Manager for the development of DWSD's Wastewater Master Plan, which addressed: Significant Industrial Flows, Capacity and Performance Evaluation of the Detroit Wastewater Treatment Plant, Wholesale User Survey, and Long Term Solids Disposal Plan tasks.
 - Managed the development of a customer survey and service plan for the DWSD. Designed the survey form and managed the design and distribution of the survey questionnaires.
 - Project Engineer for the update of DWSD's industrial pretreatment program local limits database, including modification of the program and local limits calculation.
 - Project Engineer for Phase I and project manager for Phase II of an atmospheric deposition study for the DWSD, addressing the air deposition addition of mercury, cadmium, and PCBs loads to the headworks of a wastewater treatment system. Developed a quality assurance project performance plan and field sampling standard operating procedures, and coordinated the lab SOPs. Managed the water-phase sampling and led data analysis. Interfaced with subcontractors and labs; conducted detailed chronicle and statistical data analysis of pollutant concentrations, fluxes, or loadings for dry deposition, wet deposition, runoff, ambient, and treatment plant influent and effluent. Developed several approaches in estimating the quantitative relationships between the air deposition and runoff, air deposition and the plant headworks loadings of PCBs, mercury, and cadmium. Prepared responses to the steering committee's review comments. Conducted all data treatment and prepared the final study report, providing the crucial information for the state to establish the regulatory policies toward these chemicals.
 - Served as Senior Technical Consultant and Lead Engineer for a brackish groundwater treatment pilot study and preliminary design of the reverse osmosis water treatment plant at Moron Air Force Base in Spain. Led the technical evaluation and process design for providing portable water
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to the base by evaluating, piloting, and designing a 1-mgd groundwater treatment facility. Conducted the desktop evaluation for alternative technologies to remove hardness, nitrate, TCE, and salinity from the groundwater sources. Developed the test plan and conducted the pilot tests on GAC, ion-exchange demineralizer, and reverse osmosis processes. Provided air-stripping unit troubleshooting, scale control evaluation, and preliminary design. Evaluated concentrate disposal alternatives and developed the construction cost estimate.

- Served as the Project Manager and Lead Process Engineer for the evaluation and design of an ozone system to remove geosmin-caused drinking water tastes and odors from the Lucerne Water Treatment Plant for the California-American Water Company. Evaluated the bench treatability data, designed the ozone and ozone/H₂O₂ application dose, and established the remaining ozone system design criteria, including a construction cost estimate. Prepared preliminary design of the system and evaluated different types of ozone generators, ozone dissolution methods, and ozone contactors. Determined final design, which included a LOX-feed ozone generator with side-stream injection skid and a pipeline contactor with the options of using an ozone contactor for disinfection (ozone alone) and taste and odor removal (ozone/H₂O₂) or T&O removal only.
 - Served as the Lead Process Engineer for construction and start-up of the 17-MGD Windsor Water Treatment Plant's new ozone system. The scope includes the construction management, start-up of the ozone system, optimization of the ozone residual analyzer layout and design and upgrade of the ozone-quenching agent with calcium thiosulfate to increase quenching capacity and safety. Participated in the resizing of the tanks and redesign of the layout and spill containment area. Participated in process and start-up troubleshooting, including how to achieve the desired log inactivation of *Cryptosporidium* and residual quenching during winter season.
 - Served as a Senior Consultant for ozonation design for the 167-MGD Tacoma, Washington, water treatment plant. Developed design criteria and evaluated bench testing results on geosmin and MIB removals. Employed the experimental design approach. Conducted statistical analysis of the experimental data, summarized the findings and conclusions of the tests, and prepared the study report.
 - Served as Senior Consultant for an algal toxin removal project for the American Water Works Research Foundation (AWWARF). Prepared the testing plan using statistical experimental design methodology for ozone oxidation, UV/H₂O₂ oxidation, and PAC adsorption of the microcystin-LR. Conducted a statistical analysis on the testing results and prepared the study reports.
 - Managed and served as Lead Technologist for a filter backwash and recycle stream evaluation and improvement study for the 27-MGD water treatment plant in the City of Ann Arbor, Michigan. Investigated the filter backwash and other recycle stream practices, as well as the average and peak instantaneous flow of each stream, and evaluated the potential hydraulic and water quality impact to the treatment process. Facilitated a plant staff workshop to develop operational and process improvements. Prepared report to submit to the Michigan Department of Environmental Quality.
 - Served as Process Engineer for the development of a master water plan for the City of Ann Arbor, Michigan. Led a water treatment plant process criteria evaluation and evaluations of the treatment of 1,4-dioxane from the groundwater.
 - **1992-2001: Multiple Technical and Management Roles - TETRA TECH MPS - Detroit and Ann Arbor, Michigan**
 - Worked as Project Manager, Senior Project Engineer, Project Engineer; and Water/Wastewater Technology Council Member.
 - Served as Process and Project Engineer for the Baby Creek combined sewer overflow control study for DWSD. Conducted a literature review, provided dry and wet weather multi-stage sampling of the CSO events, and performed bench-scale evaluations of various disinfection options, including UV, ozone, sodium hypochlorite, peracetic acids, and sodium bromide with sodium hypochlorite.
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Proposed recommendations and disinfection design criteria. Prepared the disinfection study report and reviewed the final design study report.

- Served as Lead Engineer for a drinking water taste-and-odor study for DWSD, which received the 1998 Research and Technical Practices Award from the Michigan Section of the AWWA and required the development of monitoring and experimental plans and analytical standard operating procedures. Trained senior chemists to become flavor panelists, coordinated the monitoring efforts and flavor profile analysis, interfaced with clients, and conducted comprehensive powdered activated carbon and ozonation treatability studies to remove the taste-and-odor-causing compounds from the water. Investigated a broad range of operational parameters and identified their impact to the odorant removals. Developed mathematical models for quantitative assessment of operational parameters and performance prediction.
- Served as Project Manager and Lead Engineer in the development of ozonation design criteria for taste and odor control and Cryptosporidium inactivation for DWSD. Conducted an ozone demand and decay study, and developed the design criteria for meeting the requirement of disinfecting Giardia and Cryptosporidium. Assessed the impact of the proposed treatment technologies on the current operation. Prepared the progress and final study reports and made presentations to the client.
- Served as Lead Engineer examining powdered activated carbon and chlorine interaction impact on T&O compound removal and contact time value for DWSD. Performed CT calculations under various conditions for four water treatment plants and made design and operational recommendations.
- Served as Process Engineer for an implementation assessment of PAC storage, dosing, and delivery facilities at four water treatment plants for DWSD. Developed the design criteria for upgrading the powdered activated carbon dosing systems and reviewed the conceptual design and cost estimate of the PAC feeding system. Also provided an engineering feasibility valuation of building centralized PAC storage and dosing facilities. Reviewed the contact time calculations under various PAC addition points for the four plants and developed design criteria for alternative PAC dosing systems.
- Served as Process Engineer for a backwash and residual management improvement project for DWSD. Developed the treatment process basis of design criteria and conceptual design for handling the backwash water and plant treatment residual for four water treatment plants with a combined capacity over 1,600-MGD. Conducted the historical data analysis and scenario analysis for determining the optimum equalization volume and treatment process design capacities.
- Served as a Co-principal Investigator which involved conducting an investigation for a taste-and-odor materials evaluation workshop for the American Water Works Research Foundation. Convened an international expert panel to develop a new AWWA drinking water standard for testing materials from taste and odor perspectives. Organized a workshop, managed literature review, and prepared the final standard and project report.
- Served as Resident Project Engineer for a seven-month pilot study to treat the low-strength, organics-containing cooling water for the Upjohn Company in Kalamazoo, Michigan. Participated in the planning, initiation, and operation of a 30-gpm carbon fluidized bed biological reactor. Coordinated with the client, vendor, and project manager and prepared weekly and final project reports.
- Served as Field Project Engineer for a three-month feasibility study for the Kellogg Company of Battle Creek, Michigan, for the treatment of high-strength BOD/COD cereal-production wastewater using a pilot upflow anaerobic sludge blanket bioreactor. Obtained optimum operation and design conditions and addressed typical operation interference such as shock loads of BOD and TSS.

- Served as Project Engineer for Michigan's Rouge River CSO control study for a national wet weather demonstration project. Trained the sampling crew, developed the field sampling SOPs, and coordinated with the weather service. Conducted detailed data analyses, such as concentration and load profiles for different pollutants, removal efficiencies, and overflow discharge quality. Drafted final report and provided recommendations for sampling and design of the future CSO basins.
- Served as Project Engineer for Michigan's Rouge River settling column study, as part of a CSO control study for a national wet weather demonstration project. Developed the experimental and sampling plans, trained technicians, performed data analysis, and drafted the report.
- Assisted in the evaluation of CSO control technologies and performance of retention basins in the Rouge River watershed. Assisted in evaluating the retention basin's effectiveness in disinfecting and removing numerous pollutants. Reviewed existing column testing protocol and proposed new protocol using modified columns and Imhoff cones. Developed a protocol for evaluating disinfection and the standard data analysis procedures to be used at all basins within the Rouge watersheds. Reviewed the mathematical models (steady-state settling model, statistical models, and dynamic models) available for predicting the basin long-term performance and individual event performance and assessed their advantages and limitations. Worked with modeling experts to develop new dynamic models for the project and developed the protocol for disinfection evaluation.
- 1991-1992: Process and Environmental Engineer (Biotech scale-up and Groundwater remediation projects) - ARCTECH, Inc. - Alexandria, Virginia
- 1988-1991: Research Assistant and Graduate Student (Thesis: Enzymatic Oxidation of Phenolic Pollutants) – University of North Carolina at Chapel Hill, Department of Environmental Engineering – Chapel Hill, North Carolina
- 1985-1988: Research & Design Engineer (industrial wastewater treatment) and Teaching Assistant – East China University of Chemical Technology, Department of Environmental Engineering and Institute of Chemical Environmental Engineering

Publications:

- Completed numerous technical articles, reports and other publications on topics related to water and wastewater treatment, water quality and research and development related topics.
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Education:

BA, Marketing/
Communications,
Southern Methodist
University (1984)

Memberships/ Affiliations:

Indianapolis Urban
League

Indianapolis Sports
Corporation
President's Council

Indiana Business
Diversity Council

Purdue University
Science Bound

St. Mary's Child
Development Center

Big Ten Basketball
Tournament
Committee

American Water
Works Association
(AWWA)

Awards:

Indiana Basketball
Hall of Fame

2005 Achievement in
Business Award,
Center for Leadership
and Development

2006 Sam Jones
Award, Indianapolis
Black Chamber of
Commerce

Background:

Mr. Gadis is Vice President and Manager for Sales with the Municipal and Commercial Group of Veolia in North America. In this role he leads a team that is responsible for new project development and the support of ongoing projects and client relationships. This work has included supporting alternative project delivery approaches to municipal clients in the North American market. His recent work has focused on working with Veolia's team at the City of Detroit, Michigan, to support the identification of utility needs and solutions/approaches to address the City's water and wastewater utility.

Mr. Gadis was also a part of the Veolia team that working with the New York City Water Board and New York City Department of Environmental Protection (DEP) under the Operational Excellence (OpX) program. This team is charged with examining water and wastewater operations in the City with the goal of developing recommendations to streamline workflows, boost productivity, identify opportunities for efficiency gains, and keep future water rate increases as low as possible.

Prior to his current role, Mr. Gadis was the President of Veolia Water Indianapolis, LLC, the company that was charged with managing the water system providing service to almost a million in Central Indiana. The scope of this contract involved operating, maintaining and managing a water treatment, storage and supply system, a customer service organization responsible for meter reading for some 310,000 connections for the City of Indianapolis and an additional 15,000 connections through contracts with surrounding communities, as well as billing and revenue collection for 600,000 accounts. The contract also included a capital project component, and Veolia Water managed and implemented in excess of \$200 million in capital work to improve the City's aging water infrastructure.

Prior to that, Mr. Gadis managed the procurement and operations of the Indianapolis Water operations, with responsibility for administering the Veolia Water Indianapolis minority-owned (MBE), woman-owned (WBE) and other locally-owned business involvement efforts. The success of this was demonstrated in the company's unmatched success in achieving local involvement in all aspects of the project work at levels that well exceeded all of the City's goals and expectations-- keeping 92% of the dollars spent in the local economy and maintaining a 35% M/WBE participation level. He also provided leadership for Veolia Water's local involvement program in Indianapolis, with involvement in numerous community service organizations in the community. Additionally, Mr. Gadis has played a key role in shaping Veolia Water's national program for MBE/WBE recruitment and involvement in governmental and industrial projects at sites across North America.

Mr. Gadis has over 23 years of overall business experience, with more than 14 years of management experience, and his involvement with the Indianapolis water facilities began back in 1998, working as the Director of Procurement for Indianapolis Water Company. He joined Veolia Water Indianapolis in 2002 on the transition of the water facilities.

Key Experience:

- **2013-President: Vice President and Manager – Sales – Municipal & Commercial Group - Veolia North America – Indianapolis, Indiana**
 - Provides leadership for a Sale team and new project development for Veolia’s water and energy utility services line in North America.
 - Work has included the development and support for projects under Veolia’s Peer Performance Solutions (PPS) approach, including a new project with the DeKalb County, Georgia, Department of Watershed Management (DWM). This work is focused on helping the County identify cost savings and help improve customer service by conducting a comprehensive and independent review of their water and wastewater operations. DWM provides services to 700,000 residents in the Atlanta metropolitan region through its system of water treatment and distribution, customer service, and wastewater collection and treatment.
 - **2010-2013: Vice President – Municipal Sales Group – Veolia Water North America Operating Services, LLC – Indianapolis, Indiana**
 - Provided leadership for the company’s sales and development program that has focused on identifying and developing innovative utility operations solutions for major cities in the U.S.
 - Worked as a part of the Veolia Water team for the Operational Excellence (OpX) program with New York City. The work is divided into two phases, with the Veolia Water Team first conducting an initial evaluation and recommendation phase that will result in a final report in 2012 of recommendations on how DEP can improve productivity and reduce costs. Based on that report, DEP has the ability to accept or reject any of the proposed operational changes and cost-saving measures. Improvements that DEP chooses will be implemented over a four-year period.
 - **2008-2010: President – Veolia Water Indianapolis, LLC - Indianapolis, Indiana**
 - Served as the Executive officer for Veolia Water’s operations of the City’s water systems, under a project that was completed in 2011.
 - Served as a part of the transition management team responsible for managing the transfer of the water operations (owned by the City) to a new owner and operator. The sale of the City’s water treatment and supply assets, which serve almost 1 million people in the region, was completed in 2010, and the transition of services was completed in August 2011. The key challenges of that process involved maintaining the levels of service and quality for the customers that rely on the water system, and providing ongoing operations, maintenance and management services as the new owner is allowed to implement its own operations and management approach.
 - **2003-2008: Vice President and Chief Operating Officer – Veolia Water Indianapolis, LLC - Indianapolis, Indiana**
 - Responsible for day-to-day operations of the company, including field services, production, engineering, construction, procurement, risk management, asset management, laboratory services, health and safety, security, IOS9001 and 14001, as well as the company’s MBE/WBE program.
 - **2002-2003: Vice President of Shared Services – Veolia Water Indianapolis, LLC - Indianapolis, Indiana**
 - Responsible for procurement, fleet, risk management, warehousing, health and safety, security, and M/WBE development.
 - **2000-2002: Vice President – Water Materials Unlimited (Indianapolis Water Company subsidiary) – Indianapolis, Indiana**
 - **1998-2000: Director of Procurement - Indianapolis Water Company - Indianapolis, Indiana**
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- Acted as Director of Supply Chain Management, with responsibility for a \$15 million budget, \$8 million in sales, non-regulated business development, and \$7.5 million minority vendor program.
- Responsible for liability and property insurance claims, developing and administering the company's risk goals and objectives, and overseeing the procurement of goods and services.
- **1995-1998: Vice President – Monroe Guaranty Insurance – Indianapolis, Indiana**
 - Responsible for claims management, including \$125 million of claims expenses.
- **1989-1995: Midwest Regional Manager – USF&G Insurance Company – Indianapolis, Indiana**
 - Managed 16 branch office operations, 120 employees and \$200 million in written premiums. Responsible for re-engineering efforts in the company.
- **1984-19889: Senior Claims Adjuster – USF&G Insurance Company – Indianapolis, Indiana**
 - Responsible for handling general liability, auto and property claims, and special investigations.

Attachment 2

**Summary Table –
Water Treatment Plant O&M Experience**



Attachment 2. Veolia - Water Treatment Plant O&M Experience Summary

Client/Location	Flow	Scope	Major Process(es)	Dates
Ashburnham-Winchendon Joint Water Authority, MA	2 MGD	O&M of Surface Water Treatment Plant	Trident Filtration, Microfloc Microfiltration	2001-Ongoing
Blackwell, OK	1.55 MGD	O&M of Groundwater Treatment Plant	Conventional Treatment with Filtration	2001-Ongoing
Brockton, MA	24 MGD	O&M of Surface Water Treatment Plants	Conventional and GAC Filtration	1988-Ongoing
	1.3 MGD		Upflow Clarification, Direct Filtration, Microfloc Microfiltration	
Gloucester, MA	10 MGD	O&M of (two 5-MGD) Surface Water Treatment Plants	Conventional Treatment, Rapid Mix, Rapid Sand Filtration	2009-Ongoing
Heavener, OK	3 MGD	O&M of Surface Water Treatment Plant	Clarification, Filtration and Disinfection	1996-Ongoing
Latimer County, OK	0.23 MGD	O&M of Surface Water Treatment Plant	Surface Water Treatment Plant	2007-2017
Lynn, MA	15 MGD	O&M of Surface Water Treatment Plant	Rapid Mix Direct Filtration	1987-Ongoing
Leominster, MA	4 MGD	Design/Build and O&M for Multiple Surface Water Treatment Plants	Multi-Media Direct Filtration	1988-Ongoing
	2 MGD		GAC Filtration	
	1.2 MGD		Conventional (Rapid Mix, Upflow Pulsating Clarification, GAC Filtration)	
Sturbridge, MA	1.6 MGD	O&M of Groundwater Treatment Plant	Iron Removal Plant with Pressure, Greensand, Mixed-Media Filtration	1989-Ongoing
Westborough, MA	3.5 MGD	O&M of Surface and Groundwater Treatment Plants	Conventional Treatment, Multi-Media Filtration	1996-Ongoing
	2 MGD		Greensand Iron/Manganese Removal	
City of Atlanta/Fulton County, GA	90 MGD	O&M of Surface Water Treatment Plant	Conventional Treatment, Declining-Rate Filters	1991-Ongoing
Boonville, IN	2.9 MGD	O&M of Groundwater Treatment Plants	Iron/Manganese Oxidation, Dual-Media Greensand Pressure Filtration	1995-Ongoing
	1.9 MGD			
Buffalo, NY	160 MGD	O&M of Surface Water Treatment Plant	Conventional Treatment, Rapid Sand Filtration	2010-Ongoing
Canby Utility, OR	8 MGD	O&M of Surface Water Treatment Plant	Flocculation, Upflow Clarification, Filtration, UV Disinfection	2006-2016
Chattahoochee Valley Water Supply District, Lanett, AL	8 MGD	O&M of Surface Water Treatment Plant	Conventional Treatment, High-Rate, Multi-Media Filtration	1994-Ongoing

Attachment 2. Veolia - Water Treatment Plant O&M Experience Summary

Client/Location	Flow	Scope	Major Process(es)	Dates
Discovery Bay, CA	8.21 MGD	O&M of Groundwater Treatment Plants	Iron Removal with Sand Filtration	2009-Ongoing
Edwardsville, IL	7.78 MGD	O&M of Groundwater Treatment Plants	Greensand Filtration and Zeolite Softening	1987-Ongoing
Hardinsburg, KY	2 MGD	O&M of Groundwater Treatment Plant and Surface Water Treatment Plant	Reverse Osmosis Filtration of Groundwater	1995-Ongoing
	1.2 MGD		Conventional Treatment, Surface Water Dual-Media Filtration with ClariCone Clarification	
Junction City, KS	10 MGD	O&M of Groundwater Treatment Plant	Aeration, Lime Softening	1989-Ongoing
Matewan, WV	0.05 MGD	O&M of Surface Water Treatment Plant	Conventional Filtration	2001-Ongoing
New London, CT	9 MGD	O&M of Surface Water Treatment Plant	Conventional Filtration	2008-Ongoing
National Park Service, Elwha River WTP, Port Angeles, WA	53 MGD	O&M of Surface Water Treatment Plant	Coagulation, Sedimentation	2009-Ongoing
Smugglers Notch, VT	0.15 MGD	O&M of Groundwater Treatment Plant	Pressure Vessel Filtration	1985-Ongoing
Springboro, OH	7 MGD	O&M of Groundwater Treatment Plant	Anthracite Multi-Media Filtration	1990-Ongoing
Tampa Bay Water, FL	120 MGD	DBO for Surface Water Treatment Plant (new plant and expansion)	ACTIFLO Flocculation, Ozonation, Carbon Filtration	2000-Ongoing
	30 MGD	O&M of Groundwater Treatment Plant	Hydrogen Sulfide Stripping via Aeration Towers and Scrubbers	
Tupelo, MS	12 MGD	O&M of Surface Water Treatment Plant	Infilco Filtration Systems	1991-Ongoing
Williamson, WV	4.2 MGD	O&M of Surface Water Treatment Plant	Direct Filtration & Conventional Filtration (GAC and Multi-Media)	1999-Ongoing
Wilsonville, OR	15 MGD	O&M of Surface Water Treatment Plant	ACTIFLO Flocculation, GAC Filtration Ozonation	2001-Ongoing
Yukon, OK	3 MGD	O&M of Groundwater Treatment Plant	Groundwater Treatment Plant	1991-Ongoing

Attachment 3

**Affidavit for Corporate
Veolia Water North America Operating Services, LLC**



CITY OF FLINT, MICHIGAN

AFFIDAVIT

AFFIDAVIT FOR INDIVIDUAL

STATE OF

s.s.

COUNTY OF

.....being duly sworn, deposes and says that he is the person making the above bid; and that said bid is genuine and not sham or collusive, and is not made in the interest of or on behalf of any person not therein named, and that he has not directly or indirectly induced or solicited any bidder to put in a sham bid; that he has not directly or indirectly induced or solicited any other person or corporation to refrain from bidding, and that he has not in any manner sought by collusion to secure to himself any advantage over other bidders.

Subscribed and sworn to before me at, in said County and State, this day of, A. D. 20.....,

*Notary Public,County,.....

My Commission expires, 20.....

FOR CORPORATION * (Limited Liability Company, LLC)

STATE OF Indiana

s.s.

COUNTY OF Marion

David M. Gadis

..... being duly sworn, deposes and says that he is Senior Vice President of Veolia Water North America Operating Services, LLC (Official Title) (Name of Corporation) *

a corporation* duly organized and doing business under the laws of the State of Delaware (LLC) the corporation* making the within and foregoing bid; that he executed said bid in behalf of said corporation* by authority of its Board of Directors; that said bid is genuine and not sham or collusive and is not made in the interests of or on behalf of any person not herein named, and that he has not and said bidder has not directly or indirectly induced or solicited any bidder to put in a sham bid; that he has not and said bidder has not directly or indirectly induced or solicited any other person or corporation to refrain from bidding; that he has not and said bidder has not in any manner sought by collusion to secure to himself or to said corporation an advantage over other bidders.

(Signature) [Handwritten Signature]

Subscribed and sworn to before me at Indianapolis, in said County and State, this 27th day of January, A. D. 20 15,

[Handwritten Signature] Francis P. Crehan

*Notary Public State of Indiana County of Marion

My Commission expires July 24, 20 21.

