



# PROJECT PROPOSAL

for Operation, Maintenance and  
Management Services, Wastewater  
Treatment Facility, City of New Bedford  
February 3, 2020



**WATER SOLUTIONS**



February 3, 2020

**CITY OF NEW BEDFORD**

***Ms. Molly Gilfeather, Director of Purchasing***

City Hall, Room 208, 133 William Street

New Bedford, Massachusetts 02740

Re: **Project Proposal for Operation, Maintenance and Management Services  
Wastewater Treatment Facility, City of New Bedford**

Dear Ms. Gilfeather:

On behalf of **Veolia Water North America - Northeast, LLC, (Veolia)** thank you for the opportunity to bid to continue providing operation, maintenance and management services for the City of New Bedford's Wastewater Treatment Facility and associated infrastructure.

Since 1990, Veolia has provided the City of New Bedford with reliable and compliant services. This newest proposed contract term provides an opportunity for Veolia to address the City's expressed desire for expanded partnership potentially including pump station management and creative solutions via upgraded biosolids processing and energy recovery to generate significant incentive-savings and City economic value. We have prepared our proposal to address these core value goals, delivering new economic benefits to the City, including **\$30 million in potential cost savings over the full 20-year term**. This is made possible by Veolia's industry leading experience to deliver incentive-based savings and value-add offerings which include:

- 1. Schwing Pump Piping Discharge:** Veolia proposes potential 20-year energy savings of over \$729,000 due to revisions to Schwing cake pump discharge piping (Bid Alternate 1).
- 2. Optimized Pump Station Staffing:** Veolia is proposing potential pump station labor savings (Bid Alternate 2). \$3,230,000 in 20-year labor cost savings would be enabled by the receipt of a MADEP daily pump station check waiver (2-FTE staffing reduction).
- 3. Biosolids Solution:** The City currently hauls raw thickened biosolids via a contract with Synagro. Veolia proposes to help the City save money, by minimizing the biosolids moisture and mass for ultimate disposition and utilizing the Class A material as an energy-recovery fuel to minimize biosolids disposition volume and haul away traffic. This would involve an on-site biosolids processing upgrade via a new dual train thermal drying solution at the Solids Handling Building, featuring Veolia's **BioCon™ belt drying Energy Recovery System** (estimated capital cost of \$17.7M), which – along with an integrated **Energy Recovery System** (estimated capital cost of \$28.6M with drying) – could reduce current haul away traffic by a range of 66 to 93%, and achieve potential full project term (20-year) life-cycle savings of more than \$26 million dollars (on a Net Present Value basis).
- 4. Aeration Improvements:** Veolia is proposing possible energy savings for installation of aeration controls of \$376,000. Veolia recognizes and supports the need to optimize the aeration system to ensure that only the additional aeration energy needed to achieve nitrogen removal is delivered to the system and mitigate any excess energy.

Beyond shared technical reliability and economic sustainable goals, the Veolia team you have trusted over the past contract years is the same Veolia team we propose to continue for the next term, and this team will continue to be backed by the behind-the-scenes support of the world's largest network of wastewater industry and technology-driven biosolids management solutions experts.

**Project Manager John Caron** will continue to lead our operations and have responsibility for the potential service scope alternates and the mutual incentive cost savings as outlined above.

John will continue to be supported by Veolia's unmatched technical and management support teams, and, together, they will work to deliver on the commitments contained in this proposal, and collaboratively deliver the proposed approaches and solutions to meet evolving demands as the City's needs change over the next 20 years (10-year initial term, with two 5-year renewals). We are open to working with the City's preferred engineer to implement the Veolia technologies and other recommended capital improvements.

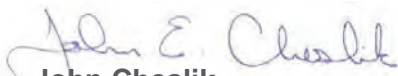
Our proposal submission has been structured to address the requirements of your Request for Proposal, including providing this **Project Proposal** volume and a separate **Price Proposal** volume. As the Senior Vice President and regional Principal for Veolia's current contract with the City of New Bedford, I have executed this Proposal and have the authority to commit our firm to any contract that results from this procurement process.

Veolia's contact person as this procurement moves forward will be:

Mr. Donald J. Benz, Development Manager and Client Liaison  
Veolia Water North America – Northeast, LLC  
53 State Street, 14th Floor, Boston, Massachusetts 02109  
Telephone: (978) 490-0818  
Email: donald.benz@veolia.com

Mr. Benz will be able to answer any questions and respond to any request for additional information related to this Proposal. We look forward to your review of our Proposal and to the next steps in the procurement process, as well as to the opportunity of continuing to serve the City.

Sincerely yours,



**John Cheslik**

Senior Vice President  
Veolia Water North America – Northeast, LLC  
53 State Street, 14th Floor, Boston, MA 02109  
Telephone: (617) 691-1479  
Email: john.cheslik@veolia.com

Attachment:

- Certificate of Secretary (Signature Authority)

**CERTIFICATE OF ASSISTANT SECRETARY  
OF  
VEOLIA WATER NORTH AMERICA-NORTHEAST, LLC**

The undersigned, Whitney Fawcett, Assistant Secretary of Veolia Water North America-Northeast, LLC, a Delaware limited liability company (the "Company"), does hereby certify that John Cheslik is the duly elected and acting Senior Vice President of the Company and in such capacity is authorized to execute contracts and make commitments with regard to the following project:

**CONTRACT OPERATION, MAINTENANCE AND MANAGEMENT SERVICES  
OF THE CITY OF NEW BEDFORD'S WASTEWATER TREATMENT FACILITY  
CITY OF NEW BEDFORD, MASSACHUSETTS**

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Company this 20<sup>th</sup> day of January, 2020.

  
Whitney Fawcett, Assistant Secretary

SEAL





# PROJECT PROPOSAL

for Operation, Maintenance and  
Management Services, Wastewater  
Treatment Facility, City of New Bedford  
February 3, 2020

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

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(Note: Bid/Proposal Bond provided with the Executed Original.)



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- Proposer Qualification Form (with Consent of Surety)

#### Attachment – Proposal Form 1

- Non-Collusion Affidavit & Pricing Commitment

#### Attachment – Proposal Form 2

- Guarantee

#### Attachment – Proposal Form 5

- Resume Forms for Key Project Staff

#### Attachment – Insurance Certificate (Sample)

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#### Attachments:

- Resume Summary Table – New Bedford OM&M Team
- Detailed Resumes for Key Staff and Management Staff
- Copies of Licenses – New Bedford OM&M Team
- Detailed Summaries for Reference Projects
- Supplemental Technical Materials
  - New Bedford Operations: Odor Control Plan, Disaster Preparedness Plan and Emergency Action Plan
  - Taunton Operations: Pump Station SOPs, Daily Electrical Reading Checklists and Pump Station Report
- Financial Statements for Veolia North America, Inc.:
  - 2018 (Draft) Financial Statement
  - 2017 – Audited Financial Statement
  - 2016 – Audited Financial Statement





# PRICE PROPOSAL - CONTENTS

(PROVIDED UNDER SEPARATE COVER.)

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## Price Proposal - Cover Letter

- Certificate of Secretary (signature authority)

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## Attachment – Price Forms

### Proposal Form 3 – O&M Fee

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- Proposal Form 3b - Alternate 1 - Dewatered Sludge - O&M Fee (Wastewater Facility)
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01  
Executive Summary



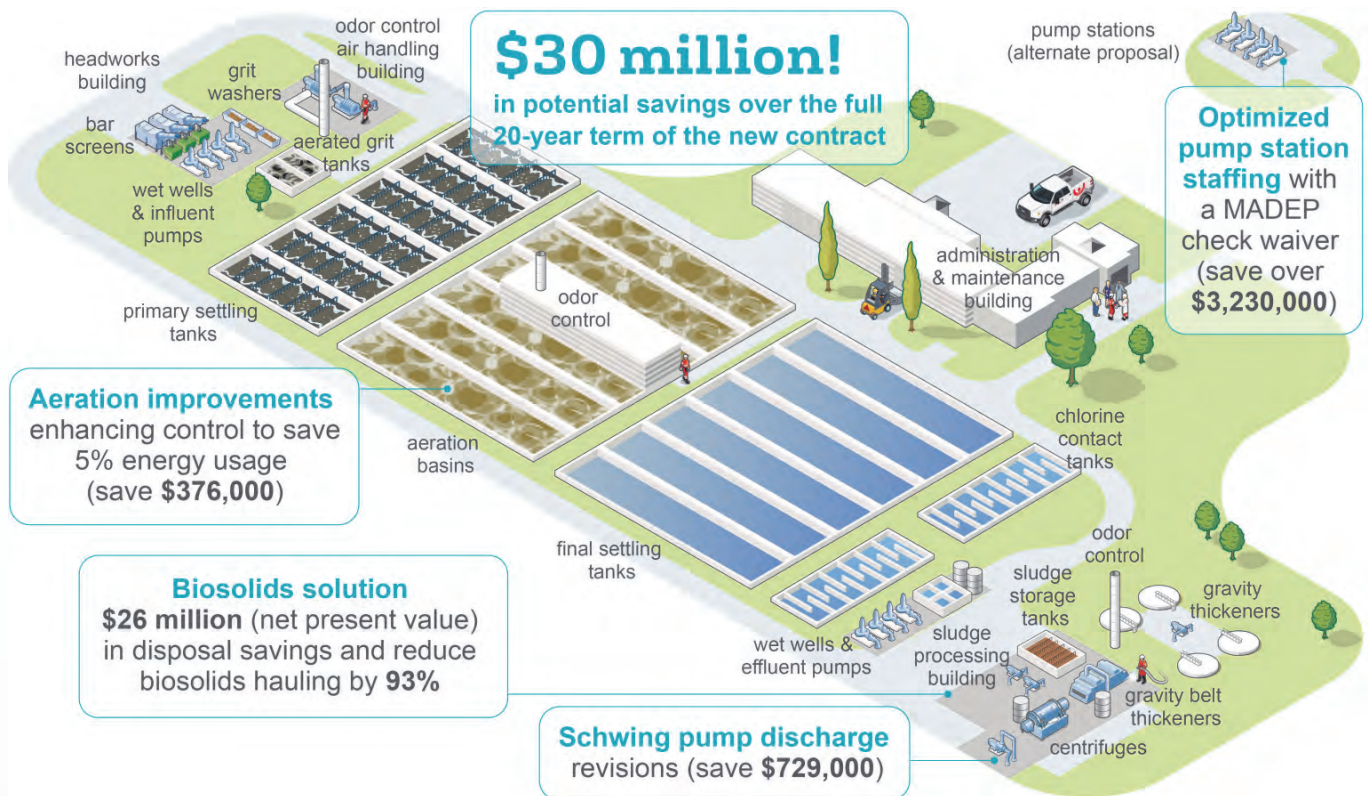
# 1.0

## Executive Summary

Since 1990, Veolia has provided the New Bedford community with reliable and compliant services. Over the past 30 years our philosophy was to provide the City with stable costs, budget predictability and guaranteed performance.

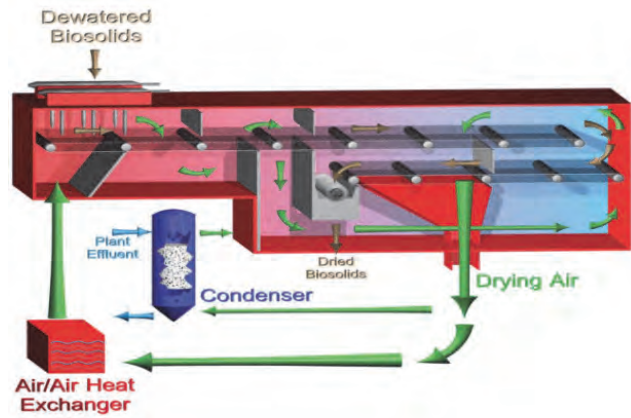
Now, we seek to offer the City more. Building upon the stable platform Veolia has provided for many decades, this new contract offers an opportunity to explore value-add offers which can save the City as much as **\$30 million** over the full term.

Figure 1-1. Veolia's Value-Add Offers for the New Contract





# ENVIRONMENTAL AND FINANCIAL BENEFITS



Veolia is excited to offer the City an opportunity to achieve the following cost savings via a new Class A biosolids program, using Veolia’s proven in-direct heat drying / thermal Energy Recovery System (ERS) technologies:

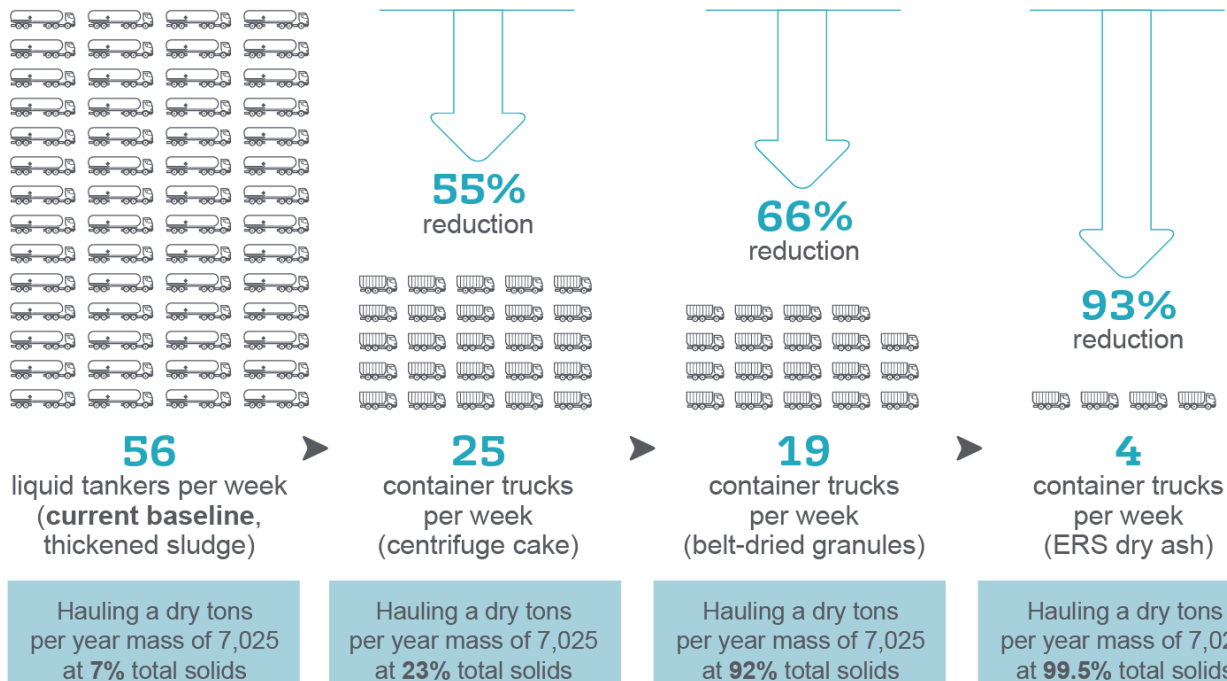
- **Projected Annual Savings: \$1.46M/yr**
- **Projected Total Savings: \$40.5+M (Net Present Value of \$26.0M)**

Including costs to install the equipment, this project offers a 20-year life-cycle **savings of more than \$26 million dollars** (on a Net Present Value basis).

This biosolids solution would be a tremendous value to the City both in terms of energy and chemical management, but also environmental stewardship, as we project reduced truck traffic hauling solids out of the plant, going from **56** liquid tankers to **4** container trucks per week.

This upgraded long-term biosolids management and disposition strategy will significantly reduce the energy and fuel consumption involved with the current approach of hauling thickened liquid sludge to out-of-state incineration.

**Biosolids solution** to reduce liquid hauling costs (20-year life-cycle NPV of over **\$26,000,000**) while reducing biosolids truck traffic from **56** to **4** per week (93% reduction!)



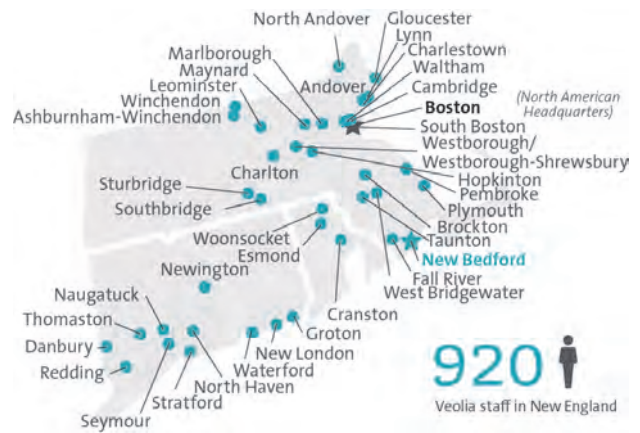


# OBJECTIVES ACHIEVED AND NEW ONES SET

*Veolia’s Proposal provides clear benefits for the City:*

	Past	Future
<b>PAST ENERGY SAVINGS:</b> Modified equipment run-time to provide up to \$200,000 a year in energy savings	✓	
<b>FUTURE ENERGY SAVINGS OPTION:</b> Proposing improvements for additional energy savings		✓
<b>TRANSITION SAVINGS:</b> No transition costs; local experience to support a rapid and reliable assumption of pump station alternate scopes		✓
<b>RELIABILITY:</b> The same highly experienced team you can trust	✓	✓
<b>ODOR CONTROL GUARANTEES:</b> Our Commitment to the Community		✓
<b>SMART CAPITAL PLANNING:</b> Veolia’s CARMS capital planning tool		✓
<b>GUARANTEED NITROGEN REMOVAL:</b> O&M piloting of modified process, already underway and showing results and will continue in the new term	✓	✓
<b>DISINFECTION BENEFIT OPTION:</b> Proposed chlorination system improvements		✓
<b>RESILIENCY:</b> Instituted an effective High Flow Management Plan	✓	
<b>HFMP OPTIMIZATION:</b> Integrate High Flow Management Plan with collections system monitoring probes in 3 main interceptors supporting improved operations		✓
<b>MAINTENANCE AND OPERATIONS QUALITY:</b> Instituted a computerized maintenance management system (CMMS) and process control plan	✓	
<b>MAINTENANCE AND OPERATIONS EFFICIENCY:</b> Enhancement of O&M practices through Reliability Centered Maintenance approach		✓
<b>BIOSOLIDS SAVINGS OPTION:</b> We are presenting a long-term approach to biosolids disposal, with potential savings of \$1M+/year		✓
<b>ENVIRONMENTAL BENEFIT OPTION:</b> Proposed Biosolids solution also carries a significant environmental benefit of reduced truck traffic		✓
<b>BIOSOLIDS DISPOSAL RELIABILITY:</b> Veolia projects (Cranston, RI, and Naugatuck, CT) could dispose of solids as a back-up option if ever needed	✓	✓
<b>BIOSOLIDS POWER UPGRADE:</b> Proposing centrifuge cake pump pipe revisions to reduce energy consumption		✓
<b>COMMUNITY ENGAGEMENT:</b> Partnering with Buzzards Bay Coalition for water testing	✓	✓
<b>CITY and COMMUNITY MUTUAL BENEFITS:</b> Internship/Apprentice Program to be rolled-out in the new contract		✓

# VEOLIA PROJECT STAFFING



Veolia’s key staff are an integral part of the community. From our work supporting the Buzzards Bay Coalition to face-to-face discussions with local neighbors and the business partners, Veolia is committed to the success of the City of New Bedford. Our Key Staff are featured below, including Project Manager, **John Caron**, who has spent much of his 35-year career managing the New Bedford project. Continuing their support of the Project will be Maintenance Manager, **Kenneth Henrique**, Maintenance Manager; **Collis Soares**, Lead Chief Operator; and **Bob Arruda**,

Odor and Noise Technician. These managers will continue to oversee a full-time staff of 28. The project will be supported directly by Veolia’s regional management, technical and business teams under the leadership of our Vice President of Operations, **Darlene Domingos**, and Regional Technical Manager, **Christian Hoan**, who will coordinate a variety of in-house subject matter experts from Veolia’s technical & performance network and extensive regional project resources.

**VEOLIA TRUSTED INDIVIDUALS WITH A PERSONAL AND BUSINESS RELATIONSHIP**



**John Caron**  
Veolia Project Manager/  
Operations Manager/  
Laboratory Manager/  
Permitting & Regulatory  
Lead

- + Massachusetts Grade 7C WW Operator
- + Dedicated Project Manager at New Bedford since 2002
- + 35 years of WW OM&M experience as a Manager and Operator
- + Manager for comparable operations: Fall River, MA (30.9-MGD plant and 17 pump stations) and West Haven, CT (12.5-MGD plant and 13 pump stations)



**Kenneth Henrique**  
Veolia Maintenance  
Manager

- + Massachusetts Grade 7C WW Operator
- + Dedicated Maintenance Manager at New Bedford since 2011
- + 38 years WW experience as Manager and Operator
- + Manager for comparable operations at Fall River, MA (30.9-MGD plant and 17 pump stations) and Woonsocket, RI (16-MGD treatment plant)



**Collis Soares**  
Veolia Lead Chief  
Operator

- + Massachusetts Grade 7C WW Operator
- + Dedicated part of the OM&M team at New Bedford since 2011
- + Worked in progressively responsible roles, starting as an Operator, then Operator II, then Chief Operator and finally Lead Chief Operator



**Robert Arruda**  
Veolia Odor and Noise  
Control Technician

- + Massachusetts Grade 6C WW Operator
- + Dedicated part of the OM&M team at New Bedford since 1993
- + 19 years as Site Safety Officer/21 years as Odor & Noise Control Technician



**Darlene Domingos**  
Veolia Vice President and  
Corporate Operations  
Manager

- + Massachusetts Grade 7C WW Operator
- + Operations VP/Corporate Manager for New Bedford since in 2015
- + 37 years WW O&M experience as Manager and Operator
- + Manager for comparable long-term WW contracts at Brockton and Taunton



**Christian Hoan**  
Veolia Technical  
Manager

- + Corporate Technical Manager – North American Technical Team
- + Based at Veolia’s operations at Naugatuck, CT
- + 14 years with Veolia in North America
- + Key technical resource for New Bedford to support operations improvements and specialty project needs

*Veolia’s Approach Meets and Exceeds City Criteria:*

City Criteria	Veolia Proposal
<b>1. TECHNICAL FEASIBILITY</b>	
<b>Project Implementability</b>	<ul style="list-style-type: none"> <li>• <b>Our Team will hit the ground running.</b> Veolia has the right team already in place (no transition is required.) Pump station alternates well-supported with local expertise.</li> <li>• <b>Solid Compliance History.</b> We have provided legal and regulatory compliance information for our company, all of which underscore our project team’s and firm-wide ability to deliver outstanding performance going forward.</li> <li>• <b>Relationships with Regulators.</b> Through our tenure at New Bedford, and with our projects throughout Massachusetts and New England, we have a strong reputation built on mutual respect with the regulatory community.</li> </ul>
<b>Technical Reliability and Viability</b>	<ul style="list-style-type: none"> <li>• <b>Performance-driven approach.</b> Veolia prides itself on being a performance metrics-driven organization. This culture contributes to our proven track record at New Bedford of meeting the performance requirements outlined in the Draft Agreement.</li> <li>• <b>Stewardship of Your Assets.</b> Each person on our team has a maintenance focus and responsibility. Having all eyes and ears attuned to equipment condition means your assets are well cared for, and meticulous attention to preventive and predictive activities means less money spent on expensive overhauls and repairs.</li> <li>• <b>Reliability means Peace of Mind.</b> Our maintenance approach will be further improved by implementing a formal Reliability Centered Maintenance Program, focusing even more resources on cost effective predictive maintenance of your critical assets to prolong life and ensure reliability.</li> <li>• <b>Customer Service.</b> Personal communication with Town management staff and in-person contact &amp; follow-up with your customers when we respond to and resolve issues.</li> <li>• <b>Coordination with Partners.</b> We consider other stakeholders such as Synagro, CDM, the Buzzards Bay Coalition, and others to be part of the overall “New Bedford Team.” We share information and coordination with them on a regular, and in the case of Synagro, daily basis.</li> <li>• <b>Institutional Knowledge</b> Over many years at the New Bedford plant, Veolia has developed a deep institutional knowledge of how to handle rapid and significant changes in flow due to wet weather. Our team’s built-in know-how means your plant stays in compliance, even when faced with extreme weather events.</li> <li>• <b>Cost Efficient Operations.</b> Our proposed fee reflects savings identified in hypochlorite and bisulfite usage, and reallocation of labor to address buildings &amp; grounds maintenance. In addition, our aeration blower control strategy will deliver energy savings and improved Nitrogen removal.</li> <li>• <b>Technical Experts that Know Your Plant.</b> Veolia’s technical resources, led by Christian Hoan and Kumar Upendrakumar, working with our operations team, the City, and your consultants, have implemented viable nitrogen reduction strategies, based upon a reconfiguration of the aeration process. Your plant’s nitrogen removal process will be enhanced in the most cost-effective way, by optimizing the tools you already have.</li> </ul>
<b>2. ENVIRONMENTAL</b>	
<b>Environmental Footprint</b>	<ul style="list-style-type: none"> <li>• <b>Reducing your Impact</b> – Our approach to Nitrogen Reduction is a win-win for the City and environment – less pollution with minimal additional construction</li> <li>• <b>Nitrogen Reduction Experience</b> – The team we have assembled has successfully implemented four Nitrogen reduction processes in New England over recent years.</li> <li>• <b>Efficient use of Resources</b> – Our Process Control Management Plan, implemented, monitored, and updated by our Technical Experts, ensures efficient use of chemicals and energy consumption.</li> <li>• <b>Innovative and Beneficial Biosolids Disposition</b> – Our proposed approach significantly reduces truck traffic and puts a renewable energy source to work.</li> </ul>

City Criteria	Veolia Proposal
<p><b>Odor and Noise Control</b></p>	<ul style="list-style-type: none"> <li>• <b>Consideration for the Community.</b> Veolia’s approach represents a “zero tolerance” odor and noise control program through:                             <ul style="list-style-type: none"> <li>• Proactive measures, including designation of a full time odor control technician, and taking daily odor measurements at multiple locations.</li> <li>• Engineering controls, such as hydrogen sulfide analyzers with a control loop to deliver ferrous chloride to the plant influent (reduces load on wet scrubber).</li> </ul> </li> <li>• Rapid Response - through an advanced SCADA program monitoring scrubbers 24/7.</li> <li>• A 10-fold reduction in Biosolids Truck Traffic (see discussion on Page 1-2).</li> </ul>
<p><b>Leadership</b></p>	<ul style="list-style-type: none"> <li>• The Veolia New Bedford facility has been recognized for operational excellence on numerous occasions:                             <ul style="list-style-type: none"> <li>• 2010 – Veolia North America Regional OPEX Award for Large Projects</li> <li>• 2007 – Gold Award from NACWA (National Association of Clean Water Agencies). This award is given to facilities that have achieved 100% compliance during the calendar year.</li> <li>• 2005 Peak Performance Silver Award NACWA.</li> <li>• The on-site laboratory has been recognized several times and has received Certificates of Excellence in recognition of quality proficiency testing.</li> </ul> </li> <li>• <b>Health and Safety</b> is a core focus at Veolia, and our industry-leading performance is driven by a strong corporate culture, supported extensively by our regional and corporate management personnel. From our VP’s to our H&amp;S managers at each of our projects, our goal day-in and day-out is that <i>Everyone Goes Home Safe</i>.</li> </ul>

**3. OM&M EXPERIENCE**

<p><b>Highly Advantageous Wastewater Experience</b></p>	<ul style="list-style-type: none"> <li>• 152 wastewater facilities operated in the U.S., including 16 in Massachusetts.</li> <li>• 54 of Veolia’s ongoing wastewater OM&amp;M projects are activated sludge plants with most including secondary or higher treatment levels.</li> <li>• 140 biosolids management facilities including Class A thermal drying plants.</li> </ul>
<p><b>Highly Advantageous Pump Stations Experience</b></p>	<ul style="list-style-type: none"> <li>• Our Lynn and Fall River, Massachusetts, projects demonstrated successful experience in operating and maintaining more than 10 pumping stations each, in systems with significant variations in flow, for over a period of at least five years.</li> <li>• Veolia operates over 1,000 pump stations in the U.S., including 169 in the State of Massachusetts and the majority are sized over 2 MGD.</li> </ul>

**4. PROJECT STAFFING**

<p><b>Project Staffing</b></p>	<ul style="list-style-type: none"> <li>• <b>The Right Number.</b> Veolia has identified a 28-FTE staffing plan, which represents the optimal use of personnel to care for your assets, a level approved by MADEP, and a validated headcount using the New England Interstate Water Pollution Control Commission (NEIWPC) “Staffing Guide.”</li> <li>• <b>Wide Range of Skill Sets.</b> In addition to our on-site staff, we have a well-established, multi-discipline team of trusted vendors and subs to address all skill sets required for full maintenance and installation of equipment.</li> <li>• <b>A Deep Bench.</b> Our cross-trained staff, along with our extensive local Veolia resources (See figure on Page 1-4) means that we have the ability to pool resources to handle any emergency or unanticipated situation.</li> <li>• <b>Highly Credentialed.</b> Our advanced-licensed staff is intimately familiar with your facility. Our value placed on our employees, through our ongoing training and incentive programs, mean that this collective skill set and knowledge base continues to grow and positively impact your operations.</li> </ul>
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**5. BUSINESS ARRANGEMENT**

<p><b>Various</b></p>	<p>Required information provided, and multi-million dollar shared-savings featured.</p>
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02

Technical Proposal



# 2.0

## Technical Proposal

### Introduction

Veolia's Technical Proposal provides a comprehensive approach to meeting and exceeding the City's expectations, as summarized below:



#### 2.A – Company / Team

Continued trusted performance by the incumbent operator and industry leader.



#### 2.B – Facility Operations and Performance Standards

Reliable, uninterrupted, economical operation of facilities in compliance with regulatory requirements as well as proposed biosolids disposition \$26M cost-saving project.



#### 2.C – Staffing Plan

Cross-training program to maintain staff O&M skills as well as knowledge of latest technologies at minimum cost.



#### 2.D – Relevant Project Experience

Unbeatable wastewater contract operations experience in New Bedford and throughout Massachusetts.



#### 2.E – Emergency Operations

Robust contingency planning and rehearsals.

#### 2.F – Environmental Protection and Mitigation

Long-term and short-term planning support, focused capital replacement, maintenance and policy/regulatory issues.

#### 2.G – Process Monitoring, QA/QC Reporting

Best management practices and resources from our proven, reliable services and experienced personnel

#### 2.H – Licenses, Permits and Approvals

Ensuring regulatory requirements continuously met



# 2.A – COMPANY/TEAM INFORMATION

*In this subsection, Veolia provides general information about our company and key personnel as well as a brief history of our firm’s business activities.*

## 2.A.1. VEOLIA COMPANY OVERVIEW

Veolia Water North America – Northeast, LLC (Veolia) is the proposer and incumbent operator for the City of New Bedford’s Wastewater Treatment Facility (WWTF).

Veolia in the Northeast was established as a separate LLC under our parent company, Veolia Water North America Operating Services, LLC, in 2004, and our firm brings more than 36 years of experience in Massachusetts. Though the name has changed over the past 20 years, Veolia is the same organization that has been operating the New Bedford WWTF since 1990.

Veolia companies in North America trace their history to the start of the municipal contract O&M industry in the U.S., with our first such contract with the City of Burlingame, California, under a contract that continues today – over 47 years later.

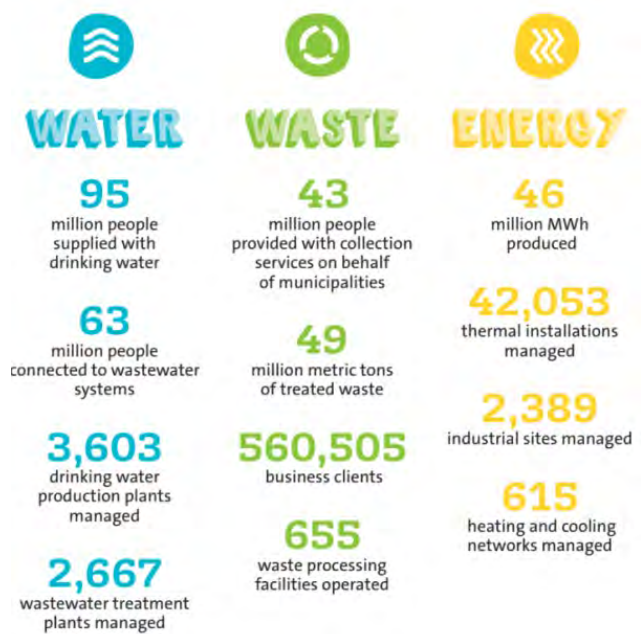
Veolia Water North America Operating Services, LLC is the direct parent company of Veolia in the Northeast, and will be the project Guarantor for this proposed new O&M contract. The company is also an LLC and authorized O&M provider in the state of Massachusetts. Our company is not publicly traded in the U.S. and has no Stockholders.

Today Veolia serves people in more than 615 communities, with operations responsibility for 210 municipal wastewater plants that treat over 1.7 billion gallons of flow each day to meet the



needs of 5.4 million people, along with 89 municipal water treatment plants that supply potable water to over 4.7 million people. In 2017, Veolia's consolidated businesses in the U.S. generated over \$2.6 billion in revenue, and the company had more than \$3.4 billion in assets.

Veolia in North America is also part of a global parent company, Veolia Environnement, S.A., providing services in three core areas: **water**, **waste** and **energy** and recognizing consolidated revenues of over \$30.1 billion in 2018. This global parent company traces its history to 1853 working with governmental and commercial clients, and today provides more than 95 million people with drinking water and more than 63 million people with wastewater service.



Veolia’s financial position is strong and Veolia’s diverse, global operating portfolio provides the financial stability needed to meet the anticipated



requirements under this new long-term O&M agreement.

Veolia's tax identification number: **13-4038062**

Veolia can state that no officer or affiliate of our company and/or our parent company has been barred from bidding, or proposing, on public contracts by the federal government or by any governmental entity in the Commonwealth of Massachusetts or any other state.

We can also affirm that no officer of Veolia and our parent company has been convicted of any criminal conduct or been found in violation of any federal, state or local statute, regulation or court order concerning antitrust, public contracting, employment discrimination or prevailing wages or for any actions associated with such officer's performance or provision of services to a public entity.

Additionally, we can affirm that Veolia maintains a solid financial standard, and that no Veolia company has ever filed for protection under bankruptcy laws.

Veolia is the largest contract O&M provider in the U.S. and the world, and we are capable of taking on the most technically challenging projects, while earning an over 95% contract renewal rate. With such a large contract portfolio and highly technical services, disputes or lawsuits may occasionally arise.

With regard to current and pending litigation, Veolia is a party to various civil disputes or lawsuits brought by, or against, seeking to recover damages under a wide variety of legal circumstances. These lawsuits are of the types that arise during the normal course of business, and Veolia has vigorously defended and denied any liability in the lawsuits initiated against it.

We can also state that there currently exist no claims that, if adversely decided against Veolia, would materially affect the ability of our company to successfully perform the services contemplated under this proposed new O&M agreement with the City of New Bedford.

Specific details regarding pending litigation are considered confidential and proprietary

information of Veolia that are covered by the attorney-client privilege.

Veolia cannot release detailed information regarding its litigation and/or terminated contracts in a document that may be construed to be a public record subject to release to the general public. However, our firm is willing to discuss in confidence any relevant concerns or issues you may have concerning these matters.

## 2.A.2. VEOLIA KEY PERSONNEL

### Principal Contact Person for Purposes of Ongoing Contractual Services

**Darlene Domingos, Vice President**

15 Elkins Street, Boston, MA 02127  
darlene.domingos@veolia.com  
(508) 889-1242

### Organization Chart

Figure 2-1, at the top of the next page, provides Veolia's **28-FTE** Organization Chart.

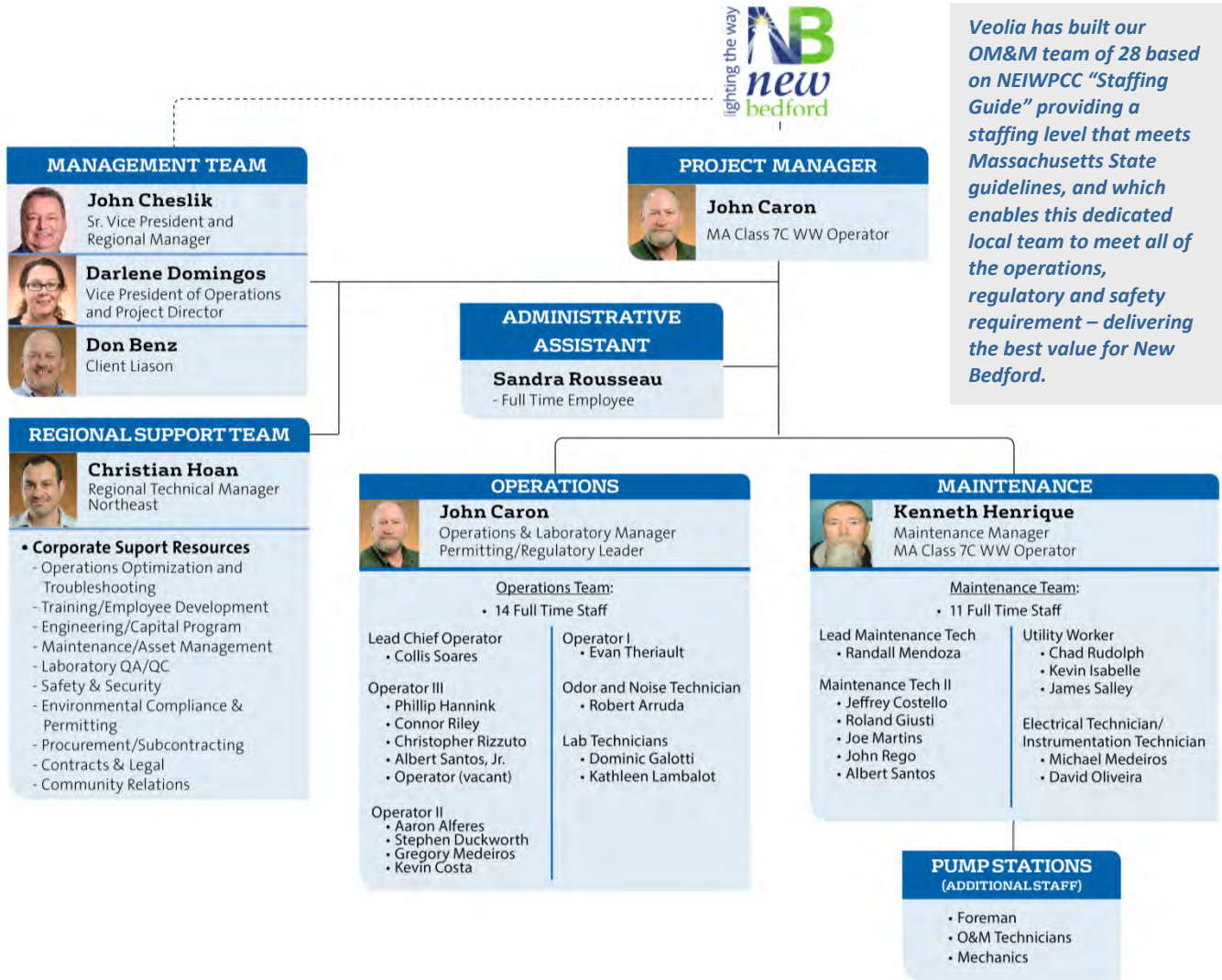
### Veolia's Key Management Team

**John Caron** is a Project Manager III with Veolia Water North America – Northeast, LLC (Veolia) for the ongoing wastewater facilities operations, maintenance and management (O&M) contract with the City of New Bedford, Massachusetts. He has spent his entire over 35-year career working with Veolia (and predecessor companies) involved in the operation and maintenance of wastewater treatment facilities, sewer pump stations and collection systems. Mr. Caron has particular experience with operating and maintaining various process equipment and appurtenances. Mr. Caron meets all the requirements for a "Highly Advantageous" Key Management Team staff:

- He has managed the staff at **New Bedford's** 30-MGD advanced secondary wastewater treatment plant since 2002 (18 years), and served as the Project Manager for other wastewater facilities of similar complexity, including **Seymour, Connecticut** (2.97-MGD secondary activated sludge wastewater treatment plant) and **West Haven, Connecticut** (12.5-MGD Water Pollution Control Facility).



Figure 2-1. New Bedford Organization Chart



*Veolia has built our OM&M team of 28 based on NEIWPC "Staffing Guide" providing a staffing level that meets Massachusetts State guidelines, and which enables this dedicated local team to meet all of the operations, regulatory and safety requirement – delivering the best value for New Bedford.*

- Mr. Caron has managed wastewater operations with treatment plants and multiple pumps stations, including **13 pump stations** at West Haven, Connecticut, and **10 pump stations** at Seymour, Connecticut, and was also the Shift Supervisor at **Fall River, Massachusetts**, where Veolia continues to operate a 30.9-MGD pure oxygen advanced secondary wastewater treatment plant and a system of **17 sewer pump stations**
- His experience at New Bedford has involved managing OM&M and supporting staff for the past 18 years, and he has over **22 continuous years of work as a Project Manager** for

**complex wastewater treatment facilities.**

- Mr. Caron also serves in other Key Staff roles at New Bedford, including the **Operations Manager**, the **Laboratory Manager** and the **Permitting & Regulatory Compliance Lead**.

Mr. Caron holds a Massachusetts, Grade 7 Full Wastewater Treatment Combined Domestic / Industrial Certification license, and is also a licensed wastewater operator in Connecticut (Class IV) and holds Grade IV Collections System Operator certification from the New England Water Environment Association.

**Kenneth Henrique** is Veolia's Maintenance Manager at New Bedford, and has worked in

this role since 2011. In total, he has worked with Veolia for over 28 years, and has a total of over 38 years of experience in the wastewater industry.

Mr. Henrique meets all the requirements for a “Highly Advantageous” Key Management Team staff:

- He managed the maintenance staff and operations at **New Bedford’s** 30-MGD secondary activated sludge wastewater plant for nine years, and prior to that he worked as the Assistant Project Manager and Maintenance Manager for the City of **Woonsocket, Rhode Island’s** 16-MGD tertiary wastewater treatment plant (three years), as well as the Assistant Project Manager for the **City of Fall River, Massachusetts**, 30.9-MGD pure oxygen secondary wastewater plant (three years).
- These operations included responsibility for managing maintenance along with the operations of multiple sewer stations, including **17 pump stations** at Fall River and **7 pump stations** at Woonsocket.
- Ms. Henrique’s experience demonstrates that he meets the standard for managing staff at each comparable wastewater operations for an uninterrupted period of **at least three continuous years**.
- He holds a Massachusetts, Grade 7C (Full) Wastewater Treatment Combined Domestic/Industrial Certification.

See Section 2.C below and Section 6 – Supplemental Information for Veolia’s staff licenses, certifications and registrations.

### Key Personnel Summary Resumes

Veolia will continue to commit a strong local management and technical support group that will continue to provide for on-call backup advice, expertise, quality control, management, maintenance and plant repair assistance to the operational staff and to ensure performance targets are met.

Veolia’s project personnel are led by Veolia-veteran John Caron and his onsite managers who are profiled in Section 2.C. Veolia’s key personnel working out of our company headquarters include our regional management, technical and business teams are under the leadership of our Vice President of Operations, **Darlene Domingos**; Senior Vice President and Principal for the Northeast region, **John Cheslik**; and our Client Liaison, **Don Benz**.

Ms. Domingos has worked with Veolia since 1994, and she is a Massachusetts Grade 7 wastewater operator. Her operations background and experience includes serving as Project Manager for the City of Brockton’s 20.5-MGD tertiary wastewater treatment plant (and three sewer pump stations ranging in size to 31-MGD), as well as the Operations Supervisor and Project Manager for the City of Taunton’s 9-MGD advanced secondary wastewater treatment plant (with 38 pump stations ranging in size to 29.9-MGD).

Ms. Domingos reports to our Regional Senior Vice President, **John Cheslik**, who is responsible for oversight of our team and for ensuring that the operations have the resources needed to be effective. He manages the company’s O&M and related services for municipal and industrial clients in the water and wastewater sectors.

Mr. Cheslik joined Veolia over the past year and now manages the O&M team in the Northeast. He is an experienced corporate manager with over 37 years of industry experience.

Veolia’s regional management team is currently in the process of transitioning the water and wastewater operations at the City of Gardner, and also provided leadership for the transition of the wastewater operations and staff at the Town of Winchendon. They will be engaged over the course of the transition process and then into the long-term operations, and be supported by our regional technical, capital and other resources.

Veolia’s O&M team at the City of New Bedford will continue to be supported by an experienced group of resources from our regional operations in the state of Massachusetts and other parts of the Northeast region, Veolia’s operations and



projects in Massachusetts are supported by a staff base of more than 485, and that number includes more than 265 water and wastewater O&M staff that are engaged in the day-to-day operations of over 20 municipal projects.

In the Northeast region Veolia has a Technical Support Group that focuses on working with local O&M teams to address routine and emergency needs. This corporate level group provides engineering, operations and other technical support to Veolia's projects and operations, and for new project transitions.

Added to that, our North American headquarters office is located in Boston, providing access to a large base of technical, business and other support resources. These are all experts that are engaged in supporting the needs of our projects, and that are supported by Veolia's more than 7,900 staff in North America.

Under this new O&M partnership, Veolia will bring to the City the benefits of our firm's unparalleled technical expertise and resources

as provided by our firm locally and across the globe.

Access to this base of resources is facilitated by **Christian Hoan**, Technical Director and Manager in the Northeast region. He works as part of Veolia's Technical and Performance group, which provides access to an in-house team of technical, business and management experts. This extensive base of resources will allow our firm to develop and deliver customized solutions to meet client needs.

Mr. Hoan is based at Veolia operations in Naugatuck, Connecticut, and he has worked as part of the team in the region since 2006, with specific responsibility for supporting our operations and projects in the state of Massachusetts, as well as Veolia's other projects in the Northeast region. His focus will continue to be on identifying areas needed for support, and then reaching into Veolia's resource base to mobilize Subject Matter Experts with the skill sets and experience needed to deliver the right solutions for the

*Veolia's Staff are well trained to work safely in confined spaces and with dangerous chemicals.*



transition needs, as well as those that will be required for the long-term operations. Mr. Hoan has recently been tasked with providing technical support for the on-going nitrogen treatment pilot project assisted by our corporate process expert **Kumar Udendrakumar, P.E.**

### **Veolia Culture of Promoting from Within**

Several of our Team have benefited from Veolia's culture of promoting from within and supporting career development.

Ms. Domingos started with Veolia as an Industrial Pretreatment Program Coordinator and worked in progressively responsible roles as Operations and Project Manager for large wastewater systems, benefitting from educational, training and licensing support as well as career development opportunities provided by Veolia.

**Collis Soares**, Veolia's Lead Chief Operator also worked in progressively responsible roles, starting as an Operator, then Operator II, then Chief Operator and now Lead Chief Operator. He was also the beneficiary of Veolia training and development programs.

Finally, **Robert Arruda**, Veolia's Odor and Noise Control Technician, has progressed through increasingly responsible roles, supported along the way by Veolia.

### **Subcontracted Work**

Veolia has identified the subcontractors with which we expect to continue working with in delivery of services. Veolia is also open to any City-suggestions for additional partners and vetting of subcontractors.

As the incumbent, over time, we have perfected our sharing of the scope of work and established relationships that are deeply integrated in the local contracting community. The results of this outreach and engagement include a lengthy list of partners including:

- **Painting** – Keltic Painting/John W Egan Co./RJ Forbes
- **Generator Maintenance** – South Shore Generator Co. / R A Mitchell Co. / Kraft Power

- **Asset/Facility Audit** – Wright Pierce Engineers
- **Electric Motors** – Applied Dynamics
- **Electrical Work and Equipment Maintenance, Breakers and Transformers** – High Voltage Maintenance / Utility Services of New England
- **Cement and Masonry Contractor** – Dupre
- **General Contractor** – Hart Engineering/Mac Donald Services
- **SCADA Repair and Maintenance** – CDM / Automatech
- **PLCs** – Spartan Integrated Systems
- **Fire Alarms** – MKM Fire/Advanced Signal
- **Pump and Valve Repair** – New England Pump and Valve / BAU Hopkins
- **Flow Meter Test and Calibration** – Krohne/Northeast Solutions Paul Bellville
- **Plumbing Contractor** – Arden Engineering
- **Overhead Crane and Hoist Inspection and Repair** – American Crane and Hoist
- **Equipment Install Contractor** – Northeast Water
- **AC Contractor** – Design Temperature
- **Boiler Repair and Maintenance** – Lemiux Heating
- **Lab Equipment Repair and Maintenance** – DESCO
- **Machining Services** – BP Machine
- **Garage Door Maintenance and Repair** – Overhead Door of Providence
- **Diving/Underwater Repairs** – Underwater Services



## 2.B – FACILITY OPERATIONS AND PERFORMANCE STANDARDS

*In this subsection, Veolia details our general wastewater facility management philosophy; operations and maintenance plan; replacement and renewal plan; and energy and chemical management plan.*

### 2.B.1. GENERAL WASTEWATER FACILITY MANAGEMENT PHILOSOPHY

Veolia’s general operating plan and approach will maintain a focus on two-way sharing of timely, useful and transparent information; care of your assets to achieve maximum useful life and reliability; and a diligent focus on protecting New Bedford’s waterways and natural resources through superior process performance. In the wastewater industry, in large part, there is no reason for most equipment to wear out. With very few exceptions, wastewater equipment is designed and built to be maintained and rebuilt. Identifying the warning signs of equipment wear and reacting with prophylactic care will not only extend the functional life of the equipment but also improve process consistency. Veolia’s best-in-class asset management practices incorporate the latest techniques in Reliability Centered Maintenance (RCM).

Going well beyond “manufacturer’s recommendations,” a robust RCM approach develops a customized maintenance program for each plant or facility, focused on preserving the reliability of your critical assets, and ensuring all assets meet their desired function and full life-expectancy potential.

### 2.B.2. OPERATIONS AND MAINTENANCE PLAN (O&M PLAN)

#### Wastewater Treatment Plant (Base Bid)

Veolia recognizes that as the contract operator of the WWTF, we are the stewards of the City of New Bedford’s investment. We strive to minimize costs while achieving the objectives of the City. For the past over 20+ years we have accomplished this goal through the culture of constant improvement. Over time, Veolia has implemented many cost saving and operational efficiency measures. These cost-minimization activities were both operational efficiency solutions and asset management.

These innovative solutions and ideas are part of what Veolia and its global technical excellence are able to bring to our clients, and are what set us apart from our competition.

Within this Technical Proposal, we have documented very specific process energy and chemical management improvements, operational strategies and asset management approaches for the managed wastewater assets to achieve an attainable level of reliability and sustainability in the economic objectives of cost minimization, efficiency and revenue generation.

Over the next 20-year contract, Veolia commits to continuing to find ways to minimize costs and improve efficiency, as detailed in Subsection 2.B.4.

Veolia will be responsible for operating, managing and maintaining the Managed Assets pursuant to the requirements in Schedules 1, 2, and 6. This includes providing all staff, chemicals, consumables and select utilities for the Managed Assets. Veolia will also be responsible for grounds maintenance and snow removal at the WWTF.

Within one month of the Contract date, Veolia will provide the City evidence that it complies with all state and federal requirements regarding the licenses and certificates required to operate and maintain New Bedford’s WWTF. Within six months of the Contract Date, Veolia will submit for City review and approval:

- Detailed staffing plan
- Renewal and replacement plan
- Emergency response plan
- High Flow operations plan
- Access to our revised CMMS for the Wastewater Treatment Plant with preventative maintenance plan fully identified and scheduled

**Pumping Stations (Alternates 2 and 3)**

A potential part of the scope for this new OM&M contract with the City of New Bedford will be the transition and the long-term operations and management of wastewater pump stations that are currently operated and maintained by City staff. The City has requested two possible approaches for the transition: the first involving complete OM&M for the City’s 29 wastewater pumping stations to be submitted as **Bid Alternate 2**, and a second approach which would involve operating the City’s 12 largest pump stations, with the City retaining OM&M responsibility for the remaining 17 smaller pump stations submitted as **Bid Alternate 3**.

We have priced both approaches and the City of New Bedford can be assured that Veolia will deliver expert care under either of the OM&M scenarios that you have outlined for this operations. However, we feel that the first approach, OM&M for all of the pump stations will offer the greatest value and benefit to the City under this new contract.

Additionally, Veolia is offering a unique cost savings approach applicable to Bid Alternate 2 discussed later in this offer.

**Veolia’s Pump Station Management Plan**

Achieving quality performance at the City’s Pump stations depends directly on the efficiency and effectiveness of the maintenance program, which focuses on providing uninterrupted equipment performance through professional maintenance and management by skilled employees. In terms of Veolia’s overall plan and approach, maintenance at a minimum will be conducted according to manufacturers’ specifications. If our experience demonstrates that a particular component requires more frequent attention, appropriate scheduling

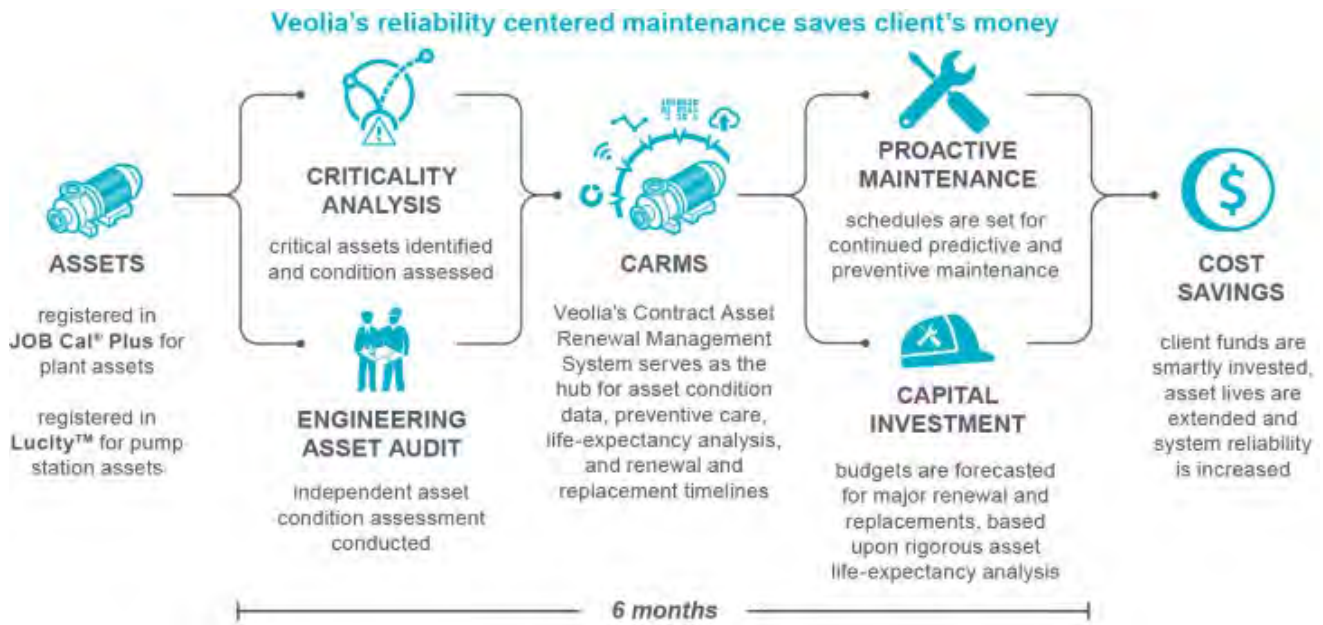


*Sensors installed on 400 HP Blowers at a Veolia project. Repairs are typically \$50,000 or more for just the Blower alone which made the system a value added project. The larger green bulb is the Operator touch sensor system that records date and time the oil cup was checked and the smaller green light is the oil level sensor that detects loss of oil and automatically shuts the Blower down to prevent damage.*

changes will be made to ensure optimum equipment performance.

The foundation of our approach to this effort will be to employ Reliability Centered Maintenance (RCM) Programming shortly following transition. The RCM process will identify predictive and preventive maintenance practices which will ensure that the City is well protected from dry weather sanitary sewer overflows as a result of lift station failures. Furthermore, the RCM program and resulting identified work practices will allow Veolia to “Guarantee” equipment up time thus protecting human health and the environment. Once new work practices are identified, they will be reviewed in parallel with original equipment manufacturers (OEM) specified maintenance tasks, tasks we presume that are currently configured in the City’s **Lucity™** software and at the same time make recommendations to the City on changes.

Additionally, at the time of the RCM process and Lucity CMMS review, Veolia experts will also be working with the independent engineering



consultant on the Facility Audit. We expect the Audit to identify system deficiencies and capital needs due to the aging infrastructure. Part of this review will be to evaluate the functionality of the SCADA remote telemetry units (RTUs) and the cellular RTUs by Mission Inc.

Meanwhile while all the above work is taking place, two Veolia crews will be dispatched daily, 7 days per week to check and maintain the 29 pump stations immediately upon transition. Veolia, like any other O&M firm, will be required to comply with MADEP 314CMR 12 law regarding emergency planning, pump station visits and maintenance practices. MADEP 314CMR 12 requires that any sewage pump station with peak flows in excess of 100,000 gpd will need to be checked daily. We anticipate that daily checks will be initially shared by two (2)-two (2) man crews. Each crew will check lift stations throughout the day and also attend to predictive, preventive and corrective maintenance work. For major pump maintenance work or other work requiring additional support, WWTF staff and/or Veolia local resources may be engaged.

Examples of additional daily activities would include: adjusting wet well operating elevations; wet well cleaning schedules; and adjusting pump run time cycles and instrumentation and control. Through this careful monitoring and information exchange throughout our many operations, Veolia has developed institutional

knowledge and experience specific to pump station OM&M activities that others just can't match. We have done it for longer and more often.

Veolia's OM&M plan will also provide for comprehensive approach for monitoring and reporting on each of the pump station operations, and will include:

- **Pump Station Checklists** – Field and other information provided in the RFP will be gathered during transition phase for the pump station operations and will be used to develop the daily checklists with run time hour information for each pump station. Our checklists will be used over the course of the operations to verify that a qualified professional has performed a check of every component required under the scope of work. Further, these reading sheets will provide records of specific operational parameters throughout the systems. This information from the checklists will be entered into the project CMMS electronically via electronic tablets, allowing our technicians and OM&M staff to plot trends, produce reports and monitor equipment performance.
- **Monthly Summaries** – The values from checklists will be summarized in the



Lucity database for further analysis and reporting.

- Operation Logs – During the course of a day, activities of the OM&M staff will be recorded in dedicated logbooks and/or Lucity. These logbooks are used to record all operational activities, any operational problems, all maintenance activities, any visitors, and any safety or training activities conducted. Veolia's Maintenance Manager will be responsible for reviewing all logbook entries. At a minimum 314CMR12 requires generator logs to be located on site.
- Standard Operating Procedures – At-risk work assignments are documented by written, step-by-step procedures that outline proper handling, safety equipment required and hazards associated with the activity. Veolia's O&M staff undergo annual reviews and training regarding health and safety SOPs. This ensures that a given procedure or practice is performed and documented correctly, regardless of which operations personnel perform it. Veolia's OM&M staff for the Pump Station operations will be responsible for maintaining Station-specific SOPs for these operations. Typical SOPs generated for these sites will include maintenance procedures, emergency generator operations, pump station daily checks, emergency response, chemical delivery, wet well cleaning, LOTO, and permit required confined spaces entry.
- Records and Operational Data Analysis – Veolia operational plans will be supported by data management and analysis tools such as the HACH WIMS software. Field staff will collect data to create reports, produce data trend charts and monitor the usage of consumables at the pump stations facilities.

Sample pump station reports from our operation at Taunton, Massachusetts, are provided in Section 6 – Supplemental Information.

## Emergency Planning and Response

Immediately following transition, while performing daily checks, pump station crews will also gather necessary emergency planning information as follows for each site:

- Pump Station Common Name and Physical address
- Pictures of overall site, pumps, generators and other relevant assets or features
- Electric and gas meter account information and telephone/electrical pole identification where the service drop is located
- Emergency generator information such as size, type, fuel and fuel storage capability
- Locations of Emergency bypass pump connections or portable emergency generator connections and portable cord type and portable generator type.
- Equipment nameplate information as needed such as pump sizes, motor horsepower and baseline amperage/voltage testing results
- Engineers plan views of Pump Station lot, showing key influent and force main connection/valve pit manholes
- Sewer map showing the nearest location where the pump station force main connects to the gravity sewer.
- Estimated flow for station
- Identification of sewer shed and tributary flows for the station

For additional information, please see our site specific Emergency Management Plan is included in Section 6 – Supplemental Information.

## Value Add - Innovation

It is worth noting here that the integration of the High Flow Management Plan (featuring **Ayyeka** technology) with collections system monitoring sensors (sewer level and rain gauge data) is being proposed as a value-add under the Base OM&M approach, and will involve adding three level sensors and three rain gauges to monitor flows in the City's main sewer interceptors. The information from these units will be transmitted to the plant using a cellular network, and will



allow for rainfall and sewer level data collection for refinement of the High Flow Management Plan, a plan used at the Wastewater Facility to manage combined sewer stormwater surges thus protecting the treatment process, human health and equipment. This data and or use of additional sensors to produce similar data will also be important to determine if the collection system is surcharging during periods of dry weather, potentially attributable to lift station or sewer blockages. Integration of these sensors into the Wastewater Plant and/or Pump Station SCADA systems will also be invaluable for ease of access.

The cellular data network will record rain gauge data, send alarms and level data to begin to assist with execution of the High Flow Management Plan. The real value of this system will be in accumulating data to better manage system operations.

#### Additional Resources

Veolia is committed to working with the City to address current and future needs that are part of the collection system, and which impact the operations of the wastewater treatment plant. This will cover the added scope of assuming OM&M for all (or part) of the City's current pump station operations.

A unique additional feature of Veolia resources and expertise in the region are our stand-alone underground asset management (UGAM) teams. One team is located at the City of Taunton – where Veolia has OM&M responsibility for the City's 9-MGD Advanced Secondary Wastewater Treatment Plant, 38 pump stations and a 178 miles Sanitary Collection System. We also have two separate UGAM teams dedicated to the City of Woonsocket, Rhode Island and Lincoln, Rhode Island.

In Woonsocket, Veolia' UGAM team is responsible for performing routine and emergency maintenance on all aspects of the sewer system (siphons, gravity sewer lines and force mains), which includes: inspecting and maintaining manholes; maintaining compliance with the Capacity, Management, Operations & Maintenance (CMOM) management plans that Veolia worked on with the City to establish under

this contract; continuing to work with the City on infiltration and inflow (I/I) control; and performing regular CCTV inspection and line cleaning to meet State of Rhode Island and federal regulatory requirements. At Lincoln our UGAM team manages the OM&M of 32 pump stations, ranging in size and capacities from small submersible 200,000-gpd capacity stations to 2.3-MGD above-ground pump stations.

In the OM&M of pump stations, Veolia will also maintain a commitment to monitoring and reducing electrical consumption at the pump stations. Our conservation recommendations will be part of any capital recommendations we make to the City with regard to the pump stations. Veolia can provide additional expertise and resources through local energy experts that are part of our resource team in the region, and our sister company SourceOne is an approved utility energy savings company (ESCO).

Veolia's established UGAM teams in Massachusetts and Rhode Island support their individual operations and also serve as a regional resource base to support the transition and long-term operations under new contracts – they will form a core part of the transition and support team for the transfer of pump station OM&M responsibility to Veolia.

#### Community Focus

All Veolia field and other project staff in New Bedford will understand that they are responsible to customers and for addressing customer inquiries, both formal and informal. Field staff working at pump stations will be required to wear company uniforms and have identification that shows they represent the company, and to demonstrate this on request to customers when working in streets and other public areas. While working at the pump station sites and traveling throughout the City, Veolia's field teams will represent professionalism with regard to any public complaint or concerned citizen and or community group related to the operations of the OM&M of the facilities.

Promoting good public relations and outreach is at our core. On a regular basis, Veolia provides plant tours for local schools and community environmental groups.

Part of what sets Veolia apart from other service providers is our personal communication with Town management staff and in-person contact and follow-up with City customers when we respond to and resolve issues. We field numerous phone calls from City residents and direct them to the appropriate channels. Generally calls are related to sewer backups, overflowing manholes, trash removal and occasional water/sewer billing inquiries. On occasion, we receive calls from local residents regarding odors. We have a formal procedure to respond to these calls: our “Zero Tolerance Odor Control Plan.” Any received complaint is investigated internally at the plant for source and externally throughout the neighborhood in the affected resident’s area. We take immediate action by reviewing current operation of the scrubbers to ensure optimum performance of the equipment. We follow up directly with the resident by visiting them at their home to ensure complete customer satisfaction

In the case of a sewer backup or overflowing manhole, which we consider an emergency situation, in addition to calling the DPI main dispatch phone number, we also reach out directly, via cell phone, to the DPI Sewer Superintendent, making sure that we contact a person directly, rather than just leaving a message.

We also consider other stakeholders such as Synagro, CDM, the Buzzards Bay Coalition, and others to be part of the overall “New Bedford Community.” We share information and coordination with them on a regular basis. On a daily basis we are in contact with Synagro, the City’s contracted operator to haul and dispose of sludge. We have developed a spreadsheet which provides both a daily update and weekend update, showing our current sludge inventory in total holding tank feet, total number of holding tanks in use, and total number of tanker trucks in inventory. We also provide with this daily report, the process rate, which calculates the daily number of tankers per day we expect to produce. We also provide annual rainfall data to a local environmental group, the Buzzards Bay Coalition and we are currently working with the Coalition to develop a collaborative watershed monitoring project. Additionally, as previously discussed in this proposal, we have been

working with the City’s engineer, CDM, purchasing and installing nutrient monitoring equipment for a Nutrient Reduction Optimization Pilot Study. We have worked hand in hand with CDM to compile, review and analyze the data.

To minimize impacts to neighbors, Veolia will work with the City to maintain public information channels (procedures) to communicate when non-routine work will be performed, such as identifying any impacts that will result in partial street closures and impacts to sewer service, etc. Veolia field crews (or a Veolia-managed field crew) are responsible for ensuring that warning signs are posted, as appropriate, for the area impacted.

Veolia also ensures that all field work is coordinated with the City and local agencies, fire and police, and when needed we secure a police detail to work with our field crews to direct traffic and ensure safety.

### **Asset Management**

Veolia has nationally adopted Reliability Centered Maintenance (RCM) as our maintenance strategy and will bring this approach to New Bedford. RCM approaches are the same practices which keep commercial airlines safe. RCM is used to develop equipment-specific maintenance strategies, or to optimize existing strategies. It ensures that assets, systems, and processes continue to meet desired function to, improve safety, minimize risk of failure, optimize maintenance costs, and most importantly, ensure equipment meets its expected life cycle timeframe.

RCM is a rigorous process that identifies failure modes and their consequences, and helps determine the best tasks to mitigate or eliminate those consequences. The output of a thorough RCM analysis is a robust maintenance strategy that will enable staff to cost effectively maintain asset functions and mitigate risk of failure.

### **RCM at the City’s WWTF**

The RCM process will be employed for the WWTF critical assets during the 6-month period following commencement of the new contract, and updates to our CMMS and the City’s Lucity

software for the pump stations will be made as necessary.

**RCM Process**

The figures and the discussion that follows, outline our RCM process.

*Step 1. Asset Hierarchy*

Veolia will review the existing JOB Cal® Plus CMMS asset hierarchy to make sure processes, systems, and assets are appropriately assigned so that maintenance costs and reliability data roll up correctly, and that cost of ownership and performance can be reported at the desired level.

*Step 2. Criticality Analysis*

A Criticality Analysis will be conducted at the system level to prioritize initial and ongoing maintenance efforts. The Criticality Analysis is both an industry standard, and a Veolia best practice, that is part of our overall RCM approach to asset management. It will assess both probability and consequence of failures of all WWTF systems, and the resulting impacts on employee health and safety, the environment and operations.

*Step 3. RCM Analyses on Critical Systems*

Following this Criticality Analysis, RCM analyses will then be performed on the most critical systems and assets first. RCM will try to identify a suitable predictive maintenance (PdM) task, because they can typically be done with the equipment running, are non-intrusive and

unlikely to induce a failure if not done perfectly.

Some PdM technologies can often be leveraged to provide protection for critical assets and predictive capability to trigger certain maintenance tasks. For example, an accelerometer permanently installed on a bearing can be used to alarm and trip a machine if vibration levels exceed predetermined levels, and can also be used to provide full vibration spectra for detailed analysis. Typically, the overall vibration signal for protection is measured continuously, and the full spectral data is captured periodically.

Equipment criticality determines which maintenance tasks must be performed, and the time between when a potential failure is identified and an actual failure occurs or PF interval, determines how often they should be done. The biggest difference between critical and non-critical equipment is that, for critical equipment, if the consequences of a particular failure mode cannot be mitigated through a suitable maintenance task then something else **MUST** be done – redesign, training, SOPs, etc. This is typically when the protective function of a monitoring technology is added. Conversely, for non-critical equipment, redesign or other measures are not mandatory, and equipment can be allowed to run to fail.

**Preventive & Predictive Maintenance**

Veolia has, and will continue to, employ a comprehensive maintenance platform at New Bedford which includes rigorous Preventive

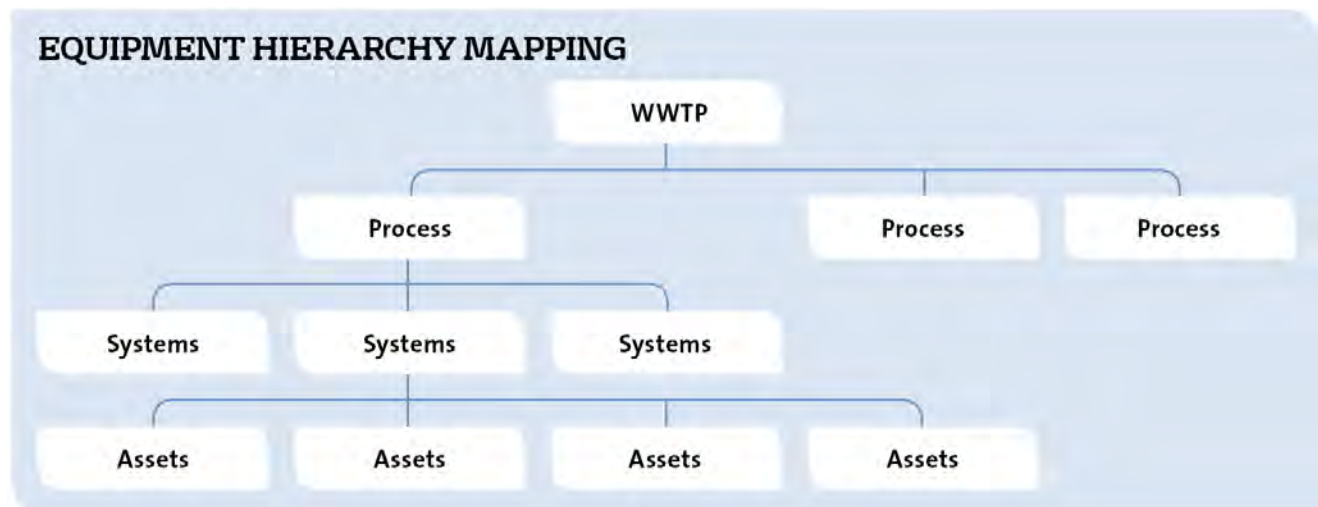
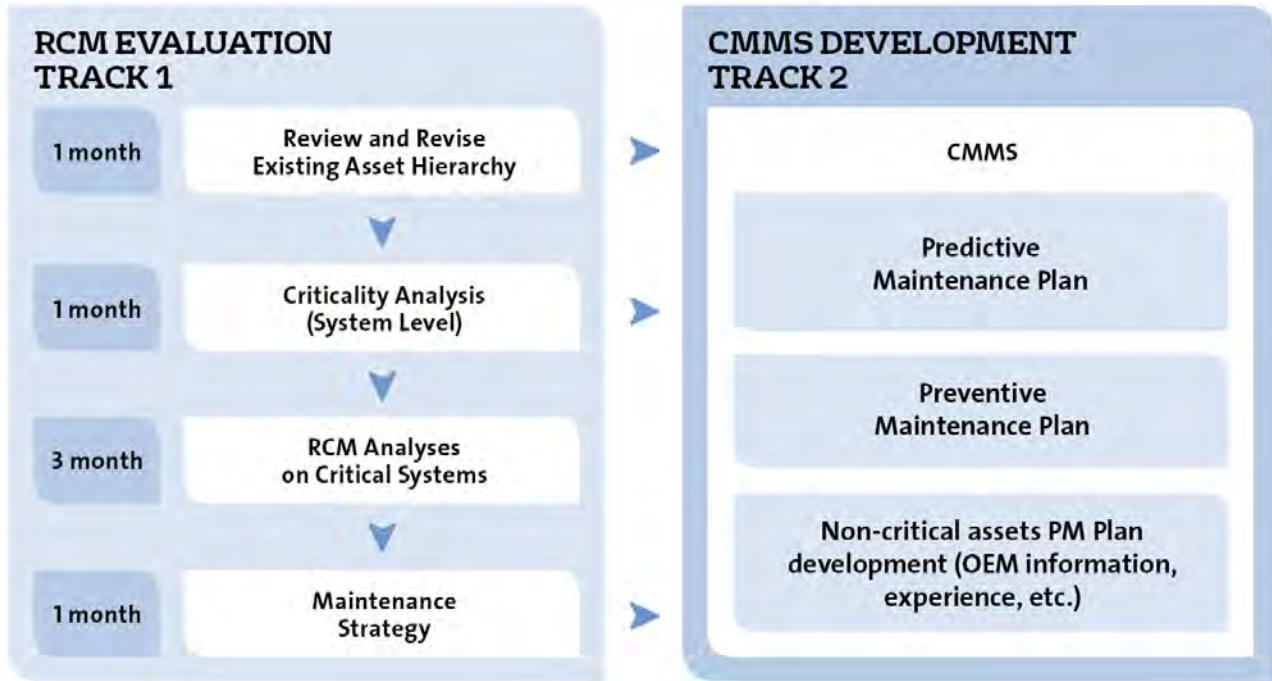


Figure 2-2: Total Maintenance Plan Development



actions in concert with a carefully developed Predictive scope.

Veolia’s Preventive and Predictive Maintenance (PM and PdM) approaches are used to optimize existing maintenance strategies. They work to ensure that assets, systems and processes continue to meet customers’ expectations, improve safety, minimize risk of failure, optimize maintenance costs and most importantly, ensure equipment meets its expected life-cycle timeframe, which for major pieces of wastewater equipment, can easily be expected to range from 20-30 years.

We combine manufacturers’ recommendations and industry best practices to develop preventive, predictive and failure-finding tasks to ensure reliability and longevity of the equipment and grounds. Emphasis is placed on continuous attention to housekeeping to preserve aesthetics and provide a safe working environment. Each of our operation technicians are assigned preventive maintenance tasks on a daily basis, with work orders generated by the CMMS. As each work order is completed, then that information is updated in the CMMS to provide for reliable life-cycle tracking of all OM&M data. From a Health & Safety standpoint, we utilize this maintenance/ asset management approach

to protect these items as well. Additionally, Veolia’s OM&M team will be responsible for checking items such as smoke detectors, lights and fire extinguishers, ladders and safety equipment which is completed monthly.

Annually, we utilize an outside vendor service for testing and verification of our fire extinguishers.

**Predictive Maintenance**

Key tools for extending the life of your critical assets include techniques such as vibration analysis, thermal analysis, oil analysis and, if warranted, ultrasonic analysis on equipment. The best technology, or combination of technologies, for each asset will have been identified through our proposed rigorous RCM analyses. The current status of the equipment in terms of base line information will provide the basis to deliver continued high level of reliability in the operations.

*Vibration Analysis:*

Equipment vibration profiles are maintained in the CMMS enabling a run time-based condition assessment to be completed. This enables a comparative condition assessment tracking of any degradation of operating condition in the





**Proper Accelerometer Installation for Predictive Maintenance Analysis**

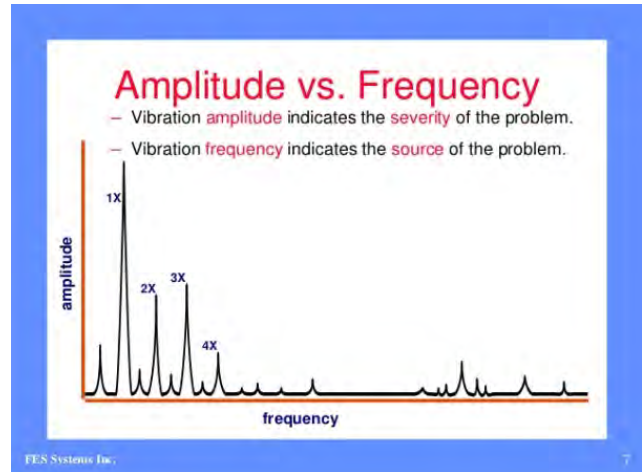
equipment. This activity is generally focused at bearing locations, and with our SCADA we could install WIFI based accelerometer transmitters on key process equipment enabling real time monitoring of conditions.

*Thermal Analysis:*

Utilizing an infrared camera, staff routinely inspect electrical control panels, switchgear and MCC while under load to identify “hot spots.” This is usually indicative of loose connections, failing wiring, overloaded conditions, and results in further evaluation and testing in order to remedy the condition. This helps avoid equipment failures and/or electrical failures with accompanying consequences.

*Oil Analysis:*

Performing oil analysis on key equipment with oil lubricated drives is a means to assess and identify lubricant degradation, contamination and metal surface wear within rotating elements. The program is set up to routinely sample and have lubricants analyzed by an appropriate lab enabling optimization of lubricant change out. This is particularly important with synthetic oil products used in large quantities such as engine generators which provide higher lubricity and longer product life.



*Ultrasonic Analysis:*

In certain situations, Ultrasonic Inspection can provide further insight into unexplained operating conditions in equipment that can't be verified with other testing like vibration analysis. It can be very effective at identifying internal clearance issues, armature failure, bearing degradation at early stages, minor pump cavitation and other conditions which don't exhibit overt signs of failure.

*Electric Motor Condition Monitoring:*

Veolia will continue to test MCC panels for electric motor condition monitoring. The picture on the opposite page shows a test port installed for this purpose.

**Housekeeping Maintenance**

Veolia understands the importance of maintaining a clean and safe environment for our workers, and a core element of our OM&M approach is to provide superior housekeeping. This means that our OM&M team will continue to maintain the facilities in a neat, clean and litter-free condition at all times. Building and grounds maintenance will be managed with the same discipline as the assets of your wastewater plant, with tasks developed, scheduled and completed to ensure the buildings remain functional and are also aesthetically pleasing. Veolia also recognizes that this is important for controlling odors, noise, fugitive dust and any other adverse environmental effects. All plant equipment and structures will be kept clean and orderly. Oil and grease are wiped clean after any maintenance activity.

### Corrective Maintenance (CM)

When corrective actions are identified as necessary to return the asset to proper operating capacity, we review factors such as repairs required, remaining useful life, potential obsolescence of parts, and cost of repair versus replacement, and then we determine a path forward from both an economic and a reliability standpoint. Work plan strategies for repairs ensure that industry best practices are followed and original equipment manufacturer or like-quality parts are used. Corrective work order history is documented in the CMMS to provide an accurate picture of the life-cycle history and cost of each asset.

For CM, standard work plans are developed to guide maintenance staff and ensure that the repair follows the manufacturers' recommended rebuild strategies and lessons learned from previous repairs. The work plan strategies ensure that manufacturers' procedures or industry best practices are followed and original equipment manufacturer or like quality parts are used.

This process for corrective maintenance management will ensure that at the completion of the Agreement term, the Facility will be returned to the City in a sound, proper and well-maintained.

Veolia continues to evaluate equipment applications and where it is appropriate will replace older technology with up to date solutions. An example of this is the installation of dry-pit submersibles to replace traditional centrifugal pumps/motor. The pumps are matched to required capacity, and installations typically include a VFD, and flow meter where needed. This approach also eliminates pump/motor alignment issues, seal water requirements and simplifies installation.

### System Failure and Root Cause Analysis

An essential element to our repair philosophy is the Root Cause Failure Analysis (RCFA) review. This review is executed in order to understand the reason for failure and determine if efforts can be made to further extend the mean time between failures for the asset. Veolia completes a review for all major failures and will incorporate recommendations into the CMMS for

equipment that has experienced failure, to ensure all reasonable measures are taken to prevent future occurrences.

### Asset Inventory / Criticality Assessment

Our best practices evolve from company-wide sharing of asset management information. Veolia uses several tools and techniques for optimizing its asset management programs company-wide, and with a knowledge-sharing network of 421 sites in the U.S. having the primary objective of spreading successes and lessons-learned, our expertise and resources in Asset Management are unequalled. Our network of 421 sites and over 65,000 assets currently managed by Veolia using the JOB Cal<sup>®</sup> Plus package, supports knowledge sharing and best practices which directly enhance asset reliability and longevity. The asset data base includes accompanying maintenance requirements. We will provide City access to the CMMS if desired in a read only capacity.

### Benefits of Veolia's approach

The benefits that clients receive through our comprehensive system include system efficiency and reliability, which is quantified and documented through:

#### Asset Accounting:

Comprehensive asset tracking provides easy organization and descriptive explanations of assets using fields such as a unique asset number identifier, an asset descriptor, service status, system hierarchy coding, asset types, locations, buildings, nameplate data including manufacturer and model number, associated spare parts, photograph of the asset, criticality and condition score. The depreciation section organizes install date, expected life estimate, extent of service life, installed cost, replacement value, overhaul costs and timeframe anticipated between overhauls.

#### Preventive Maintenance (PM) Schedules:

Triggers PM work orders based on user-defined needs, including calendar anniversary and interval, run time interval or accumulated, seasonal adjustments, grouped PMs and asset lists.

### Predictive Maintenance Schedules:

The predictive tasks are developed for each equipment type, depending on duty cycle, load characteristics, and criticality of the unit. These are entered into the CMMS and have separate tracking in the CMMS.

### Warranty Tracking:

System for tracking warranty of each asset with automatic warning flags if a corrective work order is generated in the warranty period ensuring value protection.

### Work Order Management:

Detailed work orders that log issue date, completion date, staff labor hours by individual, spare parts used and cost, direct purchases, service providers and cost, completion comments, and failure coding for root cause analysis management. Detailed work history and cost information (e.g., material versus labor) is presented by asset, system or process and available for budget projections over the history of the assets.

### Scheduling:

This includes a weekly and daily scheduling tool that can be used to organize schedules by crew or outside contractors. Criticality inputs ensure prioritized activities.

### Inventory Management:

Materials tracked by storeroom and bin locations, creating materials requests, performing stock check out and stock issue/return and tracking repairable spares. Parts linked to the asset. Integrated inventory and work management capabilities ensure proper availability and tracking of parts.

### Purchasing Management:

The comprehensive purchasing module associates costs to work orders or assets. The system interfaces to our purchasing software to ensure final complete costs are captured with every purchase. The system defines “direct purchase” catalog items, which enables the user to enter purchasing and accounting details only once for frequently ordered items.

We understand that all CMMS data is the property of the City (Owner) and will ensure that the data remains with the project at the end of the contract.

### Schedule for Shifts and Maintenance, Wastewater Facility

The schedule for shift and preventative and predictive maintenance is provided in Subsection 2.C, which follows.

### Operator Training

Veolia has a robust operator training program, which focuses on safety, operation & maintenance cross-training and upgrading of certifications and licenses. Veolia’s program has resulted in a highly versatile staffing plan which minimizes City costs, while ensuring high quality O&M services are provided over the long-term. Training in 2019 included:

- Environmental health and safety
- Biological nutrient removal process control and troubleshooting
- Basic hydraulics

Each employee participates in monthly safety training in accordance with Veolia’s monthly safety training calendar. These trainings are provided either on-line with **JJ Keller** or conducted by the Site Safety Coordinator and Project Manager as classroom training with training slides and quizzes provided. In addition, in July 2018, the New Bedford facility brought in an outside trainer, Greg Lindsey, from **Burgess and Associates**, to provide a one-day, hands-on confined-space training program due to the number of confined space entries necessary at the New Bedford location. During 2019, operators participated in on-line training from **RoyCEU** to obtain contact hours for renewal of their wastewater operator licenses.

### Alternate 1: Shifting Between Liquid and Dewatered Sludge Hauling

Veolia is proposing the addition of three (3) staff to support the 3-11 and 11-7 shift operations for centrifuge dewatering. Centrifuge operations staffing levels will need to be revisited if Bid Alternates 2 & 3 are not selected by the City due to the fact that the current 3-11pm and 11pm – 7am staff of 3 is slated to be reduced to two staff

per shift with the reassigned staff working the 7am – 3pm to assist with pump stations, grounds keeping and housekeeping to include painting.

### 2.B.3. RENEWAL AND REPLACEMENT PLAN (R&R PLAN)

Veolia affirms that required maintenance will be made to a specified standard (i.e., equipment specifications) and will not be deferred due to cost pressures or other factors. Veolia has compiled a comprehensive Major Repair and Replacement Capital Program that is designed to maximize the asset life, facility performance, environmental compliance, and efficiency of operations. We have reviewed each asset set including Primary and Secondary, Biosolids Processing, and the major electrical systems in the plant to create a plan to design and complete necessary improvements and upgrades.

The primary criteria for designation as a Capital Replacement or Refurbishment are as follows:

1. Action will significantly extend the useful life of the asset equal to “new” condition or nearly so.
2. The asset has reached or is approaching the end of useful life.
3. And/or the asset is demonstrating failure mode conditions beyond any reasonable rehabilitation capability.
4. Or the project resolves performance issues which affect permit compliance, facility performance, or process efficiency.

Veolia added to its price proposal a value of \$500,000 dedicated to routine repair and replacements, renewal and replacement of equipment and other Wastewater Facility components not constituting Capital Expenditure (which amount may be adjusted annually in accordance with the methodology set forth in Schedule 5), during such Billing Year (or a prorated portion of said amount if such Billing Year has less than twelve full calendar months).

For Alternate 2 and 3, the City has included amounts for Pumping Station R&R of \$200,000 and \$100,000, respectively.

Veolia understands that the forgoing cost and expenses will be subject to Cost Substantiation and will not include the cost of any Veolia or Veolia-affiliated labor. At the expiration of the operating period, the Wastewater Facility will be returned to City sound, proper and well-maintained.

We anticipate bundling projects together to provide for maximum efficiency in contracting. Other project sets may need to be completed sequentially. Veolia will evaluate the full project set and determine where doing equipment pre-purchase will help control cost, and schedule of the execution while assuring quality in the finished project. This would include long lead items as well as large lots of common project elements. This process can be accomplished in a competitive means, securing bids as may be required to assure cost effectiveness and eliminating unnecessary mark-up.

### City Capital Planning

Veolia is proposing to develop a Capital Improvement Plan (CIP) schedule, using our **Contract Asset Renewal Management System (CARMS)** model for the City, detailing a potential funding schedule to complete these projects. For additional detail on CARMS see Subsection 2.F, that follows.

### 2.B.4. ENERGY AND CHEMICAL MANAGEMENT PLAN (ECM PLAN)

Veolia intends to implement cost-effective measures with respect to energy and chemical consumption throughout the Wastewater Facility, including odor control and sludge thickening/dewatering for the Wastewater Facility. Veolia’s Process Control Management plan will be expanded to track energy, chemicals and biosolids production.

For energy tracking, daily kWh will be entered into the database to be compared with flow, rainfall, solids retention time as examples.

Chemical usage for disinfection will be tracked per MGD, BOD and TSS of flow and pre-treatment chemicals and measurements for odor control will be tracked per influent hydrogen sulfide concentrations.



Lastly polymer used for biosolids production will be tracked and trended against feed solids %total solids, final disposition % total solids, DT produced per day and influent BOD and TSS loadings.

**Biosolids Cost-Saving Solution**

As featured in the Cover Letter and Executive Summary, Veolia would like to discuss with the City, an opportunity by the City to achieve the following annualized and total operating term cost savings via a new Class A biosolids program, using Veolia’s proven in-direct heat drying / thermal ERS technologies:

- **Projected Annual Savings: \$1.46M/yr**
- **Projected Total Savings: \$40.5+M**

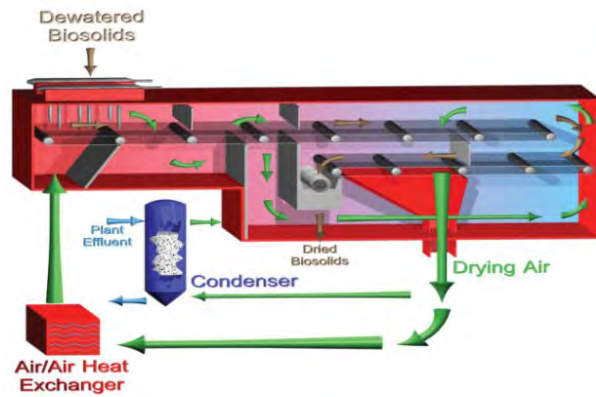
Including costs to install the equipment, project has potential project term (20-year) life-cycle savings of **more than \$26 million dollars** (on a Net Present Value basis). This biosolids solution would be a tremendous value to the City both in terms of energy and chemical management, but also environmental stewardship.

As such, Veolia advocates an upgraded long-term biosolids management and disposition strategy which has the potential to significantly reduce the energy and the fuels consumption involved with the current (baseline) method of haul away of thickened biosolids via a third-party contractor (Synagro) to out-of-state incineration.

Veolia has performed an alternative biosolids haul away and final disposition analysis, with the technical results highlighted below in Table 2-1.

Veolia proposes a biosolids mass and volume reduction approach via use of the centrifuges to produce cake solids for on-site processing in a new thermal drying facility to produce Class A solids, which could be beneficially used as an optimal fuel via an energy recovery system to yield an inert ash material for landfill disposal.

As indicated, substantial reduction (e.g., **66%**) in haul away loads of biosolids could be achieved by implementing a thermal drying solution via Veolia’s in-direct heat (**BioCon™**) belt drying technology, as to be located in available areas at the “re-purposed” Solids Handling Building.



The proposed dual train thermal drying system would include the following new equipment:

- One (60 cy) or two (30 cy) cake bins
- Two (5,500 lb/hr) BioCon™ Belt dryers
- Two (5.0 MMBtu/hr) thermal oil heaters
- Two (1,500 cfm) foul air condensers
- Ancillary pumps, piping & conveyors

As will be further detailed in Section 3.D on Cost Incentive Savings Program, the implementation of an on-site thermal drying program to produce a dried solids for beneficial use(s) will achieve significant (nearly 50%) life-cycle cost savings. Veolia has prepared an indicative cost proforma (20-year life cycle) as derived from Capex/Opex models to offer a favorable economic outlook.

A key upside potential in the implementation of an on-site thermal drying solution would be the upfront add-on or phased implementation of an energy recovery system which would beneficially utilize the dry solids as “autogenous” fuel in an enclosed grate furnace unit to thermally reduce the solids into inert ash via energy autonomy.

Veolia’s “**Energy Recovery System**” (ERS) is an established and add-on technology to each proposed **BioCon™ belt drying** train that would further reduce the overall mass and volume of biosolids to be hauled away for final disposition.

As shown in Table 2-1, the ultimate reduction in the average weekly level of hauling could be **more than 90%** by eliminating the 56 loads of thickened biosolids being hauled out-of-state, and reduce the hauling to only 4 loads per week of inert solids (as dry ash) to the City’s landfill.

Table 2-1. Energy and Chemicals (Fuels) Management via an Upgraded Biosolids Disposal Program

PARAMETER	THICKENED (Baseline)	CAKE (Centrifuge)	DRY GRANULES (Belt Drying)	DRY ASH (Add ERS)
Biosolids Dry Mass, DTPY	7,025	7,025	7,025	7,025
Haul Solids Content, %TS	7.0	23.0	92.0	99.5
Haul Solids Mass, Ton/Day	275	78	18	4.5
Hauling Rate, Loads/Week	56	25	19	4

Veolia proposes a dual train **BioCon™ belt drying** system, in which one single unit would typically be in service to handle the daily average load of 19-dry tons per day of dewatered cake solids at 25.5 %Total Solids, as produced by continuous operations of one single Humboldt centrifuge.

As indicated in Table 2-1, the conversion from thickened biosolids to dewatered cake solids via routine operations of the refurbished centrifuges, would materially decrease the haul-away via the third-party contractor by more than half (~55%). The upgrade processing wet cake solids into dry solids would further decrease hauling by ~66%.

As further detailed online at Veolia’s website <https://www.veoliawatertechnologies.com> the **BioCon™ belt drying** and **ERS** drying system is energy efficient via using in-direct heating from recirculating hot oil that warms the drying air to approximately 350°F to convert raw cake solids into Class A material at a target 92 %Dry Solids with no issues of fire, dust explosion, foul air emissions/nuisance odor.

The **BioCon™ belt drying** cabinet and internal components (the two belts, etc.) are made of stainless steel to substantially mitigate corrosion over time. The fully enclosed units operate under a slight negative air pressure to prevent any fugitive emissions of process odors with a small exhaust flow (~1,200 cfm per dryer unit) that is treated in a vertical condenser/scrubber.

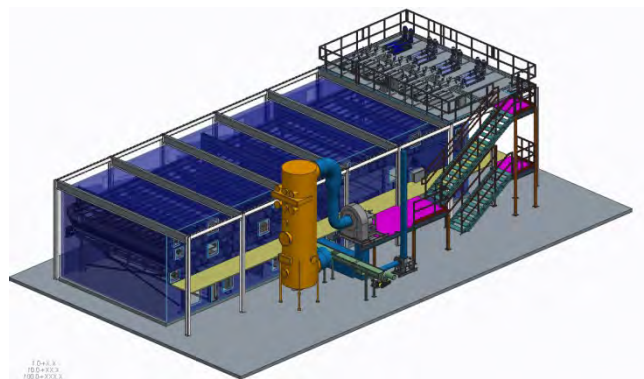
The **BioCon™ belt drying** systems are modular units in ranges of processing sizes that can handle up to 20-DTPD of dewatered biosolids. As indicated by the following illustration, they are horizontally space efficient units that can often be located inside existing processing buildings.

Veolia’s sister technology company, **Veolia Water Technologies (VWT) – Kruger, Inc.** in

Cary, North Carolina makes available its robust and proven belt drying and ERS technologies, as the only demonstrated thermal drying and solids reduction system for small to medium size WWTPs that general raw (undigested) biosolids.

In fact, VWT-Kruger has 29 **BioCon™ belt drying** units in operations across the globe, including 8 trains in the United States and another 3 on the way within the next two years. Veolia and VWT are working on the progressive Design-Build-Operate (pDBO) delivery of two **BioCon™ belt drying** trains (20-DTPD capacity each) for the Downriver Utility Wastewater Authority (DUWA) in south Detroit area at the DWWTf, which also produces centrifuge dewatered (raw) biosolids.

Veolia’s **BioCon™ belt drying** system is the only in-direct heat drying technology that has proven to successfully handle high volatile solids (%VS) and fiber content in raw/undigested cake solids. VWT-Kruger has 11 **BioCon** dryer units that are processing raw/undigested sludge and includes 7 in the U.S. and another 2 for DUWA.



The **BioCon™ belt drying** systems also provide a foundational solids processing unit to address potential future disposal regulations. VWT-Kruger would provide an extended process guarantee of 24 months after commissioning for testing validation and sustainable performance.

**Other Energy and Chemical Actions**

In addition to Veolia’s biosolids, Veolia is proposing expanded energy and chemical management as part of the already adopted Process Control Management Plan (PCMP) used for ensuring NPDES permit compliance. Instead of tracking unit-process variables such as air flow, clarifier solids loadings and surface overflow rates for example. Our PCMP program will be expanded to include the consumables of interest to the City such as electrical consumption (kWh), biosolids disposal information (% total solids of biosolids disposed, total dry tons, polymer used and polymer per dry ton of biosolids produced) and chemicals used. For chemical tracking, usage will be continually tracked as is the current practice as well as targets established with high and low alarm ranges such as gallons of sodium hypochlorite per million gallons treated.



Veolia has also proposed potential 20-year savings of **\$729,000** due to revisions to Schwing pump discharge (Bid Alternate 1) as well as possible energy savings for installation of aeration controls of **\$376,000**. This assumes 5% savings over 2018-2019 aeration blower kWh usage (5% of 3.3 MWh.)



**Downriver Utility Wastewater Authority**

Recently, DUWA unanimously selected Veolia’s **BioCon™** belt drying technology and our client is currently concluding selection of the progressive design-build (pDB) entity that will work with Veolia in delivery of the new biosolids solution. The budgetary financed capital cost for the pDB phase approximates \$21 million.

DUWA’s cost savings (indicative proforma) on a Net Present Value basis will be \$1.2M per year. Veolia will be guaranteeing the long-term success of the new biosolids solution, which is scheduled for full operations and cost savings by the end of 2021.



*Part of the reason Veolia was selected was due to our extensive experience operating thermal dryers across the U.S. Additionally, the Veolia BioCon™ belt drying technology has proved its reliability as a solution that is perfect for processing sludge similar to that produced by the City of New Bedford.*



# 2.C – STAFFING PLAN

*In this subsection, Veolia details our onsite staffing including licenses and certifications that are included.*

## 2.C.1. STAFFING FOR BASE BID

Veolia’s proposed 28-FTE Staffing Plan provides for all of the operations, maintenance, management, administrative and support staff positions required for the New Bedford WWTF. We recognize that the long-term success of this O&M partnership will be in continuing a solid team in charge of the current facilities and operations, and keeping Veolia’s proven operations and management tools.

In 2018, we utilized the New England Interstate Water Pollution Control Commission (NEIWPCC) “Staffing Guide” to confirm 28-FTE staff. Following the analysis and through attrition, the original staffing level of 30-FTE was reduced to 28 FTE and the regulatory submitted plan is for 28 FTE.

We believe that 28 FTEs are critical to the safe and efficient operation of the New Bedford WWTF. This is due to the large number of

confined space entries that are required on a regular basis since all tanks are covered tanks. All confined space entries require a 3 person team. One person is the authorized attendant and the other 2 people are the authorized entrants. It is important to note that two of the 28 are MA-licensed electricians. This allows us to conduct electrical troubleshooting, complete all repairs, including wiring shorts and running conduit (important to nutrient pilot study), installing replacement equipment such as actuators and motors, and in particular responding to emergency work in a timely manner with a crew that is intimately familiar with the equipment. Also, we will soon be participating in the City approved Load Shed Plan, an incentive program that will provide an electric rebate to the City. In addition due to the size of the facility (30 acres) and the requirement for all landscaping, including snow removal, we believe that a staff of 28 is the appropriate level to keep all equipment operating at peak performance and the grounds and buildings safe and aesthetically pleasing.

Table 2-3 below provides summary resumes for the key staff of our onsite project team as well as providing information regarding any relevant licenses and certifications held by the onsite project team members. Veolia’s Team has **seven** Grade 7, **five** Grade 6 and **three** Grade 4 Massachusetts Certified Wastewater Operators. Veolia commits to continuing to cross-train and finance training for individuals to obtain certifications and training necessary to advance their careers recognizing that it is in the best interests of the City of New Bedford.

Table 2-2. Veolia Team – New Bedford Key Staff Resume Summary Table

Name/Title	Job & Project Responsibilities	Experience/Education/Licenses/Certifications
<b>Darlene Domingos</b> <i>Project Director/                      Vice President of Operations</i>	<ul style="list-style-type: none"> <li>• Reports to Veolia’s Principal-in-Charge for Northeast region operations</li> <li>• Oversees Veolia’s operations and projects in Massachusetts, including the New Bedford O&amp;M partnership</li> <li>• Supervisor/corporate manager for Veolia’s O&amp;M team at New Bedford</li> <li>• Responsible for project performance and compliance</li> <li>• Ensures commitment of</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 1994 and became the Operations Vice President in 2015, with responsibility for the New Bedford O&amp;M partnership</li> <li>• 32 years of overall water and wastewater O&amp;M experience, and former Veolia Project Manager for wastewater operations at Brockton and Taunton</li> <li>• <u>Education/Training:</u> Veolia and other Operations, Safety and Management training courses; Pipeline Assessment Training and Certification, National Association of Sewer Services Companies (NASSCO) training; BS,</li> </ul>



Table 2-2. Veolia Team – New Bedford Key Staff Resume Summary Table

Name/Title	Job & Project Responsibilities	Experience/Education/Licenses/Certifications
	<p>resources to projects/operations</p> <ul style="list-style-type: none"> <li>• Key point of contact/accountability for the City of New Bedford under this long-term O&amp;M partnership</li> </ul>	<p>Biology, University of Massachusetts</p> <ul style="list-style-type: none"> <li>• <u>Licenses/Certifications</u>: Massachusetts, Grade 7, Wastewater Treatment Operator and Grade 2 (OIT) Water Treatment Operator; Grade 4 Collection System Operator, New England Water Environment Association</li> </ul>
<p><b>John Caron</b>  <i>Project Manager</i>  <i>(with additional responsibility as</i>  <b>Operations/</b>  <b>Laboratory</b>  <b>Manager and</b>  <b>Permitting &amp;</b>  <b>Regulatory Leader)</b></p>	<ul style="list-style-type: none"> <li>• Reports to Veolia’s Project Director</li> <li>• Manages the operations and teams, for the wastewater operations</li> <li>• Responsible for overseeing operations, employees, budget (O&amp;M and LIMIT) for the wastewater facilities operations and maintenance.</li> <li>• Serves as the direct point of contact for City of New Bedford’s managers and other project stakeholders</li> <li>• Ensures safety and compliance in all aspects of the operations</li> <li>• Procures and recommends capital projects with City approval.</li> <li>• Manages Operations Team, including Operators, Laboratory</li> <li>• Technicians and Odor and Noise Technician</li> <li>• Manages permitting support and regulatory compliance for wastewater operations: NPDES, Tier II, Source Registration.</li> </ul>	<ul style="list-style-type: none"> <li>• Project Manager at the New Bedford 30-MGD wastewater plant since 2002 -- operations recognized with awards including National Association of Clean Water Agencies Peak Performance Award (Gold) for operations/regulatory compliance</li> <li>• 35 years of overall wastewater operations experience, all working with Veolia at wastewater plants in New England, with qualifying experience including New Bedford and Fall River, MA (30.9-MGD treatment plant and 17 pump stations) and West Haven, CT (12.5-MGD wastewater plant and 13 pump stations)</li> <li>• <u>Education/Training</u>: Veolia and other training course in Safety, O&amp;M practices, Project Management and Business Practices; BS degree in Marine Biology, University of Massachusetts; and Massachusetts Department of Environmental Protection approved training in Basic Hydraulics and BNR Process Control and Troubleshooting</li> <li>• <u>Licenses/Certifications</u>: Massachusetts, Grade 7C (Full) Wastewater Treatment Combined Domestic/Industrial Operator Certification; Connecticut Class IV Wastewater Treatment; New England Water Environment Association Grade IV Collections System Operator Certification</li> </ul>
<p><b>Kenneth Henrique</b>  <i>Maintenance</i>  <b>Manager</b></p>	<ul style="list-style-type: none"> <li>• Reports to Veolia’s Project Manager at New Bedford</li> <li>• Manages Maintenance Team, including Veolia staff, regional and corporate support staff, as well as any the work of any contractors retained for maintenance and repair tasks at the wastewater plant</li> <li>• Oversees maintenance operations, budget, schedule and employees for the wastewater facilities/operations</li> <li>• Serves as key contact for the City of New Bedford’s managers on capital and maintenance work</li> </ul>	<ul style="list-style-type: none"> <li>• Worked with Veolia for over 28 years and has worked at part of the O&amp;M team at New Bedford since 2011 managing the maintenance team</li> <li>• 38 years of overall wastewater work experience, with qualifying experience including New Bedford (30-MGD treatment plant) and Fall River, MA (30.9-MGD treatment plant and 17 pump stations), and Woonsocket, RI (16-MGD treatment plant)</li> <li>• <u>Education/Training</u>: Safety, Maintenance, Management and other related training with Veolia; and other education and training, including AEGIS shaft bearing voltage training, Confined Space Entry</li> <li>• <u>Licenses/Certifications</u>: Massachusetts, Grade 7C (Full) Wastewater Treatment</li> </ul>

Table 2-2. Veolia Team – New Bedford Key Staff Resume Summary Table

Name/Title	Job & Project Responsibilities	Experience/Education/Licenses/Certifications
		<p>Combined Domestic/Industrial Operator Certification; Rhode Island Grade 4 Wastewater Treatment Operator; New England Water Environment Association Grade IV Collections System Operator Certification; and NASSCO PACP (Pipeline Assessment) and MACP (Manhole Assessment) Certification, Confined Space Entry Certification</p>
<p><b>Collis Soares</b> <i>Lead Chief Operator/ Operator III</i></p>	<ul style="list-style-type: none"> <li>• Reports to Project Manager and provides leadership for the day-to-day operations of wastewater plant</li> <li>• Supervises the work of Operators (Operators III, II and I) and Laboratory Technicians</li> <li>• Schedules operations tasks such as includes tank cleaning and inspections, equipment isolation and shut down for maintenance</li> <li>• Responsible for reporting and other communications/operations tasks</li> <li>• Maintains/inspects/calibrates process monitoring equipment, including g chlorine meter, bisulfite meter and turbidity meter</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 2011 and has worked at the New Bedford 30-MGD wastewater operations for nine years in progressively responsible roles -- starting as an Operator, then Operator II, the Chief Operator, and then Lead Chief Operator</li> <li>• <u>Education/Training</u>: Veolia safety, operations and management training; Massachusetts Department of Environmental Protection approved training in Basic Hydraulics and BNR Process Control &amp; Troubleshooting; and Sacramento Water and Wastewater operations courses</li> <li>• <u>License/Certification</u>: Massachusetts, Grade 7C (Full) Wastewater Treatment Operator</li> </ul>
<p><b>Robert Arruda</b> <i>Odor &amp; Noise Technician and Site Safety Officer</i></p>	<ul style="list-style-type: none"> <li>• Reports to Project Manager, with responsibility for directing the odor and noise control programs and operations at the wastewater plant</li> <li>• Monitors and maintains operations of odor and noise control systems</li> <li>• Tracks, investigates and reports on odor and noise complaints supporting the zero tolerance program to odors</li> <li>• Coordinates safety training and compliance activities</li> <li>• Reports independently to Veolia's Corporate Safety Manager and Project Manager on safety issues</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 1993 and has worked at the New Bedford wastewater operations since then; part of the original operations team at startup of the upgraded plant, which was placed in service August 1996</li> <li>• 27 years of overall wastewater O&amp;M experience at New Bedford, including 19 years as Site Safety Officer, and 21 years as on-site Odor and Noise Control Technician</li> <li>• <u>Education/Training</u>: Veolia training courses in safety, operations and business standards; Massachusetts Department of Environmental Protection approved training in Basic Hydraulics and BNR Process Control &amp; Troubleshooting; and New Bedford Vocational Tech courses.</li> <li>• <u>License/Certification</u>: Massachusetts, Grade 6C Wastewater Treatment Operator</li> </ul>

**Schedule for Shifts and Maintenance, Wastewater Facility**

The schedule for shift and preventative and predictive maintenance is shown below in Table

2-3. Shifts are labeled 1, 2 or 3. The 1 Shift is from 11PM to 7AM, the 2 Shift is from 7AM to 3PM and the 3 Shift is from 3PM to 11PM. Some staff are assigned to swing shifts.

**Table 2-3. Shift Schedule**

	Sun	Mon	Tues	Wed	Thu	Fri	Sat
<b>11PM - 7AM (1)</b>							
Chief Operator 1	1	1	1	1	1	OFF	OFF
Operator 1	1	1	1	1	1	OFF	OFF
<b>7AM - 3PM (2)</b>							
Project Manager	OFF	2	2	2	2	2	OFF
MAINT Manager	OFF	2	2	2	2	2	OFF
ADMIN Assistant	OFF	2	2	2	2	2	OFF
Lab Tech 1	OFF	OFF	2	2	2	2	2
Lab Tech 2	2	2	2	2	2	OFF	OFF
Lead Chief Operator	OFF	2	2	2	2	2	OFF
Chief Operator 2	OFF	OFF	2	2	2	2	2
Operator 2	OFF	OFF	2	2	2	2	2
Chief Operator 3	2	2	2	2	2	OFF	OFF
Operator 3	2	2	2	2	2	OFF	OFF
MAINT TECH III	OFF	2	2	2	2	2	OFF
Maint Tech II (1)	OFF	2	2	2	2	2	OFF
Maint Tech II (2)	OFF	2	2	2	2	2	OFF
Maint Tech II (3)	OFF	2	2	2	2	2	OFF
Maint Tech II (4)	OFF	2	2	2	2	2	OFF
Maint Tech II (5)	OFF	2	2	2	2	2	OFF
Electrician (1)	OFF	2	2	2	2	2	OFF
Electrician (2)	OFF	2	2	2	2	2	OFF
ODOR Noise technician/safety	OFF	2	2	2	2	2	OFF
Utility 1	OFF	2	2	2	2	2	OFF
Utility 2	2	2	2	2	2	OFF	OFF
Utility 3	OFF	OFF	2	2	2	2	2
<b>3PM-11PM (3)</b>							
Chief Operator 4	OFF	OFF	3	3	3	3	3
Operator 4	OFF	OFF	3	3	3	3	3
<b>SWING</b>							
Chief Operator 5	3	3	3	OFF	OFF	1	1
Operator 5	3	3	3	OFF	OFF	1	1

**2.C.2. STAFFING FOR ALTERNATES**

Veolia has provided staff shift schedules for Alternate 2 (O&M of all 29 Pump Stations) as well as Alternate 3 (O&M of 12 Major Pump Stations).

For Alternate 1, Veolia currently envisions that the 2-person shifts can pick up the operation of

the centrifuge under the short-term alternate cake disposal period (28 days).

Veolia has set labor rates for pump station alternate work at the current Veolia-CBA rates which are higher than City/AFSME rates.

We anticipate that on-boarded City employees will join the union at the WWTF. Otherwise we will work with Veolia’s Recruiter to immediately

begin advertising for qualified staff and if necessary will utilize a temp staffing agency for backfilling prolonged vacancies. Our proposed

staffing level for Alternate 2 is set at 5 FTE while Alternate 3 is set at 2 FTE. Any openings will be covered by wastewater utility workers.

**Table 2-4. 5-FTE Shift Schedule for Alternate 2**

(7am to 3pm daily)	Sun	Mon	Tues	Wed	Thu	Fri	Sat
Foreman	OFF	2	2	2	2	2	OFF
<b>Crew 1</b>							
O&M Tech 1	2	2	2	2	2	OFF	OFF
Mechanic 1	2	2	2	2	2	OFF	OFF
<b>Crew 2</b>							
O&M Tech 1	OFF	OFF	2	2	2	2	2
Mechanic 1	OFF	OFF	2	2	2	2	2

**Table 2-5. 2-FTE Shift Schedule for Alternate 3**

(7am to 3pm daily)	Sun	Mon	Tues	Wed	Thu	Fri	Sat
<b>Crew 1</b>							
O&M Tech 1	2	2	2	2	2	OFF	OFF
Mechanic 1	OFF	OFF	2	2	2	2	2

**2.C.3. TECHNICAL SUPPORT**

Veolia will continue to bring the benefits of our firm’s unparalleled technical expertise and resources as provided by our firm locally and across the globe.

Access to this base of resources is facilitated by **Christian Hoan**, Technical Director and Manager in the Northeast region. He works as part of Veolia’s Technical and Performance group, which provides access to an in-house team of technical, business and management experts. Mr. Hoan is based at Veolia operations in Naugatuck, Connecticut, and he has worked as part of the team in the region since 2006, with specific responsibility for supporting our operations and projects in the state of Massachusetts, as well as Veolia’s other projects in in the Northeast region.

Mr. Hoan will mobilize Subject Matter Experts with the skill sets and experience needed to help deliver the right solutions for improving energy and chemical efficiency, treatment optimizations, as well as those that will be required for the long-term operations.

Other members of Veolia’s team in the Northeast who will continue to support the project include:

- **Mike McLain, Veolia’s Health & Safety Manager in the Northeast**, will provide oversight and management of safety, regulatory compliance and staff training for O&M and related projects and operations in the region. As the project continues, Mr. McLain will provide oversight/audits of safety at the operations, and also provide ongoing training for the O&M staff to ensure they stay current on operations standards and regulatory requirements.
- **Hans Tuneblom, P.E., Veolia’s Vice President for capital programs in the Northeast**, will be able to work with the City of New Bedford in areas such as capital planning. He has over 20 years of experience in the engineering and construction industry, including involvement with design, construction and operation of water, wastewater and related systems. Mr. Tuneblom manages Veolia’s CPM group in the Northeast, which is composed of senior-



level engineering design and construction professionals who provide engineering, design and construction support services for the implementation and management of upgrades, improvements and other capital project work at Veolia-operated and managed facilities.

For additional detail, Section 6 – Supplemental Information includes resumes for Veolia’s Key Management Team and supporting resources.

**Veolia Global Centers of Excellence**

In addition to our regional and national resources in North America, Veolia offers a group of pooled resources, our Global “Centers of Excellence”. This is a team of technical management and other resources that work to find solutions to challenges that our clients face in the operations and management of water, wastewater and related operations.

Veolia’s Global Centers of Excellence offer a worldwide pool of expertise to deliver to our local clients the best technical solutions bringing together three important pillars of operational excellence:

**PILLAR #1: PEOPLE**

A Center of Excellence is primarily a concentration of 10-20 people around the world with exceptional know-how around a common

topic, including a coordinator and a secretary. Because in large companies, it is difficult to share know-how, the centers of excellence have been created to exchange information by people identified at any level of the hierarchy. These individuals are generally ahead of others (best in class operators) and they are a source of know-how and inspiration for others.

**PILLAR #2: A SHARED GLOBAL TECHNICAL DATABASE**

The key mission of our Global Centers of Excellence is to ensure that Veolia’s best practices and know-how are able to be accessed internally, and organized in a structured way that can be shared across the organization. This is why each Center of Excellence has the important task to develop Performance Standards for each of its key activities.

**PILLAR #3: ACCESS TO 24/7 TECHNICAL SUPPORT**

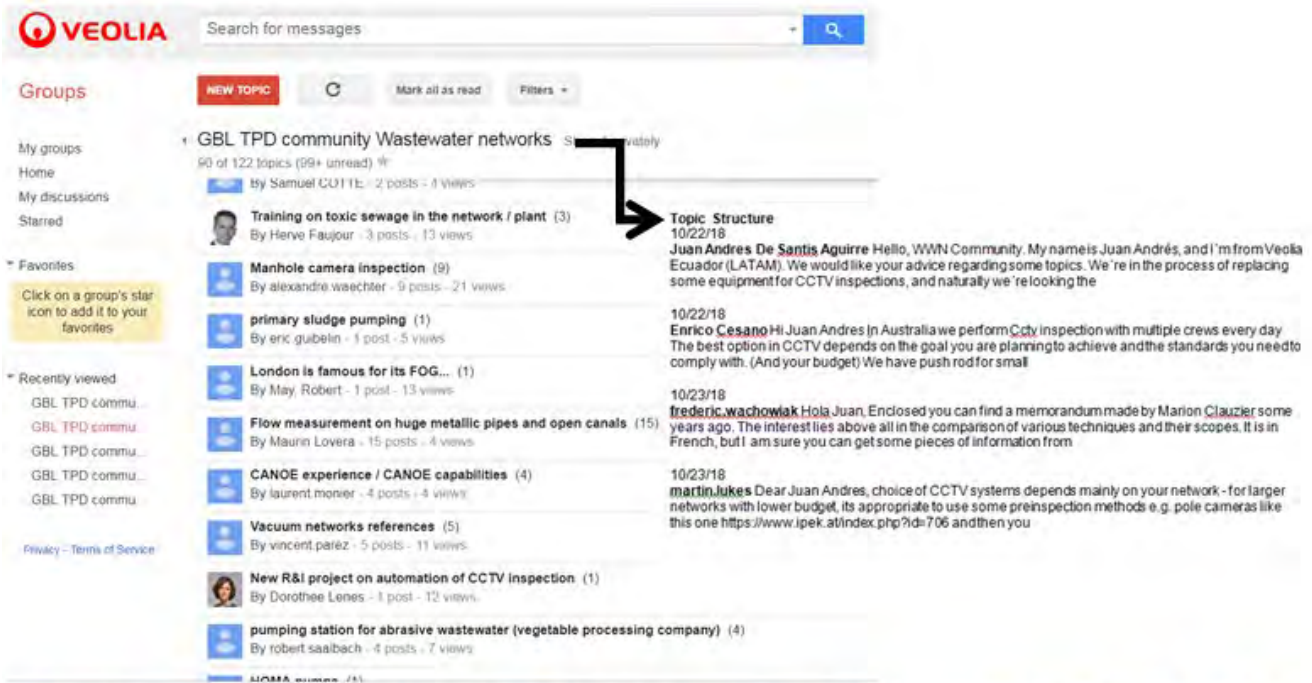
This support is from peers working in the same business activity across the globe. This is facilitated via an internal portal with specific technical forums. Any question posted at the site reaches peers, who can then respond with their personal experiences, or refer the question onwards.

One of the key tools offered within this portal are the Community Forums. These work effectively

The infographic features three main pillars:

- People:** Group of 8-12 experts. From all parts of the business (operations, support functions, R&D) meeting every 6-8 weeks.
- Global technical database and portal:** With a compilation of standards/best practices/benchmarks/training documents.
- 24/7 Worldwide hotline:** To post questions and be helped by peers to resolve technical problems.

At the bottom, a banner reads: **Continuous focus on operational excellence**



*As evidence of our constant knowledge sharing across our Global Centers of Excellence, above is an example of an email forum topic that obtains daily input from people with shared expertise around the globe.*

as specialist technical desks available 24-hours-a-day, 7-days-a-week.

In summary, Veolia’s Global Centers of Excellence network represents a key competitive differentiator for any client working with us since it guarantees to them that they have access through their local project team to a worldwide pool of expertise. One of the key objectives behind this significant mobilization of people and resources is our customers’ satisfaction and retention by providing the best possible technical solutions.

By having this network of operations and other experts from our regional and corporate groups, Veolia’s O&M team at the City of New Bedford will be able to effectively address the routine and emergency needs of this project using in-house resources.

This is a key benefit that Veolia will bring to this new O&M partnership and reflects our company’s vision to deliver technical solutions - that fit the local context - that can be inspired from other examples around the world.

*Veolia’s Global Centers of Excellence connect the project to a worldwide pool of expertise.*





### Veolia's Approach to Intern (Apprenticeship) Program for the City of New Bedford

Veolia understands the challenge that the City of New Bedford faces in terms of employment and training opportunities for the youth in your community. We understand that as an industry, water and wastewater need to attract new talent. To fulfill both needs, we are proposing for this new (renewal) contract to commit to an annual half-year internship (apprenticeship) program in the City of New Bedford.

Veolia is now working with the **City of New London** under a contract that began in 2008 (and now extends through 2033), and under this agreement our company has focused on mentoring and training.

This has involved providing opportunities for 31 interns over the last 11 years, with 19 of these individuals having completed training under this program. Some 17 of these intern program graduates at New London are now current employees, with four of these currently serving as managers at our operations in New London and two at other Veolia O&M projects in the State of Connecticut.

Veolia has also implemented a unique scholarship program at New London, designating \$5,000 to well-deserving high school seniors interested in the environment. Veolia is also engaged in local learning institutions, using this New London infrastructure as a classroom for local middle school, high school and colleges to learn about their natural resources.

Working off of the successful model in New London, a Northeast regional internship program was developed and deployed by Veolia in early 2019. Under this expanded program two local facilities, the Brockton wastewater operations (where Veolia has responsibility for the City's 20.49-MGD tertiary wastewater plant and three sewer pump stations ranging in size to 31-MGD) and the Gloucester wastewater operations (where Veolia has OM&M responsibility for 5.15-MGD wastewater plant and 29 sewer pump stations), were selected to host interns.

Veolia's Brockton operation had previously hosted high school interns from Bristol Plymouth Vocational Technical School. This new program



is targeted to recent community college graduates.

Working directly with our New London OM&M Project Manager, Peter Vetter, each of the two host projects developed a site-specific training template. The template that was used at the Brockton plant included:

#### Week 1 - Introduction:

- Onboarding Logistics (Completion of the I-9 Form, registering for Direct Deposit, site Parking and what to wear, as part of an orientation process.)
- Introductions to Veolia's Local OM&M team at Brockton
- Safety Training (Confined space permit, the use of personal protective equipment [PPE], Electrical Safety, and other relevant safety topics for the operations.)
- Site and Operations specific orientation, covering basic wastewater treatment process, the plant layout, and other procedures and work processes specific to the operations at Brockton.
- Defining education and training goals, including determining which wastewater

classes are available and signing up for at least two courses.

- Completing the first set of assigned readings, Chapters 1 and 2, Operation of Wastewater Treatment Plants from the Sacramento Training Manual (Volume 1), with these readings discussed with Project Manager at the Brockton project at scheduled Friday afternoon meetings during weeks 1 and 2.

#### Weeks 2-5 - Learning to be a Wet Side Operator:

- Interns are provided with the opportunity to brainstorm and identify a special project that they can accomplish to benefit the plant.
- Learning about the role that Pump Stations play in the collection system.
- Learning the Plant Rounds process.
- Learning about the Log Book Entry process, i.e., the importance, the frequencies, etc.
- Learning how to write a work order.
- Learning how to take chemical deliveries.
- Learning about the process testing process (Blankets, Settle-O-Meters, percent Total Solids, etc.)
- Training on the plant layout and operations.
- Learning the Data Entry process.
- Meeting with Brockton Wastewater OM&M Project Manager to discuss a special project.
- Completing the second set of assigned readings, Chapters 3, 5, 8 and 10, Operation of Wastewater Treatment Plants from the Sacramento Training Manual (Volume 1), with these readings discussed with Project Manager at the Brockton project at scheduled Friday

afternoon meetings during weeks 2 through 5.

#### Weeks 6-7 - Learning to be a Solids Building Operator:

- Learning how to start-up and shut-down the centrifuge units.
- Learning about the polymer system, and why polymer is used as part of the treatment process.
- Learning how to operate the gravity belt thickener unit.
- Learning about the use of the recirculation blower and recirculation pumps.
- Completing the third set of assigned readings, Chapters 12 and 13, Operation of Wastewater Treatment Plants from the Sacramento Training Manual (Volume 2), with these readings discussed with Project Manager at the Brockton project at scheduled Friday afternoon meetings during weeks 6 and 7.

#### Weeks 7-9 - Learning to be a Wastewater Laboratory Technician:

- Shadowing Laboratory staff and practicing laboratory tests processes.
- Learning how to use the Chain-of-Custody forms.
- Learning the Laboratory data entry process.
- Completing the fourth set of assigned readings, Chapter 16, Operation of Wastewater Treatment Plants from the Sacramento Training Manual (Volume 2), with these readings discussed with Project Manager at the Brockton project at scheduled Friday afternoon meetings during weeks 7 through 9.

#### Weeks 10-12 - Learning to be a Wastewater Mechanic:

- Shadowing the Plant Mechanic, and learning about basic mechanical duties.



- Learning the difference between Preventative and Corrective Maintenance.
- Learning about equipment lubrication and why it is an important part of the maintenance process.
- Visiting Pump Stations that are part of the Brockton system.
- Learning the process for “de-ragging” a pump unit.
- Learning how to rebuild pumps, which involves gaining an understanding of how each part works, why the pump is being rebuilt.
- Taking part in a Lock-out/Tag-out exercise.
- Completing the fifth set of assigned readings, Chapter 15, Operation of Wastewater Treatment Plants from the Sacramento Training Manual (Volume 1), with these readings discussed with Project Manager at the Brockton project at scheduled Friday afternoon meetings during weeks 10 through 12.
- Conducting a Monthly Inspection and developing the report required for this process.
- Performing an exercise to locate all 181 fire extinguishers that are housed at the Brockton plant.
- Locating all of the emergency eyewash stations at the Brockton plant.
- Completing the sixth set of assigned readings, Chapter 14, Operation of Wastewater Treatment Plants from the Sacramento Training Manual (Volume 1), with these readings discussed with Project Manager at the Brockton project at scheduled Friday afternoon meetings during weeks 15 and 16.

#### Week 17-18 - Learning to be a Wastewater Administrative Assistant:

- Learning about the roles and responsibilities of the Administrative Assistant at the wastewater plant.
- Learning how the process for creating a purchase order, receiving a purchase order, getting an invoice number and verifying a payment.
- Completing the seventh set of assigned readings, Chapter 20, Operation of Wastewater Treatment Plants from the Sacramento Training Manual (Volume 2), with these readings discussed with Project Manager at the Brockton project at scheduled Friday afternoon meetings during weeks 17 and 18.

#### Week 13-14 - Learning to be a Wastewater Electrician:

- Working as Electrician Apprentice and assisting Electricians in completing projects.
- Learning the basic principles of the electrical system.
- Learning the basic principles of the SCADA system and how the plant’s communications systems work.

#### Week 15-16 - Learning to be a Wastewater Site Safety Coordinator:

- Learning about and gaining an understanding of the Safety Culture at the Brockton operations, as well as within Veolia.
- Reviewing Safety Programs in use at the Brockton operations.

#### Week 19-20 - Learning to be a Wastewater Project Manager:

- Learning about the financial tracking and reporting process.
- Learning the process for submitting a Network Discharge Monitoring Report (NetDMR)
- Learning the project/site tour process by giving the Project Manager a tour of the Brockton wastewater facility.

- Visiting other Veolia wastewater operations in the area, including those at the City of Taunton and the Town of Westborough.
- Learning about Massachusetts State reporting requirements, i.e., why they are important, how often reporting is done, and how to handle discrepancies.

#### Week 21-22 - Record Keeping:

- Working with the Administrative Assistant, Maintenance Department and Project Manager to understand the recordkeeping requirements for the operation. This includes discussing how the recordkeeping process is organized and the role that each person and department plays in this process at Brockton wastewater operations.
- Learning the process for presenting findings from the special project report process.
- Completing the eight set of assigned readings, Chapter 19, Operation of Wastewater Treatment Plants from the Sacramento Training Manual (Volume 2), with these readings discussed with Project Manager at the Brockton project at scheduled Friday afternoon meetings during weeks 21 and 22.

#### Weeks 23-24 – Completion of Internship Program:

- Take the wastewater examination.
- Meet with the Veolia Project Manager to review possible open positions at the plant or sites within proximity.

The Gloucester project followed a similar syllabus and incorporated both the water plant and wastewater plant into the program. During the 24-week program, the Gloucester intern took drinking water treatment classes and earned his Massachusetts Grade 2T OIT drinking water license, and the intern at the Brockton wastewater project earned his Massachusetts Grade 5 wastewater operator license.

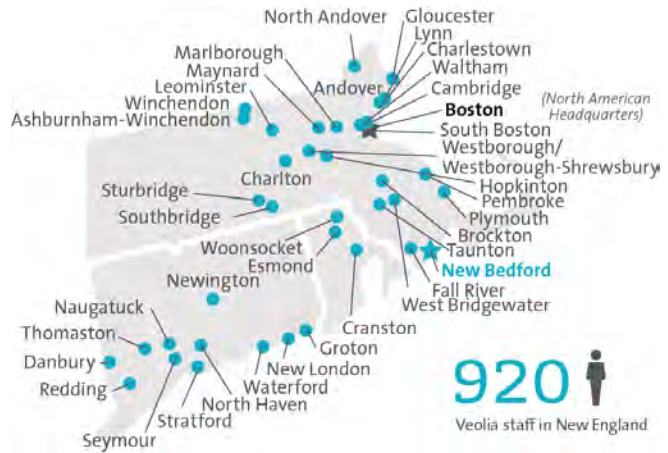
At the end of the program, the Brockton intern was hired as a wastewater operator at our Westborough wastewater operations project and the Gloucester intern was hired by Veolia for our Leominster, Massachusetts, water and wastewater operations project.

Using this already established template, Veolia would develop site-specific training tasks for the New Bedford intern. Under this approach we would propose to work with Bristol Community College, Massasoit Community College and Cape Cod Community College in identifying qualified candidates.

This internship/apprentice program at New Bedford is part of a Veolia corporate initiative.

Finally, the intent of this program is to benefit both the City of New Bedford and the water/wastewater field by training local students for wastewater operations careers.

# 2.D – RELEVANT PROJECT EXPERIENCE



*In this subsection, Veolia provides detailed information describing five reference wastewater projects that are similar in nature to the Services to be provided or that best demonstrates the Proposers ability to provide the Services the City is requesting. Veolia has also provided a list of all projects of similar size, complexity and effluent water quality standards, with which the Proposer has been involved as an operator.*

## 2.D.1. PROJECT EXPERIENCE

Veolia is the leading OM&M service provider in the U.S. and North America, with more operations than any of our competitors. Added to that our firm has a renewal rate of better than 95%, a testament to our client’s confidence in the level of service and commitment that our firm brings – as demonstrated in our 29 years of work as the operations partner to the City of New Bedford for your wastewater plant.

The range of experience that our firm offers demonstrates how Veolia meets and exceeds the “Highly Advantageous” standard that the City of New Bedford has established for this new partnership, which represents a renewal of our long-term work with your community.

This qualifying experience includes:

- Veolia’s U.S. experience includes operating and maintaining at 29 secondary activated sludge wastewater treatment plants, with six of these long term operations of comparable size and complexity generating both liquid and dewatered sludge consistent with this scope of services. This includes our

current work with the City of New Bedford for your 30-MGD secondary activated sludge plant, and other similar projects including:

- 150-MGD Advanced Secondary Wastewater Plant under a contract with the newly formed Downriver Utility Wastewater Authority (DUWA), Michigan. The DUWA systems ranks as the second largest wastewater system in the State of Michigan, serving a population base of more than 350,000 in a service area composed of 13 member communities. The wastewater plant treatment process consists of influent pumping, preliminary treatment, primary treatment, secondary treatment (high-purity oxygen activated sludge with secondary settling), and UV disinfection. Chemical addition is used to facilitate phosphorus removal, and biosolids generated are dewatered at the plant and transported off-site for disposal. Treated effluent is discharged to the Trenton Channel of the Detroit River. The system also includes a 15 million gallon wet weather storage tunnel that is used to retain excess wet weather flows during rain events.
- 330-MGD Jones Island Wastewater Treatment Plant is the oldest operating activated sludge plant in the U.S. Under a 20 year agreement with the Milwaukee Metropolitan Sewerage District (MMSD), Wisconsin, that began in 2008, Veolia provides O&M of the Jones Island and

companion 300-MGD South Shore wastewater plant, which has processes similar to Jones Island Wastewater treatment at Jones Island consists of preliminary/primary treatment, secondary treatment, phosphorus removal, disinfection and dechlorination. Solids removed from the primary clarifiers are pumped to the South Shore plant for anaerobic digestion and then returned to Jones Island for use in the production of Milorganite, an organic fertilizer.

- Further, through our 29 years of work with the City of New Bedford, Veolia has demonstrated experience in meeting the NPDES permit standards for facilities having nitrogen removal of at least 20 mg/L for BOD, TSS discharge limits. Additionally, Veolia has operated comparable wastewater operations in Massachusetts and the New England region that achieve stringent BOD and TSS standards.
- Veolia also has demonstrated experience in operating and maintaining municipal wastewater treatment systems with multiple pumping stations. In Massachusetts our qualifying operations, with OM&M responsibility for multiple sewer pump stations including stations with capacities exceeding 2-MGD, includes:
  - 17 sewer pump stations at the City of Fall River, with stations ranging in size to 54-MGD. Under this long term OM&M partnership that began in 1994, Veolia operates the City’s 30.9-MGD secondary wastewater treatment plant.
  - 13 sewer pump stations at the City of Lynn, with these stations ranging in size to 90-MGD. Under this long-term OM&M agreement that began in 1985, Veolia operates a 25.8-MGD pure oxygen activated sludge wastewater treatment plant.

Nationally, Veolia operates more than 1,000 sewer pump stations, many of which meet and exceed this standard. This qualifying experience

**VEOLIA** OM&M QUALIFYING EXPERIENCE



	16	Wastewater facilities in Massachusetts
	152	Wastewater facilities in the U.S.
	54	Activated sludge plants – most are secondary or better plants
	169	Sewer pump stations in Massachusetts
	1,000+	Sewer pump stations in the U.S.
	2 MGD+	Majority of stations are 2 MGD and larger

includes the 19 pump stations under the MMSD contract, Wisconsin, which has stations that range in size to 69-MGD.

In the Proposal Qualifications Form provided in Section 5 (Proposal Forms) we document the United States Wastewater Plant Experience of our firm, including wastewater operations in Massachusetts – with OM&M partnership that range in size from the 30-MGD wastewater plant operated for the City of New Bedford to our newest project with the City of Gardner for the OM&M of their 5-MGD wastewater plant. These provide representative related experience taken from the 16 wastewater plants that our firm operates in Massachusetts.

We also document the qualifying experience of our company in other parts of the U.S., which range in size from the large secondary activated sludge plants we operate for MMSD in Wisconsin (330-MGD) and DUWA, Michigan (150-MGD) to the 10-MGD secondary activated sludge plant that we operate. The projects/operations included are representative of the over 150 wastewater plants that Veolia operates and manages throughout the U.S.

From this extensive base of experience we have selected the five reference projects that are profiled in the summary tables that follow, and the more extensive project profiles that are provided in Section 6, Supplemental Information. These projects serve to demonstrate the extensive related experience that Veolia offers in



providing similar OM&M services. This starts with our 29 years of experience as the OM&M provider to the City of New Bedford for the exact facilities that will be covered under this new (renewal) contract. The operations that we profile are wastewater projects of comparable complexity with similar unit processes, air handling systems, computer control, automation, SCADA systems, and odor control equipment, and facilities of equal size and complexity. This

experience also includes wastewater projects that are subject to substantial flow variation due to wet weather events, and operations with multiple pumping stations (at least 10) in systems with significant variations in flow. Finally, all of the reference projects that are profiled have been in place for more than five years, and represent operations that were transitioned directly from municipal clients or other operators working for municipal clients.

### #1 – City of New Bedford, Massachusetts

<b>Location/Owner:</b>	City of New Bedford, Massachusetts
<b>Applicability/Relevance:</b>	Exact wastewater facilities that will be covered under this new OM&M contract.
<b>Treatment System &amp; Processes:</b>	30-MGD (75-MGD peak) Secondary Activated Sludge Plant with extensive Odor and Noise Control, meeting NPDES permit standard for nitrogen removal of 20 mg/L for BOD and TSS discharge limits, with disposal of 6,500 dry tons per year of biosolids.
<b>Capital Program:</b>	<ul style="list-style-type: none"> <li>• Veolia has performed more than \$2.5 million in capital repairs and upgrades</li> <li>• Veolia also assisted the City during the construction phase of its new facility, which upgraded the plant to secondary treatment and went online in August 1996. Facility compliance improved dramatically under Veolia’s operation, and we achieved continuous compliance with stipulations of a federal consent decree that superseded the existing NPDES permit to discharge. The City discovered after a year that Veolia’s operations were netting annual savings of over \$0.5 million. In 2015, cumulative cost savings from all areas exceeded \$28.5 million. We also reduced historically high fecal coliform counts, which had been one obstacle to allowing the City to open shellfish beds that had been closed for over 20 years.</li> <li>• Veolia was responsible for decommissioning the City’s old plant, which was demolished by the City to create more parks and open space.</li> <li>• Other capital work completed by Veolia has involved fabricating and installing catwalks to the primary scrubber vessels, increasing accessibility for maintenance and decreasing down time.</li> </ul>
<b>Expenses budget:</b>	\$4.4 million annual O&M fee; the contract has an OM&M and Limit Budget (repair and maintenance), with amount included as part of the OM&M fee.
<b>History of operations:</b>	Contract OM&M agreement with multiple renewals: 1990 (7 years agreement); 1998 (10 year renewal); 2008 (5 year renewal); 2012 (early 5 year renewal to 2018); 2018 (1 year renewal) and 2019 (1 year renewal through June 2020).
<b>Key project contact:</b>	Mr. John Caron, Veolia Project Manager - Veolia Water North America – Northeast, LLC - 1000 South Rodney French Boulevard, New Bedford, MA 02744 Telephone: 508/991-6164 – Email: john.caron@veolia.com
<b>Key client reference contact:</b>	Mr. Jamie Ponte, Commissioner, City of New Bedford, Department of Public Infrastructure, 1105 Shawmut Avenue, New Bedford, MA 02745 Telephone: 508/979-1550 – Email: jamie.ponte@newbedford-ma.gov
<b>Key personnel involved:</b>	This project is managed by a Veolia’s dedicated local OM&M team working under the leadership of our Project Manager, John Caron, as shown on <a href="#">Figure 2-1 (project organization chart)</a> , and supported by Veolia’s regional management team, including our Operations Manager, Darlene Domingos.

<b>Odor control facilities:</b>	That New Bedford plant site includes a 47-acre park and historic American Civil War-era military fort. Veolia’s operation of the wastewater plant is required to meet strict regulatory requirements for discharges into the bay, as well as for odor and noise control, given the proximity to the park area. There are three separate odor control systems at this site – including separate odor control facilities/ systems at the wastewater treatment plant and the sludge processing facilities.
<b>Computer systems operated:</b>	As discussed in the Technical Approach portions of this Proposal, Veolia has established operations and management tools, including CMMS and other control systems that ensure ongoing compliance and best practices in our operations.
<b>Duration of contract:</b>	29 years (ongoing since 1990)
<b>5-year Compliance History:</b>	<ul style="list-style-type: none"> <li>• No safety violations over the past 20 years of operations.</li> <li>• No regulatory Notice of Violations in the new plant’s operation in its history, no preventable permit excursions in the plant’s history.</li> <li>• Project has been recognized with multiple awards, including: Outstanding Achievement Award from the U.S. Conference of Mayors; Peak Performance Awards from the National Association of Clean Water Agencies, Gold Award in 2007 and Silver Award in 2005; and Laboratory Excellence Award from the Massachusetts Department of Environmental Protection in 1993.</li> </ul>

## #2 – City of Fall River, Massachusetts

<b>Location/Owner:</b>	City of Fall River, Massachusetts
<b>Applicability/ Relevance:</b>	Large wastewater treatment plant similar to New Bedford, with regulatory and operations requirements similar to New Bedford.
<b>Treatment System &amp; Processes:</b>	<ul style="list-style-type: none"> <li>• 30.9-MGD Pure Oxygen Secondary Wastewater Treatment Plant (which meets a BOD and TSS levels similar to New Bedford) serving residents in four communities and several outlying residential developments and businesses. In addition to the treatment facility, Veolia is responsible for processing and disposal.</li> <li>• 17 sewer pump stations that range in size from 0.04-MGD to 54-MGD.</li> </ul>
<b>Capital Program:</b>	<ul style="list-style-type: none"> <li>• Under this contract the City performs all capital work for single item spend on projects of over \$50,000.</li> <li>• Under this approach, Veolia provides recommendations annually with respect to capital replacement and improvement needs.</li> </ul>
<b>Expenses budget:</b>	\$6.7 million (annual O&M fee, which include the repair and replacement budget)
<b>History of operations:</b>	<ul style="list-style-type: none"> <li>• OM&amp;M contract began in 1994, and has multiple renewals with the current contract term for 10 years (with completion of the current contract scheduled for 2024).</li> <li>• Scope expansions increased Veolia’s collection system responsibilities, and a scope change was negotiated to expand the agreement to incorporate management of the City’s stormwater (MS4) program.</li> </ul>
<b>Key project contact:</b>	Mr. Jaysen Wetherbee, Veolia Project Manager - Fall River Wastewater Treatment Plant, 1979 Bay Street, Fall River, MA 02724 Telephone: 508/672-4530 - Email: jaysen.wetherbee@veolia.com
<b>Key client reference contact:</b>	Mr. Paul Ferland, Administrator of Community Utilities, City of Fall River, One Government Center, Fall River, MA 02722 Telephone: 508/989-6332 - Email: pferland@fallriverma.org
<b>Key personnel</b>	This project is managed by a Veolia’s dedicated Project Manager, Jaysen Wetherbee, and OM&M team at this operation. They are supported by the same

<b>involved:</b>	regional business and technical team as the New Bedford OM&M project, representing a combination of local, regional and corporate technical, business and management professionals.
<b>Odor control facilities:</b>	The treatment facility uses a chemical scrubber for headworks odor control and the sludge dewatering building and sludge thickening and storage tanks.
<b>Computer systems operated:</b>	<ul style="list-style-type: none"> <li>• Veolia has in place a CMMS tool and other business and management tools similar to those used at the New Bedford project.</li> <li>• Additionally, in 2012, Veolia implemented the InfoNet® asset management software, a GIS based database tool for the wastewater collection and stormwater systems management. This program allows Veolia to track catch basin cleaning and outfall monitoring conducted for the City's MS4 stormwater management program.</li> </ul>
<b>Duration of contract:</b>	26 years (ongoing since 1994)
<b>5-year Compliance History:</b>	No safety and regulatory violations resulting in fines over the last five years of operations under this contract.

### #3 – Milwaukee, Wisconsin

<b>Location/Owner:</b>	Milwaukee Metropolitan Sewerage District (MMSD) , Milwaukee, Wisconsin
<b>Applicability/Relevance:</b>	OM&M of large Secondary Activated Sludge Wastewater Treatment Plant (330-MGD Jones Island Wastewater Treatment Plant) with regulatory and operations challenges similar to those at the City of New Bedford.
<b>Treatment System &amp; Processes:</b>	<ul style="list-style-type: none"> <li>• 330-MGD Secondary Activated Sludge Wastewater Treatment Plant, 300-MGD Tertiary Activated Sludge Wastewater Treatment Plant.</li> <li>• Located on a peninsula in the Milwaukee Harbor, the 330-MGD Jones Island wastewater treatment facility is the oldest operating activated sludge plant in the U.S. Wastewater treatment at Jones Island consists of preliminary/primary treatment, secondary treatment, phosphorus removal, disinfection and dechlorination. Solids removed from the primary clarifiers are pumped to the South Shore plant for anaerobic digestion and then returned to Jones Island for use in the production of Milorganite, an organic fertilizer.</li> <li>• This a regional wastewater operation that serves more than 1.1 million people in 18 communities.</li> <li>• 19 sewer and stormwater pump stations, ranging in capacity from 0.72-MGD to 69-MGD, and three storm tunnel pump stations (70-MGD each).</li> </ul>
<b>Capital Program:</b>	<ul style="list-style-type: none"> <li>• Under the leadership of a dedicated Capital Program Manager assigned to this contract, Veolia manages the development of capital program work scopes and works with the MMSD in implementation.</li> <li>• Key examples of capital projects undertaken or managed by Veolia include: South Shore Digested Sludge (DSD) Piping, Veolia self-funded and self-performed project to add an additional 10-feet of DSD line and managed the bidding, construction and commissioning of the new system (\$150,000); the addition of Chloramination systems at Jones Island treatment plant, a project that self-perform, funded and managed by Veolia (including bidding, construction and commissioning of the new system)(\$211,500); Veolia has also managed, implemented and provided startup for capital project involving an innovative approach to energy recovery using landfill gas.</li> </ul>
<b>Expenses budget:</b>	\$49.045 million annual OM&M fee, which includes maintenance and repair, as well as other expenses that are part of the agreement.

<b>History of operations:</b>	2008 – Initial 10 year OM&M contract, with early renewal for an additional 10-year term through 2028.
<b>Key project contact:</b>	Mr. Scott Royer, Vice President & General Manager, Veolia Water Milwaukee, LLC, 700 E. Jones Street, Milwaukee, WI 53207 <u>Telephone:</u> 414/747-3851 - <u>Email:</u> scott.royer@veolia.com
<b>Key client reference contact:</b>	Mr. Kevin Shafer, P.E., Executive Director – MMSD 260 W. Seeboth Street, Milwaukee, Wisconsin 53204 <u>Telephone:</u> (414) 272-5100 - <u>Email:</u> kshafer@mmsd.com
<b>Key personnel involved:</b>	This project is managed by Veolia’s dedicated OM&M team of more than 200 staff working under the leadership of our Project Manager (Vice President & General Manager), Scott Royer, and supported by the same corporate teams (technical and business) that work with the Veolia team at New Bedford.
<b>Odor control facilities:</b>	Veolia has responsibility for the OM&M of noise and odor control systems and operating protocols. We also worked with the MMSD to address failing odor control units at the South Shore Thickening Building where both gravity belt filters and centrifuges are used to thicken sludge. The carbon in the units was completely spent by the time Veolia arrived in 2008, and we developed a capital project to bring these units back into operation, and then managed the implementation of this work.
<b>Computer systems operated:</b>	Veolia’s O&M team has responsibility for environmental compliance for all elements of the wastewater operations. This has involved implementing state-of-the-art programs that annually verify the operational readiness of critical system components and improve remote monitoring to provide more complete feedback on real-time system performance; and maximize treatment efficiency. A Central Control System (CCS) for the collection and conveyance system, located at Jones Island, is used to monitor and control flows to the treatment plants through the Metropolitan Interceptor Sewer System (140 intercepting structures that regulate flows from local combined sewers into the intercepting sewers) and the Interceptor Sewer System (27 miles of tunnel located 250 to 300 feet below the surface, ranging from 17 to 32 feet in diameter). Operating data for the collection and conveyance system, including flow and level data from hundreds of monitoring locations, is transmitted via a wireless communication system to the CCS.
<b>Duration of contract:</b>	12 years and ongoing under a 20 year agreement through 2028.
<b>5-year Compliance History:</b>	The project’s performance history has been recognized with numerous awards, including the Distinguished Service Award from the National Council for Public-Private Partnerships. Both treatment plants have received NACWA Platinum Peak Performance Awards (since 2008) for perfect regulatory compliance for the past seven years. Veolia’s operations also received the first-ever U.S. Water Prize in 2011 from the Clean Water America Alliance for O&M excellence in “green” initiatives to address greenhouse gas (GhG) reduction and achieve a high level of environmental sustainability using a resource recovery approach. Over the course of that time Veolia has had few violations and fines, with just two violations of Wisconsin state permit limits that resulted in fines and remedial actions by Veolia which were accepted by the client and regulatory agencies. These were the first under Veolia’s operations contract, and other than these violations, Veolia has met regulatory requirements, and indeed has exceeded environmental standards set by the U.S. Environmental Protection Agency, the Milwaukee Department of Natural Resources and the MMSD, leading to awards from the National Association of Clean Water Agencies for 100% compliance with the Clean Water Act over the first six years of the contract.



#4 – Cranston, Rhode Island

<b>Location/Owner:</b>	City of Cranston, Rhode Island
<b>Applicability/Relevance:</b>	OM&M of large Secondary Activated Sludge Wastewater Treatment Plant (20.2-MGD) and 22 pump stations (ranging in capacity to 6.62-MGD) with regulatory and operations challenges similar to those at the City of New Bedford. This is Veolia’s longest-running and most successful contract in Rhode Island.
<b>Treatment System &amp; Processes:</b>	<ul style="list-style-type: none"> <li>• 20.2-MGD Secondary Activated Sludge Wastewater Treatment Plant (Secondary activated sludge treatment facility with nitrogen removal in the activated sludge process and phosphorus removal in the BNR process, and the primary and secondary treatment processes generate liquid sludge which is dewatered in centrifuges before being sent to the incinerators for end disposal)</li> <li>• 22 sewer pump stations (ranging in capacity from 0.01-MGD to 6.62-MGD)</li> <li>• Collection System (258 miles)</li> <li>• Septage Receiving and Effluent Reuse programs</li> <li>• Merchant Biosolids program with two sludge incinerators</li> </ul>
<b>Capital Program:</b>	<ul style="list-style-type: none"> <li>• Starting in 2005, Veolia and the City embarked on a capital program, implementing treatment plant upgrades to restore compliance and meet stringent new federal requirements for biological nutrient removal (BNR). Work included over \$10 million in design/build upgrades to meet new regulatory requirements, to increase plant capacity and reduce emissions from the incinerators; we also implemented \$4 million in sewer system improvements.</li> <li>• As part of our full capital risk program under this contract, Veolia invests approximately \$1 million annually for capital improvements for the wastewater system. In response to a new consent agreement, the City was required to upgrade the plant again. This capital program (valued at over \$16 million) included an incinerator upgrade. The Amendment also included a new revenue-sharing plan with the City (a combination of a guaranteed fixed-base share and a production-based share).</li> </ul>
<b>Expenses budget:</b>	\$8.4 million Annual O&M fee (including repair and maintenance, expenses and pass-through costs); project also recognizes \$7.2 million revenues from the Merchant Operations
<b>History of operations:</b>	Veolia began providing OM&M in 1989 (five-year agreement), and that contract was renewed under a new five year contract and then was transitioned to a 25-year agreement that in 1997 (with additional responsibility for implementing over \$45 million in capital improvements), that contract was extended for an additional five years in 2001, with a current term that runs through 2027.
<b>Key project contact:</b>	Mr. Earl Salisbury, Project Manager – Veolia Water North America – Northeast, LLC - 140 Pettaconsett Avenue, Cranston, RI 02920 <u>Telephone:</u> 401/467-7210 – <u>Email:</u> earl.salisbury@veolia.com
<b>Key client reference contact:</b>	Mr. Kenneth Mason, P.E., Director Public Works City of Cranston, Cranston City Hall, 869 Park Avenue, Cranston, RI 02910 <u>Telephone:</u> 401/780-3245 – <u>Email:</u> kmason@cranstonri.org
<b>Key personnel involved:</b>	Veolia has a full time staff of 41 that are based at this site who hold responsibility for the wastewater OM&M and merchant sludge operations, and that OM&M team is supported by the same corporate teams (technical and business) that work with the Veolia team at New Bedford.
<b>Odor control facilities:</b>	Veolia has worked proactively to address odors at the wastewater plant and merchant operations. Veolia established a Community Odor Committee to aid in identifying times and sources of odors. This proactive alliance made great strides toward controlling odors from the plant. Capital improvements, including advanced processes and equipment, had a significant impact on odor control and mitigation. Consequently, odor complaints and emissions are minimal and long-time neighbors acknowledge the improvements since Veolia assumed capital risk

	for the operations in 1997.
<b>Computer systems operated:</b>	The 2005 capital program at Cranston included enhancements to the treatment plant’s SCADA and computerized maintenance management system (CMMS). The upgraded SCADA system allows for improved monitoring as well as control of a number of plant processes and equipment. It now interfaced with the Oracle Utilities Work and Asset Management (OWAM) tool, which tracks all plant equipment and generates preventive maintenance work orders.
<b>Duration of contract:</b>	31 years and ongoing under a comprehensive OM&M agreement (lease) that runs through 2027.
<b>5-year Compliance History:</b>	<ul style="list-style-type: none"> <li>• The project/operations, both wastewater treatment and pump stations, have not had any compliance issues and/or governmental citations over the course of the past five years (2014 to date).</li> <li>• Veolia’s work scope for the City includes providing underground asset management (UGAM) services for the collection system, which is under a U.S. Environmental Protection Agency Administrative Order to perform CMOM. Veolia’s has been implementing practices to: better manage, operate and maintain the collection system; investigate capacity constrained areas of the collection system; and respond to sanitary sewer overflow (SSO) events.</li> </ul>

**#5 – Lynn, Massachusetts**

<b>Location/Owner:</b>	Lynn Water and Sewer Commission (LWSC), City of Lynn, Massachusetts
<b>Applicability/Relevance:</b>	OM&M of large Pure Oxygen Activated Sludge Wastewater Treatment Plant (25.8-MGD) with regulatory and operations challenges similar to those at the City of New Bedford.
<b>Treatment System &amp; Processes:</b>	<ul style="list-style-type: none"> <li>• 25.8-MGD Pure Oxygen Activated Sludge Wastewater Treatment Plant that operates as a regional facility that receives flows from the City of Lynn and the towns of Saugus, Nahant and Swampscott.</li> <li>• The regional biosolids processing includes high-solids centrifuge dewatering, and the 24-dtpd Fluidized Bed Incinerator unit (processing 5,550 dry tons of biosolids per year) for solids volume and mass reduction. The ash from this incineration process is disposed of at a landfill located at the Lynn regional wastewater treatment plant.</li> <li>• 13 Pump Stations (ranging in size up to 90-MGD)</li> </ul>
<b>Capital Program:</b>	<ul style="list-style-type: none"> <li>• Veolia began working with the LWSC in 1985, two years before renovations to the wastewater treatment plant were completed, to provide commissioning and startup of the \$76 million improvement project. This approach allowed our O&amp;M staff to be trained and become familiar with the processes in advance of startup. As a result, Veolia’s O&amp;M team was fully prepared to participate in the commissioning and startup of the new wastewater facilities.</li> <li>• In 2001, Veolia entered into a 20-year service contract for asset management and capital improvements, totaling \$14 million. The improvements were for various portions of the wastewater facility, including the installation the 24-dtpd incinerator and associated dewatering equipment; two high-solids centrifuges; a modernized supervisory control and data acquisition (SCADA) control system; and screening system upgrades.</li> <li>• Recent capital work at the wastewater plant has included: reskinning the Fluidized Bed Incinerator unit shell; replacement of air distribution bubble caps; replacement of Primary Heat Exchanger (\$365,000) and Stack Gas Re-heater (\$119,000); upgrades for mercury removal; and \$1.3 million in improvements related to the conversion of gaseous chlorine to sodium hypochlorite.</li> </ul>
<b>Expenses budget:</b>	Veolia’s O&M contract at the Lynn wastewater plant began in 1985, and the

	current OM&M cost/fee is \$5.8 million a year.
<b>History of operations:</b>	This OM&M project began in 1985, and was renewed in 2001 for a new 20-year term that is ongoing.
<b>Key project contact:</b>	Mr. Glen Wilson, Project Manager (Lynn Wastewater) Veolia Water North America – Northeast, LLC - 2 Circle Avenue, Lynn, MA 01905 <u>Telephone:</u> 781/592-7048 – <u>Email:</u> glen.e.wilson@veolia.com
<b>Key client reference contact:</b>	Mr. Robert J. Tina - Director of Wastewater Operations Lynn Water and Sewer Commission - 2 Circle Avenue, Lynn, MA 01905 <u>Telephone:</u> 781/592-7048 - <u>Email:</u> rtina@lynnwatersewer.org
<b>Key personnel involved:</b>	Project is managed by Veolia’s dedicated OM&M team of 34 staff working under the leadership of our Project Manager, Glen Wilson, and supported by the same corporate teams (technical and business) that work at New Bedford.
<b>Odor control facilities:</b>	<ul style="list-style-type: none"> <li>• The Lynn wastewater facility uses activated carbon scrubbers to reduce odors from the influent wet well, grit chamber area, biosolids gravity thickeners and centrifuge dewatering complex.</li> <li>• Veolia’s O&amp;M team at the wastewater plant also implemented other improvements, which included an odor control program. That work involved covering all preliminary and primary tankage and treating the odors from those tanks.</li> </ul>
<b>Computer systems operated:</b>	Veolia has established and uses a range of operation and management tools, including a CMMS program for the management of repair and maintenance, our company’s proprietary Process Control Management Plan (PCMP) for process control, monitoring and management, as well as Hach WIMST™, a database tool that is used for tracking compliance data tracking, organization and reporting. Additionally, as noted above, Veolia completed capital programs that included a modernized SCADA control system.
<b>Duration of contract:</b>	Veolia has operated the LWSC’s wastewater plant for 35 years (since 1985) and is ongoing under a 20 year agreement.
<b>5-year Compliance History:</b>	<ul style="list-style-type: none"> <li>• Veolia has had no safety and/or regulatory violations subject to fines over the last five years of operations for the water facilities operations, and our company’s record of performance and compliance under this contract has been recognized with numerous awards.</li> <li>• The project’s performance history has been recognized with numerous awards, including the Massachusetts Water Pollution Control Association’s large plant award of excellence 2009 and 2011.</li> </ul>

Additionally, in response to the Qualifications Form presented in Section 5, Veolia has included a listing of all relevant projects of similar size, complexity and effluent/water quality standards.

## 2.E – EMERGENCY OPERATIONS

*In this subsection, Veolia describes our approach to Emergency Operations.*

### 2.E.1. EMERGENCY OPERATIONS

Veolia has a well-defined Emergency Management Plan (EMP), which was recently updated and re-submitted to the City. Veolia has included excerpts of this document in Section 6 – Supplemental Information.

In this sub-section we outline how Veolia will use the EMP that will be established for the City's wastewater operations to effectively manage any emergencies that may arise at the facilities. This plan, which will be derived from existing plans, will be reviewed and updated and will be shared with the City's fire, police, public works and emergency management personnel.

In general terms, Veolia's approach to emergency response is to provide 24-hours-a-day/7-days-a-week coverage, using on-duty staff to monitor calls during normal working hours, and on-call and supervisory staff to respond to after-hours emergency calls. Project management and supervisory on-call personnel will carry a cellular telephone at all times of the day and night, and, as discussed earlier in this section, we have an established chain of response that ensures a Veolia staff person will respond to any such calls.

Using this system, customers, the City's staff and public safety agencies can reach Veolia personnel at any time. We will continue to coordinate EMP programming with community emergency response leaders and local emergency planning committees in the City. In addition, our O&M staff would be required to be

available to assist in any emergency that may require efforts to protect the citizens and provide continuous wastewater service.

Veolia's management team, as we discussed earlier, would also be responsible for notifying the City of all customer service requests or emergencies for which circumstances may threaten the safety, health or welfare of the community or wastewater facilities. We would maintain a log containing the start date/time and end date/time for all issues and emergencies, and note response times, actions taken and other details.

The EMP for the City's wastewater operations would also be regularly updated to reflect current facility, regional and corporate contacts and their roles and responsibilities, as well as other resources such as vendors, consultants and subcontractors that may be engaged on a subject-to-call basis. Further, Veolia would ensure coordination with emergency response agencies and programs now in place and, where appropriate, implement improvement opportunities as the result of our national experiences and lessons-learned.

There is no single way to respond to all emergencies, as each event is unique and must often be managed through on-the-spot decisions. However, certain basic rules of crisis management do apply to every situation. Veolia's site-specific plan is intended to provide the methods, tools and training necessary to provide for: quick, informed and responsive decision-making; the safety of employees and the public; internal and external notifications; the minimization of liability concerns; safeguards for the community; as well as for the protection of the image, credibility, operations and business relationships for both the City (as the owner) and Veolia (as the O&M provider). Some of the key elements that are part of the EMP include:

- Communication Plan
- Crisis Notification Procedures
- Post-emergency Checklist
- Annual Review
- Standard Operations Procedures for Emergency Response
- Reference and inclusion of Related Documents



The EMP also defines Veolia's incident command system, lists command structure, participants, responsibilities and contact information and will involve public agencies as needed and appropriate. Veolia's response plan will address, as a minimum, the following scenarios:

- Hurricanes, Floods and Major Weather
- Wet Weather and Off-Spec influent
- Responses to Chemical Spills
- Equipment and Process

Over the course of the contract, Veolia will continue to update all plans to meet the current needs of the City's wastewater facilities, and our staff would be available to respond to emergencies on a 24/7/365 basis.

Severe weather response is always a concern for communities, particularly a community such as New Bedford where the wastewater treatment facility is located on the ocean side of the hurricane barrier. Our firm's more than three decades of experience in the region has provided us with significant experience in this regard. We also bring special experience in working with the Federal Emergency Management Agency (FEMA), and coordinated disaster relief for a number of our clients.

As an example of Veolia's emergency preparedness, from October 22, 2012 to November 2, 2012, Hurricane (Superstorm) Sandy ravaged the East Coast, inflicting nearly \$70 billion in damage. On October 22nd, when the Massachusetts Emergency Management Agency began issuing situational awareness news releases, the Veolia New Bedford team had already begun their Emergency Response Protocol, topping off all chemical and fuel tanks, ensuring all equipment was operational and stocking up on bottled water and non-perishable food. When President Obama issued a pre-landfall emergency Declaration for Massachusetts, on October 28th, the Veolia

team in New Bedford was already well into their Emergency Response Protocol, including checking the plant for all loose debris and ensuring that all doors, windows and hatches were closed and secured and all vehicles were fueled. John Caron and Ken Henrique were busy scheduling an extra mechanic, electrician and 2 operators, in addition to the already scheduled 2 operators and one utility staff as well as themselves to be on site during the storm surge.

They assigned an operator to directly oversee and manage the influent pumps, another operator to directly oversee the effluent pumps and disinfection equipment and the electrician to respond to brown outs and power outages. All day, Monday and overnight into Tuesday, the assigned staff manned the plant through the worst of the storm including winds of up to 90 MPH and influent flows of 75 MGD. At the end, the membrane roof on the primary out building that houses the MCC was torn off resulting in minimal damage and no long-lasting effluent discharge violations.

Also during Superstorm Sandy, Veolia maintained the operation of the City of Cranston, Rhode Island's 25-MGD WWTP and collection system during which half of the WWTP was flooded. Our proactive storm planning and day-to-day preventative maintenance allowed continued operation and use of redundant systems to keep sufficient waste throughput to prevent the backup of sewage into the City of Cranston and operation of the plant throughout the storm.

Veolia also operated the New Orleans wastewater treatment plants, during Hurricane Katrina, during which the East Bank plant was completely submerged under 22 feet of floodwaters. After two perilous days, Veolia plant staff were airlifted from the site by Coast Guard rescue helicopters.

As soon as safely possible, Veolia mobilized our vast resources from around the country to assist with plant restoration and reparations. Portable pumps, pipes and generators were delivered to the site to begin pumping floodwaters back over the levee. One month after the disaster struck, Veolia completely dewatered the East Bank plant, and two weeks later, 30 million gallons of water was flowing once again through the facility. Meanwhile, the U.S. Environmental Protection Agency (EPA) imposed a 60-day deadline to restore secondary treatment capabilities.

While some industry insiders believed it would take a year to achieve such standards, given the site conditions, Veolia successfully met the regulatory agency's goal with one week to spare! Our staff, most of whom lost their homes and belongings, poured forth heroic efforts despite their personal tragedies – working

around the clock to restore a vital environmental service to their fellow citizens.

*Out of \$54.5 million in available funding to restore the New Orleans wastewater treatment facilities, Veolia completed some \$47 million in hurricane recovery work, applying Federal funds to the maximum benefit of the affected facilities, the client and the City of New Orleans. We directly coordinated projects with the Federal Emergency Management Agency (FEMA) as an agent for the client, providing damage estimates, defining scopes, cost estimates and work justifications.*



## 2.F – ENVIRONMENTAL PROTECTION AND MITIGATION

*In this subsection, Veolia describes the environmental protection, mitigation and monitoring systems for mitigating potential environmental impacts associated with performing the Services. This includes Veolia’s approach for establishing plant optimization of nitrogen removals; performing a “zero tolerance” odor and noise control program; how the City’s capital improvement programs will be integrated into the long-term operations; and our ongoing program to assure long-term compliance with environmental regulations, permit conditions and Division of Marine Fisheries MOU.*

### 2.F.1. MITIGATING ENVIRONMENTAL IMPACTS

#### Nitrogen Removal Optimization

Within the past few years, Veolia, the City and CDM Engineers have been collaborating to pilot on/off aeration control to remove nitrogen from the Wastewater Treatment Facility influent. This effort is a continuance of the initial 2010 study results of the aeration system by CDM engineers to identify “non-capital intensive” options for nitrogen removal as required by the new EPA/MADEP NPDES Permit # MA0100781 issued in 2009.

The initial CDM study identified on/off or “cyclic” aeration as the best “non-capital intensive” method to be investigated. As a result of the recent pilot testing, Veolia has planned a series of minor aeration improvements, as part of this

procurement offer, to improve aeration energy efficiency and to provide automated on/off or cyclic aeration control. Additionally, during aeration system piloting last Fall, it was determined early on that more air was needed than that typically provided by a single blower. Increasing air flows brings renewed energy concerns for the City and Veolia. It is no mystery that additional aeration energy is needed to drive the nitrogen removal process than that required to remove conventional pollutants (BOD, TSS). Veolia recognizes the need to optimize the aeration system to ensure that only the additional aeration energy needed to drive nitrogen removal is delivered to the system and not a penny more, therefore Veolia is proposing the following improvements to the aeration system:

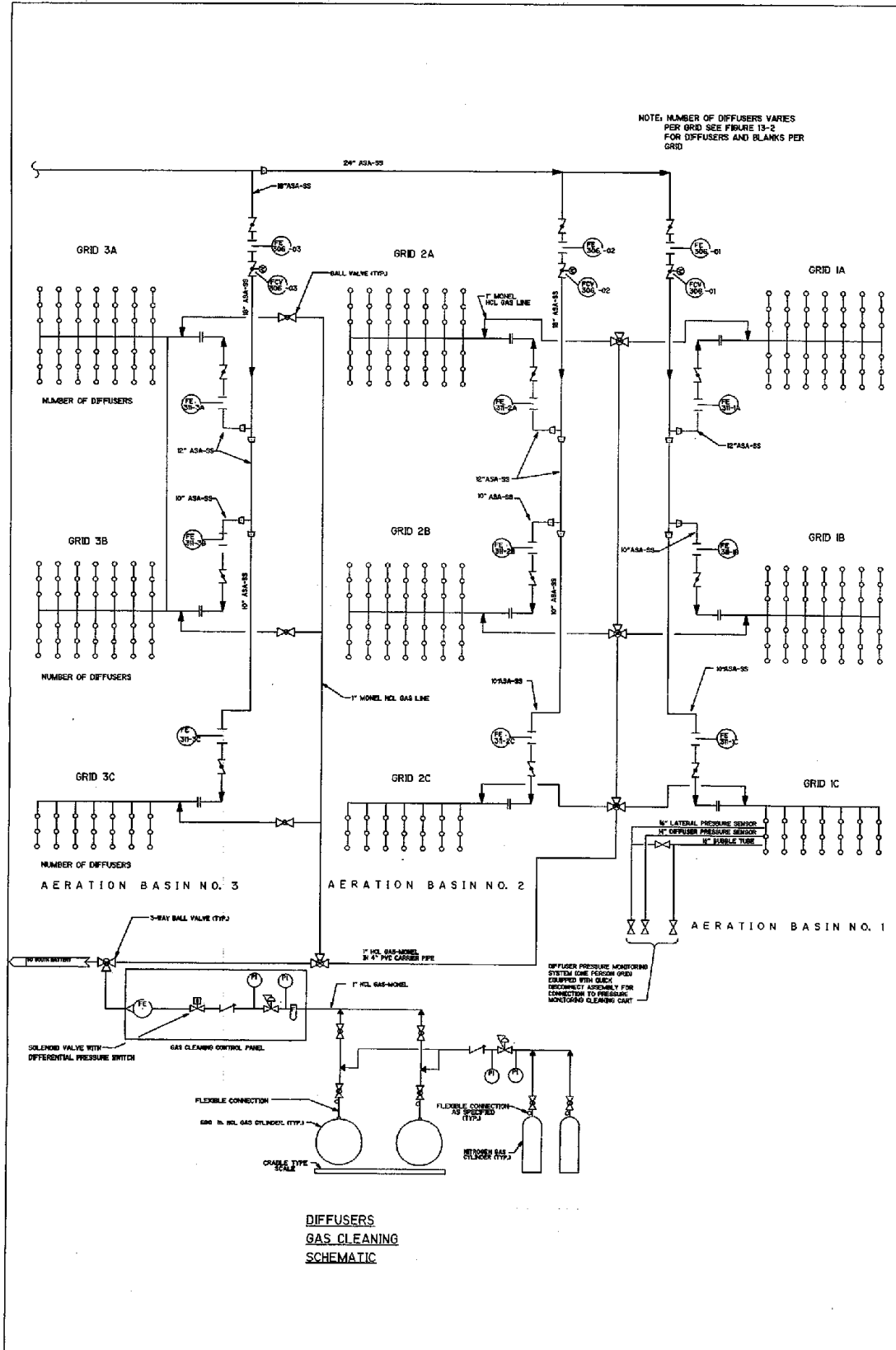
1. Replacement of the remaining flow control valves (FCV-306; 01-06) to each of the 5 remaining aeration tanks (Tanks 1, 2, 4, 5 & 6)
2. Install new FCV in the drop legs of aeration grids 1B-6B with a flow indicating transmitter.
3. Install wiring and controls to integrate into the SCADA system, for the drop legs to grids 1B-6B, with ON/OFF control loop programmed into SCADA and integrated with the other tanks.
4. Tune existing aeration dissolved oxygen control program for FCV-306 (01-06).

As the pilot testing continues, Veolia will continue to involve its subject matter experts such as Kumar Upendrakumar, P.E., BCEE and Christian Hoan to assist the City and the City’s engineer with further evaluating piloting progress and continue to investigate non-capital intensive improvements for nitrogen removal.

#### Odor and Noise Control

Veolia’s Odor and Noise Control Plan is a key component of our O&M plan. Veolia will operate and maintain the facilities in a manner that guarantees zero odor and noise complaints. Our Odor and Noise Control Plan will exceed the Performance Requirements and the O&M Standards described in the RFP.

Aeration design schematic from CDM engineer design drawings



NOTE: NUMBER OF DIFFUSERS VARIES PER GRID SEE FIGURE 13-2 FOR DIFFUSERS AND BLANKS PER GRID

City of New Bedford, Massachusetts  
Wastewater Treatment Plant

Figure 13-7  
Aeration Basin Air Flow Diagram

CDM Camp Dresser & McKee



We understand and acknowledge the City's high-priority objective and requirement for no odor complaints. We have successfully achieved this performance standard as part of our current contract. Our ability to achieve this odor complaint standard is driven by:

- Optimized operations of processing equipment and control treatment processes
- Daily "odor sweeps" of the surrounding neighborhoods
- Minimized on-site biosolids storage and maintaining seasonal SRT targets
- Diligent facilities and grounds housekeeping
- Proper attention to pump station cleaning and inspections.
- Routine inspections and cleaning at the wastewater facilities and pump stations.
- Weekly removal of waste and trash to mitigate any fugitive site odors detectable by the public off-site.

Veolia's proposed Odor Control Plan will minimally include the following elements and actions:

- Continuous operations of all odor control equipment in a manner consistent with its intended use and design
- Development and application of written processing equipment SOPs and facilities O&M to mitigate odors.
- Site-specific policy and procedures for any odor complaints (e.g., responses, certification and documentation).
- Project protocol for notifying the City concerning any odor complaints and response actions.

Other specific aspects of our proposed Odor and Noise Control Plan include:

- Continued use of ferrous sulfate for Influent H<sub>2</sub>S stripping thus reducing loadings to the odor scrubber equipment
- Odor measurements at facilities boundaries in ppb level.

- Odor measurements at the inlet and outlet of the odor scrubbers.
- Odor measurements at the inlet and outlet of the pump stations' carbon adsorbers or odor control equipment.
- Weather conditions and information (e.g., direction, humidity, ambient temperature).
- Process control data with respect to odor production factors (e.g., temperature, solids inventory and handling).
- Pump stations control data with respect to odor production factors (e.g., flow, wet well level and scum levels).
- Facilities (WWTF and pump stations) cleaning and maintenance activities or impacting schedules (e.g., PMs).

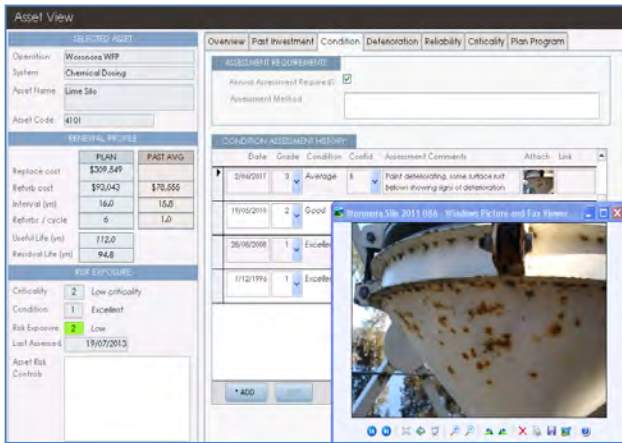
Veolia's proposed policy for odor and noise control is based upon comprehensive and proactive response actions. Such actions include responsive adjustments in the O&M conditions of the facilities and using all reasonable efforts to mitigate any future occurrences.

Additionally, we will work with the City to address any issues requiring major corrective maintenance, repairs or replacement works, or even long-term capital improvements projects to address problems. Veolia's odor control practices and any odor incidents will be communicated to the City with the ongoing commitment to communication well established with Veolia staff.

### **Capital Improvements Integration into Long-Term Operations**

Veolia applauds the City's Capital Improvement investments, and we stand ready to support optimization of long-term operations in accordance with City enhancements to automation and control.

Veolia will also provide **Contract Asset Renewal Management System (CARMS)** System Reporting in support of forecasting Capital Improvement needs. Veolia's OM&M team is responsible for preparing and presenting to our clients an annual Operations Report that reviews the past year's activities and planned activities for the upcoming year. This report is



**CARMS is a robust planning and asset management tool, as depicted on the screen shot (above), and provides reporting at the individual asset level. This tool was first implemented by Veolia in Australia back in 2007. It was developed to enable Veolia to meet contract obligations with respect to long-term asset renewal cost reporting. The system provides a detailed history for condition, past activities and forecast assumptions. It enables presentation of data from the level of the asset to the contract and the whole database. Finally, it can be used to develop trends, and for comparison and benchmarking of past and future spend. As such, CARMS complements the CMMS tool as an asset management decision support tool with a focus on major capital expenditure.**

generally provided to each client within 45 days of the end of the year and covers: recommended capital repairs and replacements; recommended capital improvements; annual flows of wastewater treated and financial issues including actual expenditures and any adjustments required in annual payments. In support of this Annual Report, Veolia also prepares a listing of Recommendations for Additional Capital Improvements.

Veolia's Capital Program Management (CPM) team applies effective management techniques to support the overall delivery of each client's capital projects, no matter the size or complexity. Building utility infrastructure or expanding existing systems is not simple and requires an experienced team that is familiar with the challenges and the coordination requirements for performing new construction while maintaining daily plant operations. Our CPM team offers skilled staff with expertise in the full cycle of water and wastewater system construction.

Our CPM managers can assist during the initial planning and design stage, especially leveraging our operational expertise, to identify ways to control costs, reduce potential for claims and synchronize various disciplines. When it is time to solicit bids for a Capital project, we can perform a full review of contract documents and provide construction management through completion. For example, if the City is thinking about making an investment in an influent pH adjustment system, we would advise that the plant already has two lime silos which could be retro fitted to make a slurry and delivery system to the recycle line at solids that goes to headworks, thus reducing capital costs.

Veolia will also employ our **CARMS** tool to assist in the Capital Planning Process. This tool is used to forecast repair and replacement of assets and is designed to handle management of items that depend heavily on individual failure patterns and deterioration curves that apply for different assets. Many of our clients have found our use of this tool effective in planning and driving their Capital Planning process over 10-year outlook periods.

CARMS is used in conjunction with Veolia's CMMS to identify and document major maintenance and repair activities, and capital needs. It is a decision support system that is used at a number of Veolia's OM&M projects sites to generate short-term budgets and long-term forecasts with easy-to-understand reports and graphs.

### Assuring Long-Term Compliance

Veolia seeks to deliver performance that exceeds expectations, and we know from experience that close coordination and communication with our clients and regulatory / environmental stakeholders is essential to ensuring satisfaction.

In summary, Veolia is an environmental services company with extremely high standards and is accountable for operations in the key areas of health and the environment. With accountability comes the obligation to provide information and data to pertinent entities including our clients, the various regulatory agencies governing environmental issues and, certainly, the public.

As in the past, Veolia will continue to employ its Process Control Management Plan (PCMP) program tool to enable operations staff to effectively control the wastewater treatment process to ensure compliance with the facility NPDES Permit and the Contract Enhanced Limits average monthly limits.

Veolia's proven PCMP program will continue to assure long-term compliance with environmental regulations, permit conditions and Division of Marine Fisheries MOU requirements.

### **Veolia's Environmental Community Partnership and Participation**

For a number of years, the New Bedford WWTF Project Manager has been providing the **Buzzards Bay Coalition** with an annual rainfall report. Veolia would like to continue partnering with the Coalition and expand our offering. Since 1998, Veolia has been involved with a collaborative water quality monitoring program with the Taunton River Watershed Alliance. The goal of the program is to collect good quality data that may be used to measure changes in the watershed and determine areas where problems exist and share this information with the TRWA and the City of Taunton. We would

like to propose a similar collaboration with the Buzzards Bay Coalition. To this end, we have recently been in discussions with the Director of Monitoring Programs for the Coalition and he reports that volunteers collect samples from May - September and transport the samples to the Marine Biological Laboratories in Woods Hole for Nitrogen analyses. We have offered to analyze up to 10 samples per month for Nitrogen pollutants (Nitrite, Nitrate, TKN and Total N). Coalition volunteers would collect the water samples, deliver them to the wastewater treatment facility and Veolia would provide the sample analyses. We believe that being able to deliver samples to a local laboratory rather than transport samples to Woods Hole will encourage local volunteerism and we want to be part of that movement.

*Veolia seeks to expand its partnership with the Buzzards Bay Coalition with water quality testing*





## 2.G – PROCESS MONITORING, QA/QC REPORTING TO CITY AND REGULATORY AGENCIES

*In this subsection, Veolia describes our federal and State wastewater regulatory compliance experience, including meeting permit conditions and complying with regulatory requirements for operating wastewater treatment facilities. Additionally, we describe our Performance Standard Compliance Plan, including reporting mechanisms; monitoring information and form; real-time data to be provided and consolidation of data; testing and scheduling plan updates for regulatory compliance.*

### 2.G.1. COMPLIANCE EXPERIENCE

Veolia has a record of experience and effectiveness in dealing with governmental agencies regulating wastewater treatment facilities operations in the state of Massachusetts. This covers more than 36 years of O&M experience working with municipal clients with requirements that are similar to those that will be required under this continued partnership with the City of New Bedford. The reference projects profiled in Subsection 2.D highlight Veolia's experience with regulatory agencies, including the Massachusetts Department of Environmental Protection (MADEP) and the U.S. Environmental Protection Agency (U.S. EPA) – the two agencies that provide the regulatory requirements and oversight under which your wastewater facilities operate.

Environmental compliance is a top-level commitment and priority for Veolia at each facility that we operate and manage. Our regulatory compliance record is among the best in the industry, and our firm accepts responsibility for achieving environmental compliance within the design and operating capabilities of each treatment facility. Mitigating environmental issues is fundamental to our long-term performance strategy, and safeguarding water resources, raw materials and energy resources, while limiting the impacts of our activities on air quality, soil pollution and water reserves, are integral to our Corporate Social Responsibility (CSR) and sustainability initiatives.

Overall for our water and wastewater operations in the Northeast region and other parts of the U.S., Veolia maintains an outstanding compliance record. Our performance record can be attributed to the numerous programs, policies and management controls that are described in this Proposal. We also maintain open, forthright communications with local, state and federal regulatory agencies through our regulatory interface program because our experience is that the closer communication is with these agencies, the more supportive they become.

Further, as we discussed in this Subsection 2.D, our company has operations responsibility for more than 180 municipal wastewater treatment plants and some 86 municipal water treatment plants.

Under these long-term operations, we maintain a better than 98% compliance rate and industry-leading safety. Where violations and fines do occur, Veolia pays the related fines that are attributable to any negligence on our part. Our projects and operations have also been recognized with literally hundreds of awards over the years for our safety and compliance performance.

### 2.G.2. PERFORMANCE STANDARD COMPLIANCE PLAN

Environmental compliance is the result of well managed and operated facilities. Veolia is responsible for the payment of any fines levied by MADEP and/or the U.S. EPA that result from Veolia negligence.



Because of this responsibility, Veolia deploys a suite of management tools that are used to organize, document and ensure regulatory compliance and water quality at the wastewater plant.

**Reporting Mechanisms**

Our technical management teams receive regular reports from each project and monitor the QA/QC program. These separate management teams provide direction, training and mentoring to help projects stay on track of OM&M activities.

These technical teams develop optimization tools and processes to help maintain assets and efficiently operate the treatment processes. These are the types of tools and approaches that we have established for and now use in our day-to-day operations at the wastewater facilities.

**Reporting Schedule**

Veolia uses regular weekly and monthly reporting along with semi-annual quality assurance sample testing and annual laboratory audits to verify and maintain all systems are within required regulatory parameters.

**Analytical Procedures**

Veolia’s proprietary Process Control Management Program (PCMP) tool is used to create a custom designed program reflecting the plants unique process attributes.

We use this to monitor the effectiveness of treatment processes and operations, and it is a cornerstone for computerized operations and laboratory data management.

This tool is integrated with permit requirements and performance goals and allows OM&M personnel to quickly review and analyze daily reports and make proactive/real-time process control adjustments to ensure compliance and efficiency.

The key features and components of Veolia’s PCMP tool are listed below in Table 2-6, which follows.

**Table 2-6. PCMP Features**

Component	Function
Management Plan	<ul style="list-style-type: none"> <li>• Drives facility environmental compliance and project economics.</li> <li>• Allows for visual confirmation and approach of target changes for key process parameters and changes in process flags.</li> <li>• Directs action on all Upper and Lower Alarm Limit flags.</li> <li>• Initiates Reports by Exception when alarm limit flags are raised in Flash Reports.</li> </ul>
Direction	<ul style="list-style-type: none"> <li>• Recommends targets for major unit processes.</li> <li>• Directs action on all warning flags.</li> <li>• Ensures data collection is adequate and accurate to support process decisions.</li> <li>• Implements all elements of the PCMP and recommends any required changes and additions.</li> </ul>
Analysis	<ul style="list-style-type: none"> <li>• Reviews and analyzes unit process performance, and data for reliability and completeness.</li> <li>• Provides reports, graphs and other data to help interpret process conditions.</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>• Posts weekly/daily directives to announce targets and resultant action plans, which are used for weekly process control meetings by the O&amp;M staff.</li> <li>• Verifies implementation of process control objectives, with review of logs, check sheets and laboratory data for conformance with established targets.</li> </ul>
Data Management	<ul style="list-style-type: none"> <li>• Maintains laboratory quality control in conformance with required regulatory guidelines.</li> <li>• Establishes and supervises sampling and monitoring schedules in accordance with process control, permit and other regulatory guidelines.</li> <li>• Maintains data management procedures and records.</li> </ul>

This is a true process management program and our OM&M staff are able to use the information from this tool to make necessary adjustments in unit operations and to maintain unit processes within target control ranges for the wastewater operations. Using the site-specific key performance indicators (KPIs) provided by the PCMP, operating staff can readily ensure treatment objectives are being met and can react quickly to correct any conditions that could lead to problems.

This PCMP-based system also helps in ensuring that all regulatory requirements are met. Any outlier in the target range of a monitored parameter would be flagged long before it approaches a point of regulatory non-compliance. Use of the PCMP means consistent efficient performance and compliance and will provide transparency in performance.

### Monitoring Information and Form

Veolia will continue to use the Hach Company's web-based Water Information Management Solution (Hach WIMS™) to consolidate data collection, tracking, trending and reporting process information for wastewater operations.

Flows, sample analysis results and process data are entered into the system by operations staff and alerts are set up to generate warnings for low and high level measurements. It has the ability to create graphs and customizable dashboards for each facility, making it a powerful tool for identifying and correcting process issues. It provides a permanent database of water quality tests, laboratory results and permits in the format required by regulatory agencies; and the data is stored on a central, secure database for preservation.

The use of Hach WIMS tool is standard at all Veolia water and wastewater facilities, and it provides the data and analytical foundation for regulatory compliance.

Veolia has a national contract with Citation Publishing, Inc., for the CyberRegs® service. This is a comprehensive online database of federal, state and international government regulations, statutes and related data, including the Federal Register, Code of Federal



Regulations, and state health and safety regulations. Real-time Data and Consolidation

Any database is only useful if the data can be extracted and used for decision making. Veolia has put extensive efforts into reporting and analysis capabilities. Reports are available from directly within the software and also through customized reports via Crystal Reports to meet any one-time or recurring reporting needs. Any entered data field can be extracted to customize reports as needed for monthly or annual reporting requirements. The tracking of KPIs ensures monitoring and benchmarking of the maintenance program.

### Quality Assurance/Quality Control (QA/QC)

Veolia has a well-defined QA/QC program that provides guidelines and support for all aspects of wastewater operations. The key elements of the program include the following.

#### Compliance Management System

Veolia uses an environmental management information software tool INTELEX (ISO 9001:2015 certified) to enable our OM&M team and corporate management personnel to proactively track and maintain compliance with environmental, health and safety requirements in a timely and complete manner. This tool is a web-based management system and is used to: organize and summarize all compliance requirements; track issues and tasks critical to effective management; track environmental items from identification through resolution; and assist with organizing and tracking contract deliverables.

The Veolia O&M team at the wastewater operations, supported by our regional management team, will use this tool as part of our overall regulatory and safety compliance approach.

Other key tools that are part of our QA/QC approach include: e3 Compliance (tracking software); Peer Audit program (formal comprehensive O&M audit) and Project Safety Review Programs; Laboratory QA/QC (site laboratory management program) and Outside Laboratory QA/QC Program; Environmental, Health, Safety and Security Program; Environmental Compliance Action Plan (site-specific plan); and customer satisfaction (site-specific plan).

### QA/QC Programing

Veolia also has a well-defined QA/QC program for laboratory operations. Today our firm operates literally hundreds of on-site laboratory facilities at water and wastewater facilities throughout the U.S. We are also responsible for managing the work of hundreds of subcontractor laboratories that are used to support the testing and analysis of samples from our operated and managed facilities. Fundamental to maintaining credible relationships with regulatory agencies is Veolia's approach to and practice of consistent regulatory compliance and process control information and reporting. These functions rely on the accuracy and precision of sampling and laboratory analyses performed. This is why our firm places a high priority on the QA/QC of analytical data, specifically incorporating elements of other analytical data QA/QC programs and regulatory standards of MADEP, the U.S. EPA and the National Environmental Laboratory Accreditation Conference (NELAC).

### Quality Assurance Manual

Veolia also maintains a corporate Quality Assurance Manual that is provided to each O&M project, and it includes corporate standards as well as site-specific information on policies and procedures. This manual reviews the overall company goals, objectives and procedures for maintaining environmental compliance and company quality standards. Our QA/QC programs are used for sampling, analytical procedures, recordkeeping and reporting.

### Project Reporting

Veolia has found that effective communication keeps our clients engaged in the operations, informed on project performance and provides a means for gauging the efficiency and level of service being provided. By being openly accountable, Veolia encourages an "operations excellence" attitude with our clients. The type and frequency of reports Veolia generates under similar OM&M agreement include Monthly Operations and Maintenance Reports and Regulatory Reports.

### Monthly Operations and Maintenance Report

Veolia's Project Manager is responsible for preparing and delivering a monthly operations report. These monthly operations report covers items including: OM&M activities; regulatory activities and issues; laboratory analyses performed; personnel actions; training; process control; daily inspections; significant alarms; maintenance plans and activities; permit and compliance results; equipment status and other relevant information.

### Regulatory Reports

Veolia's OM&M teams are also responsible for reports to the regulatory agencies at the State and Federal agencies. These reports are delivered as required, on a monthly, quarterly, semi and annual basis, and copies are provided to a Client's management team. The National Pollutant Discharge Elimination System (NPDES) Discharge Monitoring Report, as well as other NPDES required submittals, are developed and submitted by our OM&M team.

### Schedule for Updating Compliance Plans

As part of our approach to ensuring effective management of the wastewater systems, Veolia's OM&M team maintains detailed SOPs for all safety, critical process operations and administrative functions. We would also work to ensure that these documents stay up-to-date with specific policies and procedures from our firm, equipment manufacturer materials, as well as relevant information from the City, the MADEP and the U.S. EPA.

Veolia's Plans and Standard Operations Procedures will be update annually at a minimum or more frequently as changes/

modifications occur. Excerpts from Veolia's sample plans are included in Section 6 – Supplemental Information, including portions of the plans listed below:

- Odor Control Plan
- Emergency Response Plan
- Disaster Preparedness Plan

### **Audit**

Six months after the Commencement Date, and during the 5th, 9th, 14th and 19th years (14th and 19th year audits contingent on contract term being extended beyond ten years), Veolia will be required to meet a performance review to identify that all necessary maintenance items, routine, preventative and predictive, have been undertaken, and that the Wastewater Facility is operating in compliance with performance guarantees. The audit will be conducted by an Independent Engineer, chosen by either the City or Veolia, and approved by the City.

The Independent Engineer will conduct a detailed, comprehensive survey and inspection of the facilities to identify the physical and operational conditions and general status of repair of all equipment, buildings, structures, pavements, grounds, utility lines and system, spare parts inventories, operation and maintenance records, etc. The Independent Engineer will prepare a detailed report documenting the findings of the survey/inspection. The report will include an assessment of the current condition of each item or component, its estimated remaining service life, and whether the current condition is consistent with the maintenance and general upkeep requirements of the Agreement and expected normal wear and tear. An estimated cost for repair, renewal or replacement will be included for each item or component which is judged deficient. Estimates will include a reasonable contingency allowance that will vary depending on the nature of the work required.

A draft version of the Independent Engineer's report will be provided to the City for review and comment. In the case of disagreement between the City and Veolia as to the appraised condition of items or portions of the Wastewater Facility, or estimated cost for repair, renewal, or

replacement, the City will make the final decision, which shall be binding to both parties.

The standards for the performance Audit and the related costs will be established by the City and Veolia 120 days prior to the planned Audit dates. Costs for such Audit will be Veolia's responsibility.



## 2.H – LICENSES, PERMITS AND APPROVALS

*In this subsection, Veolia describes the approach to obtaining any new or renewing any existing licenses, permits, approvals or other authorizations needed to perform the services outlined in this RFP and Agreement Term Sheet. Veolia’s Key Management Team possesses the required licenses and registrations, which are included in Section 6 – Supplemental Information. Veolia also indicates where coordination or assistance with either the City or others is required for obtaining such approvals. Veolia provides an approach for implementing provisions to comply with the current and projected regulatory requirements.*

### 2.H.1. OBTAINING AUTHORIZATIONS

Veolia, as it understands from this procurement documentation and past practice, will solicit City approval in writing for repair and replacement expenses exceeding \$10,000 per incident. It is further understood that expenses less than \$10,000 per occurrence can occur without prior City approval. Regardless of these notification requirements, Veolia will continue to apprise the City, in writing, of any situations out of the norm and/or having potential negative impacts to the operation.

Assuming the City will be issued a new NPDES permit in the foreseeable future, Veolia can assist the City with future MADEP/EPA NPDES permit applications. This effort would be a collaboration between the City, Veolia and potentially the City’s consulting engineer. Any wastewater treatment process modification proposed by Veolia, albeit regardless of size or cost will first be discussed with the City and such proposal memorialized in writing to the City.

### 2.H.2. KEY MANAGEMENT TEAM LICENSES

Please refer to Section 2.C for Key Management Team Licenses, copies of which are provided in Section 6 – Supplemental Information.

### 2.H.3. CITY-SUPPORTED APPROVALS

As a trusted Operations and Maintenance Partner with the City, Veolia’s communications with the City regarding necessary repair and replacement requests will be clear, concise and to the point. Urgent matters will be first discussed verbally with the customer and, immediately thereafter, memorialized in writing. It is further understood that Veolia may be required to act immediately in situations, such as wastewater and pump station emergencies to include loss of power and or pumping capacity, and would be immediately obligated to address the emergency without prior approvals.

Regarding City Approvals for permitting, the City will remain the permittee for the wastewater treatment facility, and as such will remain in the lead, regarding any permitting correspondence to the regulatory authorities.

### 2.H.4. IMPLEMENTING PROVISIONS FOR CURRENT AND PROJECTED REGULATIONS

As with any regulatory change impacting current and future wastewater treatment or pumping station operations, Veolia will notify the City when word of these changes are first known. Formal regulation changes or notices from regulators will be then shared with the City, and Veolia will prepare a written brief following discussions. Said brief will contain an outline of impacts of the proposed changes or notices.

As in the past, Veolia will continue to be diligent and support the City’s intent to meet its current NPDES permit obligation of optimizing the current wastewater treatment process to remove nitrogen. With support from its Technical Support staff and Capital Projects Management Group, Veolia is poised to assist the City quickly in developing and implementing continued “non-capital intensive” solutions to further optimize nitrogen removal going forward.

Veolia, as a water service provider, does not have to rely on earnings resulting from engineering work. Typically, for many of our customers, engineering work is scope-focused and limited to the task at hand, and we would either contract with one of our engineering partners to design solutions or work with the customer's engineer directly.

Finally, Veolia's Management Reporting will include asset management reporting, maintenance and repair reporting, fixed asset cost reporting, and operations and maintenance cost reporting in support of City rate justifications.

05  
Proposal Forms



# 5.0

## Proposal Forms

**Veolia Water North America – Northeast, LLC** (Veolia), as the current contractor to the **City of New Bedford** for the operations, maintenance and management (OM&M) of your wastewater treatment – the core scope of this new Request for Proposal (RFP) – is uniquely qualified to remain as your operations partner.

As part of this fully responsive Project Proposal, we have completed and provided with this section all of the required Proposal Forms provided in Section 7.0 of the RFP. These forms, as presented in the pages that follow include:

- **Proposal Qualification Form** (Evidence of Minimum Qualifications)
  - As we noted on this form, the financial information is provided for Veolia North America, Inc. the parent holding company for Veolia Water North America – Northeast, LLC (the Proposer) and Veolia Water North America Operating Services, LLC (Parent Company and Guarantor); financial data for our company if consolidated and report on at this level. The 2016 and 2017 audited financial statements for Veolia North America, Inc., are provided with this Proposal (Section 6 – Supplemental Information) along with the draft audit 2018 financial statement.
  - We have also attached to this form a letter of commitment (Consent of Surety) that affirms our ability to provide the required Performance Bond.
- **Proposal Form 1 – Non-Collusion Affidavit and Pricing Commitment**
  - Veolia has modified the language of this form and we have provided the following: 1) executed form and 2) red-line version of form to show changes made to the executed form.
  - We have also executed and attached the Addenda Acknowledgement forms for Addenda Nos. 1, 2, 3 and 4.
- **Proposal Form 2 – Guarantee**
- **Proposal Form 5 – Key Project Staff** (Resumes Forms for Key Staff)

Veolia can also meet the Insurance coverage requirements specified for this new contact and a sample Insurance certificate is provided as the last attachment to this section to affirm this commitment.







## **Section 5.0 – Proposal Forms**

### **Proposer Qualification Form (with Consent of Surety)**

# PROPOSER QUALIFICATIONS FORM

PROPOSER NAME: Veolia Water North America – Northeast, LLC

## 1) United States Wastewater Plant Experience

Utility Location	Treatment Process/ Design Capacity	# and Size of Pumping stations	Contract O&M Program Dates	Current Client Contract (Name, Phone, Fax)
<b>Veolia - Similar Wastewater Treatment Plant Operations Massachusetts and other parts of the Northeast Region</b>				
City of New Bedford, Massachusetts	• 30-MGD Secondary Activated Sludge Wastewater Treatment Plant	(Sewer Pump Stations not in the current O&M scope, will be an additional service under new contract.)	1990-2020 (ongoing)	Jamie Ponte, Commissioner, Department of Public Infrastructure Telephone: 508/979-1550 Fax: 508-961-3054 Email: jamie.ponte@newbedford-ma.gov
City of Fall River, Massachusetts	• 30.9-MGD Pure Oxygen Secondary Wastewater Treatment Plant	• 17 Sewer Pump Stations • Ranging in design capacity from 0.04-MGD to 54-MGD	1994-2024 (ongoing)	Paul Ferland, Administrator of Community Utilities Telephone: 508/989-6332 Fax: 508/324.2103 Email: pferland@fallriverma.org
Lynn Water & Sewer Commission, Massachusetts	• 25.8-MGD Pure Oxygen Activated Sludge Wastewater Treatment Plant	• 13 Sewer Pump Stations • Ranging in capacity from 1.44-MGD to 90-MGD	1985-2021 (ongoing)	Robert Tina, Director of Wastewater Operations Telephone: 781/592-7048 Fax: 781/595-1420 Email: rtina@lynnwatersewer.org
City of Brockton, Massachusetts	• 20.49 MGD Tertiary Wastewater Treatment Plant	• 3 Sewer Pump Stations: • 1.86-MGD • 3.09-MGD • 31-MGD	1988-2020 (ongoing)	David Norton, Administrator, Water & Sewer Contract Telephone: 508/580-6878 Fax: 508/559-7960 Email: dnorton@cobma.us
City of Cranston, Rhode Island	• 20.2-MGD Secondary Activated Sludge Wastewater Treatment Plant	• 22 Sewer Pump Stations • Ranging in capacity from 0.01-MGD to 6.62-MGD	1989-2022 (ongoing)	Kenneth Mason, P.E., Director of Public Works Telephone: 401/780-3245 Fax: 401-7803176 Email: kmason@cranstonri.org
City of Danbury, Connecticut	• 15.5-MGD Advanced Trickling Filter Activated Sludge Wastewater Treatment Plant	• 21 Sewer Pump Stations • Multiple sizes and types to meet treatment plant flow capacity	1997-2023 (ongoing)	David Day, P.E., Superintendent, Department of Public Utilities Telephone: 203/797-4539 Fax: 203/796-1590 Email: d.day@danbury-ct.gov
Borough of Naugatuck, Connecticut	• 10.3MGD Tertiary Activated Sludge Wastewater Treatment Plant	• 5 Sewer Pump Stations • Ranging in size from 1.9-MGD to 8.9-MGD	2001-2021 (ongoing)	James Stewart, P.E., Director of Public Works Telephone: 203/720-7072 Fax: 203/720-7041 Email: JStewart@naugatuck-ct.gov
City of New London, Connecticut	• 10-MGD Secondary Activated Sludge Wastewater Treatment Plant	• 9 Sewer Pump Stations • Ranging in size to 11.088 MGD	2008-2033 (ongoing)	Barry Weiner - Chairman - Water and Water Pollution Control Authority Telephone: 860/443-7092 Fax: (860) 447-1644 - Email: Not Public
City of Leominster, Massachusetts	• 9.3-MGD Advanced Secondary Activated Sludge Wastewater Treatment Plant	• 14 Sewage Pump Stations • Ranging in Capacity from 0.05-MGD to 8.06-MGD	1983-2027 (ongoing)	Roger Brooks, Business Manager, Water & Sewer Department Telephone: 978/534-7590, Ext. 504 Fax: 978/534-7508 Email: rbrooks@dpw.leominster-ma.gov

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Utility Location	Treatment Process/ Design Capacity	# and Size of Pumping stations	Contract O&M Program Dates	Current Client Contract (Name, Phone, Fax)
City of Taunton, Massachusetts	• 9-MGD Advanced Secondary Wastewater Treatment Plant	• 38 Sewer Pump Stations • Ranging capacity from 0.23-MGD to 29.9-MGD	1998-2023 (ongoing)	Fred Cornaglia, Commissioner of Public Works <u>Telephone:</u> 508/821-1431 <u>Fax:</u> 508/821-1403 <u>Email:</u> fcornaglia@taunton-ma.gov
Westborough Treatment Plant Board, Westborough, Massachusetts	• 7.68-MGD Tertiary Oxidation Ditch - Westborough-Shrewsbury Wastewater Treatment Plant	(No sewer pump stations operated by Veolia)	1990-2022 (ongoing)	Jack Goodhall, P.E., Contract Administrator (Town of Westborough), Westborough Treatment Plant Board <u>Telephone:</u> 508/308-0663 <u>Fax:</u> 508/366-3099 <u>Email:</u> jackgoodhall@gmail.com
City of Gloucester, Massachusetts	• 5.15-MGD Chemically Enhanced Primary Treatment Wastewater Treatment Plant	• 29 Sewer Pump Stations • Multiple sizes and types to meet treatment plant flow capacity	2009-2024 (ongoing)	Michael Hale, AICP, Director of Public Works <u>Telephone:</u> 978-281-9785 <u>Fax:</u> 978-281-3896 <u>E-mail:</u> MHale@gloucester-ma.gov
Town of North Haven, Connecticut	• 4.5-MGD Advanced Secondary Wastewater Treatment Plant	• 9 Sewer Pump Stations • Average size for each station is 0.25-MGD • 2.25-MGD total flow	1991-2026 (ongoing)	Lynn Sadosky, Director of Public Works <u>Telephone:</u> 203/ 239-5321, Ext. 401 <u>Fax:</u> 203/234-2130 <u>Email:</u> sadosky.lynn@northhaven-ct.gov
Town of North Branford, Connecticut	(Flows transported to North Branford, Veolia provides O&M for collection system, including pump stations.)	• 5 Sewer Pump Stations • 0.354-MGD flow from these stations	2005-2026 (ongoing)	Kurt Weiss, P.E., Town Engineer <u>Telephone:</u> 203/484-6009 <u>Fax:</u> 203-484-6018 <u>Email:</u> townengineer@ townofnorthbranfordct.com
Town of Southbridge, Massachusetts	• 3.77-MGD Biotower Tertiary Wastewater Treatment Plant	• 11 Pump/Lift stations • Small pump stations with varying capacities	1984-2024 (ongoing)	Ron San Angelo, Town Manager <u>Telephone:</u> 508-764-5405 – Ext. 111 <u>Fax:</u> 508-764-5425 <u>Email:</u> rsanangeko@southbridgemass.org
Town of Smithfield, Rhode Island	• 3.5-MGD Envirex Activated Sludge Wastewater Treatment Plant	• 12 Pump/Lift Stations • Small pump stations with various flows	1990-2023 (ongoing)	Kevin Cleary, P.E., Town Engineer <u>Telephone:</u> 401/233-1041 <u>Fax:</u> 401/233-1091 <u>Email:</u> kcleary@smithfieldri.com
Town of Seymour, Connecticut	• 2.93-MGD Advanced Secondary Wastewater Treatment Plant	• 10 Pump/Lift Stations • Small pump stations with various flows	1994-2026 (ongoing)	Jon Livolsi, Chairman, Seymour Water Pollution Control Authority <u>Telephone:</u> 203/735-0288 <u>Fax:</u> 203/735-1135 - <u>Email:</u> (Not Public)
Town of Maynard, Massachusetts	• 1.45 MGD Rotating Biologic Contractor Tertiary Wastewater Treatment Plant	(No sewer pump stations operated by Veolia)	2014-2022 (ongoing)	Justin DeMarco, Director of Public Works <u>Telephone:</u> 978/897-1317 <u>Fax:</u> 978/897-7290 <u>Email:</u> jdemarco@townofmaynard.net
Town of Sturbridge, Massachusetts	• 1.3-MGD BioiMag/Co-Mag Extended Aeration Wastewater Treatment Plant	• 10 Sewer Pump Stations (multiple sizes) • Two Odor Control Stations • 750 E1 low pressure residential pumps (multiple sizes)	1989-2024 (ongoing)	Jeff Bridges, Town Administrator <u>Telephone:</u> 508/347-2500 <u>Fax:</u> 508/347-5886 <u>Email:</u> jbridges@town.sturbridge.ma.us
Town of Winchendon, Massachusetts	• 1.1-MGD Secondary Activated Sludge Wastewater Treatment Facility	(No sewer pump stations operated by Veolia)	2018-2023 Ongoing	Keith Hickey, Town Manager <u>Telephone:</u> 978/297-0085 <u>Fax:</u> 978/297-2769 <u>Email:</u> khickey@townofwinchendon.com
Town of Charlton, Massachusetts	• 0.45 MGD Rotating Biological Contractor/ Activated Sludge Wastewater Treatment Plant	• 11 Sewer Pump Stations (small stations with varying capacities)	2016-2020 (ongoing)	Steve Wandland, Water and Sewer Administrator <u>Telephone:</u> 508/248-4953 <u>Fax:</u> 508-248-0917



Utility Location	Treatment Process/ Design Capacity	# and Size of Pumping stations	Contract O&M Program Dates	Current Client Contract (Name, Phone, Fax)
		<ul style="list-style-type: none"> <li>• 180 Grinder Pump Stations</li> </ul>		Email: <a href="mailto:steve.wandland@townofcharlton.net">steve.wandland@townofcharlton.net</a>
<b>Veolia – Selected Similar Wastewater Treatment Plant Operations in Other Parts of the United States</b>				
Milwaukee Metropolitan Sewerage District, Wisconsin	<ul style="list-style-type: none"> <li>• 330-MGD Secondary Activated Sludge Wastewater Treatment Plant</li> <li>• 300-MGD Tertiary Activated Sludge WWTP</li> </ul>	<ul style="list-style-type: none"> <li>• 19 Sewer and Storm Pump Stations</li> <li>• Ranging in capacity from 0.72-MGD to 69-MGD</li> <li>• 3 Storm Tunnel Pump Stations</li> <li>• 70-MGD capacity for each station</li> </ul>	2008-2028 (ongoing)	Kevin Shafer, P.E., Executive Director Telephone: 414/272-5100 Fax: 414/225-2204 Email: <a href="mailto:kshafer@mmsd.com">kshafer@mmsd.com</a>
Downriver Utility Authority (DUWA), Wayne County, Michigan	<ul style="list-style-type: none"> <li>• 150-MGD Secondary Treatment (high-purity oxygen activated sludge with secondary settling) Wastewater Treatment Plant</li> </ul>	(No sewer pump stations operated by Veolia)	2018-2028 (ongoing)	Vyto Kaunelis, Principal, DUWA Contract Administrator, OHM Advisors Telephone: 313/481-1250 Fax: (None) Email: <a href="mailto:vyto.kaunelis@ohm-advisors.com">vyto.kaunelis@ohm-advisors.com</a>
City of Wilmington, Delaware	<ul style="list-style-type: none"> <li>• 134-MGD Envirex High-Rate Activated Sludge Wastewater Treatment Plant</li> </ul>	<ul style="list-style-type: none"> <li>• Three Sewer Pump Stations</li> <li>• 7th Street Pumping Station - 2.6 MGD</li> <li>• 12 Street Pumping Station - 3.45 MGD</li> <li>• 11 Street Pumping Station - 215 MGD</li> </ul>	1985-2020 (ongoing)	Kelly Williams, Commissioner of Public Works - Telephone: 302/576-2567 Fax: 302/571-4579 Email: <a href="mailto:kwilliams@WilmingtonDE.gov">kwilliams@WilmingtonDE.gov</a>
City of Jackson, Mississippi	<ul style="list-style-type: none"> <li>• 46-MGD Secondary Activated Sludge Wastewater Treatment Plant</li> <li>• 4.5-MGD Extended Aeration Activated Sludge Wastewater Treatment Plant</li> <li>• 0.75-MGD Sequencing Batch Reactor Activated Sludge Wastewater Treatment Plant</li> </ul>	<ul style="list-style-type: none"> <li>• 98 Pump Stations</li> <li>• 29 Large pump stations (ranging up to 50 HP)</li> <li>• 69 small pump stations (ranging in size to 5 HP)</li> </ul>	2016-2026 (ongoing)	Robert Miller, Director of Public Works Telephone: 601/960-2091 Fax: (none) Email: <a href="mailto:miller@jacksonms.gov">miller@jacksonms.gov</a>
Fulton County, Georgia	<u>North Area Wastewater Operations (advanced treatment facilities with activated sludge treatment process):</u> <ul style="list-style-type: none"> <li>• 15-MGD Johns Creek Environmental Campus Water Reclamation Facility</li> <li>• 24-MGD Big Creek Water Reclamation Facility</li> <li>• 1-MGD Little River Water Reclamation Facility</li> </ul>	<ul style="list-style-type: none"> <li>• 28 North Fulton Pump Stations</li> <li>• Ranging in capacity from 0.1-MGD to 95-MGD</li> </ul>	2010-2025 (ongoing)	O.P. Shukla, Operations Administrator - Department of Water Resources Telephone: 404/612-0225 Fax: 404/612-4000 Email: <a href="mailto:op.shukla@fultoncountyga.gov">op.shukla@fultoncountyga.gov</a>
	<u>South Area/Camp Creek Operations (advanced treatment facilities with activated sludge treatment process):</u> <ul style="list-style-type: none"> <li>• 24-MGD Camp Creek Water Reclamation Facility</li> <li>• 0.10-MGD Little Bear Water Reclamation Facility</li> </ul>	<ul style="list-style-type: none"> <li>• 18 Sewer Pump Stations</li> <li>• Ranging in capacity from 0.3-MGD to 40.2-MGD</li> </ul>	2017-2022	
City of Great Falls, Montana	<ul style="list-style-type: none"> <li>• 13.3-MGD MLE Activated Sludge Wastewater Treatment Plant</li> </ul>	<ul style="list-style-type: none"> <li>• 28 Sewer Pump Stations</li> <li>• Ranging in size from 5-GPD to 5-MGD</li> <li>• 4 Stormwater Pump Stations</li> </ul>	1977-2020 (ongoing)	Paul Skubinna, Contract Administrator Telephone: 406/455-8136 Fax: 406/727-0005 E-mail: <a href="mailto:pskubinna@greatfallsmt.net">pskubinna@greatfallsmt.net</a>

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Utility Location	Treatment Process/ Design Capacity	# and Size of Pumping stations	Contract O&M Program Dates	Current Client Contract (Name, Phone, Fax)
Rialto Water Services, City of Rialto California	<ul style="list-style-type: none"> <li>11.7-MGD Activated Sludge Wastewater Treatment Plant</li> </ul>	<ul style="list-style-type: none"> <li>6 Lift/Pump Stations</li> <li>Multiple sizes and types to meet treatment plant flow capacity</li> </ul>	2012-2042 (ongoing)	Rolf Ohlemutz, General Manager <u>Telephone:</u> 916/917-0437 <u>Fax:</u> 909/784-0312 <u>Email:</u> rolf@t-rockcap.com
City of Richmond, California	<ul style="list-style-type: none"> <li>16-MGD Secondary Activated Sludge Wastewater Treatment Plant</li> </ul>	<ul style="list-style-type: none"> <li>20 Lift/Pump Stations</li> <li>13 Sanitary Sewer Pump Stations</li> <li>7 Stormwater Lift Stations</li> </ul>	2001-2027 (ongoing)	Yader Bermudez, Engineering & CIP Director <u>Telephone:</u> 510/307-8091 <u>Fax:</u> 510/307-8116 <u>Email:</u> yader.bermudez @ci.richmond.ca.us
City of Poughkeepsie, New York	<ul style="list-style-type: none"> <li>10-MGD Secondary Activated Sludge Wastewater Treatment Facility</li> </ul>	<ul style="list-style-type: none"> <li>9 Sewer Pump Stations</li> <li>Ranging in capacity from 5,000-gpd to 6-MGD</li> </ul>	1980-2026 (ongoing)	Chris Gent, Commissioner of Public Works <u>Telephone:</u> 845-451-4176 <u>Fax:</u> 845/451-4101 <u>Email:</u> cgent@cityofpoughkeepsie.com

1) Financial Statements (Indicate if Proposer or Project Guarantor attached most recent three years of audited financials to proposal).

<u>Year</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
<i>(* All amounts in thousands of U.S. dollars)</i>			
Net Worth	<u>\$2,017,120</u>	<u>\$1,899,748</u>	<u>\$1,981,970</u>
Revenues	<u>\$ **</u>	<u>\$ **</u>	<u>\$ **</u>
Profits After Tax	<u>\$119,181</u>	<u>\$(28,672)</u>	<u>\$157,111</u>

<b>NOTES:</b>			
*	Financial information for Veolia North America, Inc. the parent holding company for Veolia Water North America – Northeast, LLC (the Proposer) and Veolia Water North America Operating Services, LLC (Parent Company and Guarantor); financial data for our company is consolidated and reported on at this level.		
**	Veolia North America, Inc. is the parent holding company for <u>Veolia Water North America – Northeast, LLC (the Proposer)</u> and <u>Veolia Water North America Operating Services, LLC (Parent Company and Guarantor)</u> , and does not therefore have revenue from operations. The holding entity principally generates its pre-tax income from the interest income generated from loans to its subsidiaries as well as dividends paid from its subsidiaries.		
***	2018 results are draft numbers as the audit is the process of being completed. Final 2018 audited statements for Veolia North America, Inc. will be provided once available (expected in April 2020). The 2016 and 2017 audited financial statements for Veolia North America, Inc., are provided with this Proposal, along with the draft audit 2018 financial statement; see Section 6.		

2) Letter of Credit / Performance Bond

Attached to the Form a written demonstration of the ability to obtain the required letter of credit or performance bond. Written confirmation should be on the letterhead of the financial institution which will provide the letter of credit or performance bond consistent with M.G.L., Chapter 30B. **Do not specify the actual dollar amount of the commitment since price information can only be specified in the Price Proposal.**

*(Veolia Water North America – Northeast, LLC has provided a letter from our Surety Company, Consent of Surety, to demonstrate the ability of our firm to obtain the required annually renewable performance bond; this letter is provided as an Attachment at the end of this form.)*



### 3) Certifications and Licenses

*(Veolia Water North America – Northeast, LLC, the Proposer, maintains a staff of on-site management, operation, maintenance and support employees that are duly licensed, registered and fully qualified to perform services of this RFP by the State of Massachusetts. Copies of the referenced licenses and certifications for each individual named are provided in Section 6, Supplemental Information, of this Proposal.)*

Position	Individual Named	State	Wastewater (Grade)
<b>Veolia O&amp;M Team at New Bedford</b>			
<b>Project Manager, Operations Manager and Laboratory Manager/ Permitting Leader/ Regulatory Leader</b>	<b>John Carron</b>	MA	• Grade 7C (Full) Wastewater Treatment Combined Domestic/Industrial Operator Certification
		NEWA	• Grade IV, Collections System Operator
		CT	• Class IV, Wastewater Treatment Operator
<b>Maintenance Manager</b>	<b>Kenneth Henrique</b>	MA	• Grade 7C (Full) Wastewater Treatment Combined Domestic/Industrial Operator Certification
		RI	• Grade 4, Wastewater Treatment Operator
		NEWEA	• Grade IV, Collection System Operator
<b>Lead Chief Operator/ Operator III</b>	<b>Chris Soares</b>	MA	• Grade 7C (Full) Wastewater Treatment Operator
<b>Odor &amp; Noise Technician and Site Safety Officer</b>	<b>Robert Arruda</b>	MA	• Massachusetts, Grade 6C Wastewater Treatment Operator
<b>Chief Operator/ Operator III</b>	<b>Phillip Hannink</b>	MA	• Grade 7C (Full), Wastewater Treatment Operator
<b>Chief Operator/ Operator III</b>	<b>Connor Riley</b>	MA	• Grade 6-C OT Wastewater Treatment Plant Operator • Grade 4 M OT Wastewater Treatment Plant Operator
<b>Chief Operator/ Operator III</b>	<b>Christopher Rizzuto</b>	MA	• Grade 7C (Full), Wastewater Treatment Operator
<b>Chief Operator/ Operator III</b>	<b>Albert Santos, Jr.</b>	MA	• Grade 7C (Full), Wastewater Treatment Operator
<b>Operator II</b>	<b>Stephen Duckworth</b>	MA	• Grade 4M OT Wastewater Treatment Operator

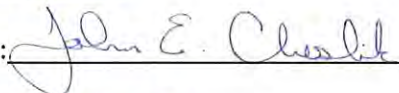
<b>Position</b>	<b>Individual Named</b>	<b>State</b>	<b>Wastewater (Grade)</b>
<b>Operator II</b>	<b>Aaron Alferes</b>	MA	<ul style="list-style-type: none"> <li>• Grade 4M OT Wastewater Treatment Operator</li> </ul>
<b>Operator II</b>	<b>Gregory Medeiros</b>	MA	<ul style="list-style-type: none"> <li>• Grade 6C (Full) Wastewater Treatment Operator</li> <li>• Grade 4M OT Wastewater Treatment Operator</li> </ul>
<b>Operator II</b>	<b>Kevin Costa</b>	MA	<ul style="list-style-type: none"> <li>• Grade 4M OT Wastewater Treatment Operator</li> </ul>
<b>Laboratory Technician</b>	<b>Kathleen Lambalot</b>	MA	<ul style="list-style-type: none"> <li>• Grade 4M OT Wastewater Treatment Operator</li> </ul>
<b>Laboratory Technician</b>	<b>Dominic Galotti</b>	MA	<ul style="list-style-type: none"> <li>• Grade 6C OT Wastewater Treatment Operator</li> </ul>
<b>Utility Worker</b>	<b>Kevin Isabelle</b>	MA	<ul style="list-style-type: none"> <li>• Grade 6C (Full) Wastewater Treatment Operator</li> </ul>
<b>Veolia Management and Support Team for New Bedford</b>			
<b>Project Director Veolia Vice President of Operations</b>	<b>Darlene Domingos</b>	MA	<ul style="list-style-type: none"> <li>• Grade 7, Wastewater Treatment Operator</li> <li>• Grade 2 (OIT) Water Treatment Operator</li> </ul>
		NEWEA	<ul style="list-style-type: none"> <li>• Grade IV, Collection System Operator</li> </ul>
<p><u>Notes:</u></p> <ul style="list-style-type: none"> <li>• MA – Commonwealth of Massachusetts</li> <li>• CT – State of Connecticut</li> <li>• RI – State of Rhode Island</li> <li>• NEWA - New England Water Environment Association</li> </ul>			



4) Anti-Fraud Demonstration (to be signed by company officer submitting Proposal)

"No officer of the Proposer company or affiliate of the company nor the Project Guarantor, if any, or any affiliate of the Project Guarantor has been convicted of fraud by the Federal government of the United States or by any governmental entity in Massachusetts, or by any other state in the United States."

Name: John Cheslik

Signature: 

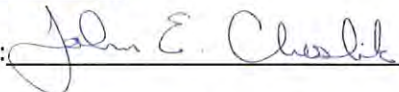
Title: Senior Vice President  
Veolia Water North America –  
Northeast, LLC

Date: February 3, 2020

5) Bankruptcy (to be signed by company officer submitting Proposal)

"Neither the Proposer Company or any affiliate of the Proposer company nor the Project Guarantor, if any, or any affiliate of the Project Guarantor has ever filed for bankruptcy."

Name: John Cheslik

Signature: 

Title: Senior Vice President  
Veolia Water North America –  
Northeast, LLC

Date: February 3, 2020

Or:

Bankruptcy was claimed under the following circumstances:



**Westchester Fire Insurance Company**  
436 Walnut Street, 10th Floor  
Philadelphia, Pennsylvania 19107

January 23, 2020

City of New Bedford  
1105 Shawmut Avenue  
New Bedford, MA 02746

**Re: RFP # 20439047 Contract Operation, Maintenance, & Management  
Services of the City of New Bedford's Wastewater Treatment Facility**

Dear Sir/Madam:

This letter is being provided by Westchester Fire Insurance Company ("WFIC"), which is a member of The Chubb Limited group of insurance companies ("Chubb"), in relation to Veolia Water North America-Northeast, LLC ("Veolia"). WFIC is rated A++ XV by A.M. Best, is listed in the U.S. Department of the Treasury acceptance report, and is licensed in all 50 states. With respect to Veolia, WFIC has supported single projects in the range of \$20 million, and aggregate bonded surety exposures in the range of \$100 million.

With respect to any projects for which Veolia may be considered by you, please note that WFIC only extends suretyship after completion of its normal practice of underwriting the account at the time Veolia requests any bond(s). Additionally, the execution of any bond(s) is also subject to review and acceptance of the contract document terms and conditions by WFIC, this includes any and all related underwriting criteria that Chubb deems relevant.

Please understand that issuance of any bonds is a matter between Veolia and WFIC, and that bonds are issued at the sole discretion of WFIC and its underwriters. WFIC assumes no liability to you or any third party if for any reason it elects not to execute any bid, performance or payment bonds related to any project for which Veolia may be considered, or for which this letter has been provided.

Should you require anything further please do not hesitate to contact the undersigned.

Yours Truly,

Mechelle Larkin  
Attorney-in-Fact

# CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California )  
County of Orange )

On JAN 23 2020 before me, Kathy R. Mair, Notary Public  
DATE [Name of Notary Public and Title "Notary Public"]

personally appeared Mechelle Larkin  
[Name(s) of Signer(s)]

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.



WITNESS my hand and official seal.

*Kathy R. Mair*

Signature of Notary Public

Place Notary Seal Above

## OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

### Description of Attached Document

Title or Type of Document: \_\_\_\_\_

Document Date: \_\_\_\_\_ Number of Pages: \_\_\_\_\_

Signer(s) Other Than Named Above: \_\_\_\_\_

### Capacity(ies) Claimed by Signer(s)

Signer's Name: Mechelle Larkin

- Corporate Officer - Title(s): \_\_\_\_\_  
 Partner -  Limited  General  
 Individual  Attorney-in-Fact  
 Trustee  Guardian or Conservator  
 Other: \_\_\_\_\_

Signer Is Representing: \_\_\_\_\_

Signer's Name: \_\_\_\_\_

- Corporate Officer - Title(s): \_\_\_\_\_  
 Partner -  Limited  General  
 Individual  Attorney-in-Fact  
 Trustee  Guardian or Conservator  
 Other: \_\_\_\_\_

Signer is Representing: \_\_\_\_\_

# CHUBB®

## Power of Attorney

Westchester Fire Insurance Company | ACE American Insurance Company

Know All by These Presents, that WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY corporations of the Commonwealth of Pennsylvania, do each hereby constitute and appoint My Hua, Mechelle Larkin and Kathy R. Mair of Irvine, California; Tenzer V. Cunningham, Martha Gonzales, Joaquin Perez, Jeffrey Strassner and Brenda Wong of Los Angeles, California -----

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY have each executed and attested these presents and affixed their corporate seals on this 3<sup>rd</sup> day of September, 2019.

*Dawn M. Chloros*

Dawn M. Chloros, Assistant Secretary

*Stephen M. Haney*

Stephen M. Haney, Vice President



STATE OF NEW JERSEY

County of Hunterdon ss.

On this 3<sup>rd</sup> day of September, 2019, before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that she is Assistant Secretary of WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of said Companies; and that she signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that she is acquainted with Stephen M. Haney, and knows him to be Vice President of said Companies; and that the signature of Stephen M. Haney, subscribed to said Power of Attorney is in the genuine handwriting of Stephen M. Haney, and was thereto subscribed by authority of said Companies and in deponent's presence.

Notarial Seal



KATHERINE J. ADELAAR  
NOTARY PUBLIC OF NEW JERSEY  
No. 2318885  
Commission Expires July 18, 2024

*Katherine J. Adelaar*  
Notary Public

### CERTIFICATION

Resolutions adopted by the Boards of Directors of WESTCHESTER FIRE INSURANCE COMPANY on December 11, 2006 ; ACE AMERICAN INSURANCE COMPANY on March 20, 2009.

"RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into in the ordinary course of business (each a "Written Commitment"):

- (1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.
- (2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such person's written appointment as such attorney-in-fact.
- (3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (4) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing to any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested."

I, Dawn M. Chloros, Assistant Secretary of WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY (the "Companies") do hereby certify that

- (i) the foregoing Resolutions adopted by the Board of Directors of the Companies are true, correct and in full force and effect,
- (ii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Whitehouse Station, NJ, this

JAN 23 2020

*Dawn M. Chloros*

Dawn M. Chloros, Assistant Secretary



IN THE EVENT YOU WISH TO VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT:  
Telephone (908) 903-3493 Fax (908) 903-3656 e-mail: surety@chubb.com





## **Section 5.0 – Proposal Forms**

### **Proposal Form 1 Non-Collusion Affidavit and Pricing Commitment and Addenda Acknowledgement Forms**





I have submitted all Proposal Forms which are incorporated into this Proposal by this reference.

I further certify:

- A: that neither the Proposer nor any member of the Proposer's team is currently suspended or debarred from doing business with any government entity;
- B: that the Proposer has reviewed all of its engagements and pending engagements and that, in making this Proposal, no potential for conflict of interest or unfair advantage exists;
- C: that the information supplied by the Proposer in this Proposal is current, truthful and complete;

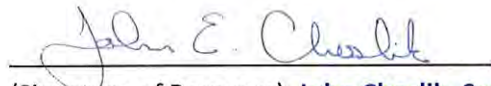
Having carefully examined the project documents comprising the RFP and all other documents bound therewith, together with all Addenda thereto, all information made available at the City, and being familiar with the work and the various conditions affecting the work, the undersigned hereby offers to furnish all plant, labor, materials, supplies, equipment and other facilities and things necessary or proper or incidental to the contract operations as required by and in strict accordance with the applicable provisions of this RFP and of all Addenda issued by the City and mailed to the undersigned prior to the date for operating proposals, whether received by the undersigned or not, for the Service Fee stated in the Proposal as elected to be implemented by the City and at the City's sole discretion.

I acknowledge receipt of addenda:

<u>NO.</u>	<u>Date</u>
<u>1</u>	<u>December 2019</u>
<u>2</u>	<u>December 2019</u>
<u>3</u>	<u>January 7, 2020</u>
<u>4</u>	<u>January 14, 2020</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

I further warrant that no person or selling agency has been employed or retained to solicit or secure such Agreement upon an agreement or understanding for a commission, percentage, brokerage

or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by Veolia Water North America – Northeast, LLC.

A handwritten signature in blue ink that reads "John E. Cheslik". The signature is written in a cursive style and is positioned above a solid horizontal line.

(Signature of Proposer) **John Cheslik, Senior Vice President**

**Note:** *If this Proposal is being submitted by a corporation, the Proposal shall be executed in the corporate name by the president or other corporate officer, and the corporate seal shall be affixed and attested to by the clerk. A certificate of the clerk of the corporation evidencing the officer's authority to execute the Proposal shall be attached.*

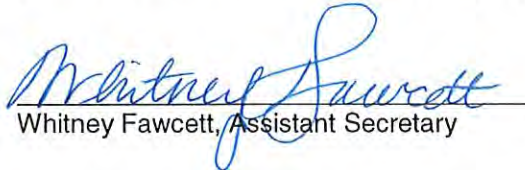


**CERTIFICATE OF ASSISTANT SECRETARY  
OF  
VEOLIA WATER NORTH AMERICA-NORTHEAST, LLC**

The undersigned, Whitney Fawcett, Assistant Secretary of Veolia Water North America-Northeast, LLC, a Delaware limited liability company (the "Company"), does hereby certify that John Cheslik is the duly elected and acting Senior Vice President of the Company and in such capacity is authorized to execute contracts and make commitments with regard to the following project:

**CONTRACT OPERATION, MAINTENANCE AND MANAGEMENT SERVICES  
OF THE CITY OF NEW BEDFORD'S WASTEWATER TREATMENT FACILITY  
CITY OF NEW BEDFORD, MASSACHUSETTS**

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Company this 20<sup>th</sup> day of January, 2020.

  
Whitney Fawcett, Assistant Secretary

SEAL

*If this Proposal is being submitted by a joint venture, it shall be executed by all joint venture Partners, and any partner that is a corporation shall follow the requirements for execution by a corporation as set forth above.*

**Francis P. Crehan**

\_\_\_\_\_  
(Notary Public)

State of Indiana

County of Marion

On this 31<sup>st</sup> day of January, 2020, before me appeared John Cheslik, personally known to me to be the person described in and who executed this Proposal and acknowledged that (she/he) signed the same freely and voluntarily for the uses and purposes therein described.

In witness thereof, I have hereunto set my hand and affixed my official seal the day and year last written above.



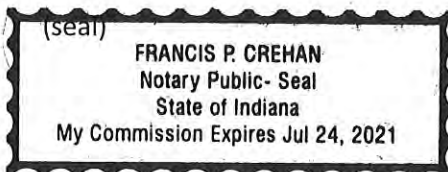
\_\_\_\_\_  
Notary Public in and for the state of Indiana

**Francis P. Crehan**

\_\_\_\_\_  
(Name printed)

Residing at Tampa, Florida

My appointment expires July 24, 2021













~~mutually acceptable to both parties and will sign the Agreement upon selection by the City.~~

I have submitted all Proposal Forms which are incorporated into this Proposal by this reference.

I further certify:

- A: that neither the Proposer nor any member of the Proposer's team is currently suspended or debarred from doing business with any government entity;
- B: that the Proposer has reviewed all of its engagements and pending engagements and that, in making this Proposal, no potential for conflict of interest or unfair advantage exists;
- C: that the information supplied by the Proposer in this Proposal is current, truthful and complete;

Having carefully examined the project documents comprising the RFP and all other documents bound therewith, together with all Addenda thereto, all information made available at the City, and being familiar with the work and the various conditions affecting the work, the undersigned hereby offers to furnish all plant, labor, materials, supplies, equipment and other facilities and things necessary or proper or incidental to the contract operations as required by and in strict accordance with the applicable provisions of this RFP and of all Addenda issued by the City and mailed to the undersigned prior to the date for operating proposals, whether received by the undersigned or not, for the Service Fee stated in the Proposal as elected to be implemented by the City and at the City's sole discretion.

I acknowledge receipt of addenda:

<u>NO.</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

I further warrant that no person or selling agency has been employed or retained to solicit or secure such Agreement upon an agreement or understanding for a commission, percentage, brokerage

or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by \_\_\_\_\_.

\_\_\_\_\_  
(Signature of Proposer)

**Note:** *If this Proposal is being submitted by a corporation, the Proposal shall be executed in the corporate name by the president or other corporate officer, and the corporate seal shall be affixed and attested to by the clerk. A certificate of the clerk of the corporation evidencing the officer's authority to execute the Proposal shall be attached.*

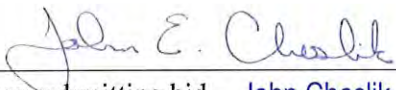






I HEREBY CERTIFY THAT I HAVE RECEIVED THE FOLLOWING ADDENDUM

ADDENDUM #'S ADDENDUM #1

  
\_\_\_\_\_  
Person submitting bid John Cheslik  
Senior Vice President

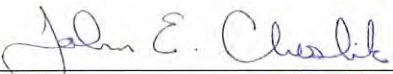
Veolia Water North America - Northeast, LLC  
\_\_\_\_\_  
Company Name

Please include this form with your bid if applicable.



I HEREBY CERTIFY THAT I HAVE RECEIVED THE FOLLOWING ADDENDUM

ADDENDUM #S ADDENDUM #2

  
Person submitting bid John Cheslik  
Senior Vice President

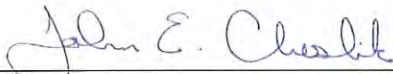
Veolia Water North America - Northeast, LLC  
Company Name

Please include this form with your bid if applicable.



I HEREBY CERTIFY THAT I HAVE RECEIVED THE FOLLOWING ADDENDUM

ADDENDUM #3  
ADDENDUM #'S \_\_\_\_\_

  
\_\_\_\_\_  
Person submitting bid John Cheslik  
Senior Vice President

Veolia Water North America - Northeast, LLC  
\_\_\_\_\_  
Company Name

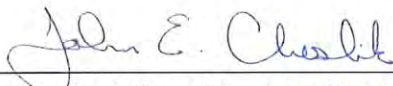
Please include this form with your bid if applicable.





I HEREBY CERTIFY THAT I HAVE RECEIVED THE FOLLOWING ADDENDUM

ADDENDUM #'S ADDENDUM #4

  
\_\_\_\_\_  
Person submitting bid **John Cheslik**  
**Senior Vice President**

Veolia Water North America - Northeast, LLC  
Company Name

Please include this form with your bid if applicable.



## **Section 5.0 – Proposal Forms**

### **Proposal Form 2 Guarantee**

**PROPOSAL FORM 2  
GUARANTEE**

Chief Procurement Officer  
City of New Bedford  
City Hall  
133 William Street  
New Bedford, MA 02740

Re: City of New Bedford  
Procurement for the Operation, Maintenance and Management of the  
Wastewater Treatment Facility

Dear Chief Procurement Officer:

The undersigned hereby represents to the City of New Bedford ("City") that if [Veolia Water North America – Northeast, LLC](#) (the "Proposer") is awarded the Service Agreement for the Operation, Maintenance and Management services ("Services") described in this RFP and outlined in the Service Agreement, the undersigned agrees to fully and unconditionally guarantee all obligations of whatever kind or nature of the Proposer to the City. Those matters which the undersigned will guarantee shall include, but shall not be limited to the following:

- All financial, payment, and performance obligations of the Proposer under the Service Agreement to be executed by the selected Contract Operator and the City.
- All obligations of the Proposer to perform the Services.
- All indemnification obligations of the Proposer to the City for any claims, losses, damages or liabilities arising out of any acts or omissions of the Proposer' its agents, contractors, subcontractors, and employees, in performing the Services in accordance with the Service Agreement.

Sincerely yours,



**Keith Oldewurtel**  
**Executive Vice President/Chief Operating Officer**  
(see attached signature authority – Certificate of Secretary)

**Veolia Water North America Operating Services, LLC**

Name of Firm



**CERTIFICATE OF ASSISTANT SECRETARY  
OF  
VEOLIA WATER NORTH AMERICA OPERATING SERVICES, LLC**

The undersigned, Whitney Fawcett, Assistant Secretary of Veolia Water North America Operating Services, LLC, a Delaware limited liability company (the "Company"), does hereby certify that Keith Oldewurtel is the duly elected and acting Executive Vice President and Chief Operating Officer of the Company and in such capacity is authorized to execute contracts and make commitments with regard to the following project:

**CONTRACT OPERATION, MAINTENANCE AND MANAGEMENT SERVICES  
OF THE CITY OF NEW BEDFORD'S WASTEWATER TREATMENT FACILITY  
CITY OF NEW BEDFORD, MASSACHUSETTS**

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Company this 20<sup>th</sup> day of January, 2020.

  
Whitney Fawcett, Assistant Secretary

SEAL



## **Section 5.0 – Proposal Forms**

### **Proposal Form 5 Key Project Staff (Resume Forms)**

**PROPOSAL FORM 5**  
**KEY PROJECT STAFF**

**GENERAL INFORMATION**

Name:	<u><b>John Caron</b></u>
Firm:	<u><b>Veolia Water North America - Northeast, LLC</b> (Current OM&amp;M contractor to the City of New Bedford.)</u>
Title:	<u><b>Project Manager, Operations &amp; Laboratory Manager, Permitting/Regulatory Leader</b></u>
Year employed by firm:	<u><b>36</b> (all of his career in the OM&amp;M industry)      <b>Years</b></u>
Wastewater professional experience:	<u><b>36</b> (including 18 years at the New Bedford WW operations project)      <b>Years</b></u>
Professional registration and Licenses (type/state/year):	<u>Grade 7C (Full) Wastewater Treatment Combined Domestic/Industrial Operator/Massachusetts/Current; Class IV Wastewater Treatment/Connecticut/Current; Grade IV Collections System Operator Certification/ New England Water Environment Association/Current</u>

**CITY OF NEW BEDFORD PROJECT-SPECIFIC INFORMATION**

Title / Assignment:	<u><b>Project Manager, Operations &amp; Laboratory Manager, Permitting/Regulatory Leader</b></u>
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**Description of Role/Responsibilities:**

Mr. Caron is the dedicated Project Manager for the ongoing operations, maintenance and management (OM&M) of the City of New Bedford’s 30-MGD secondary activated sludge wastewater treatment plant. He has worked at the operations since 2002 and also now holds the roles of Operations and Laboratory Manager and the Permitting and Regulatory Leader for this operation. Mr. Caron manages the OM&M team at this project, coordinates the work of Veolia’s regional and corporate support teams, and serves as the key point of contact responsibility for this project in working with the City of New Bedford.

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**REFERENCE PROJECT EXPERIENCE**

Project: **Contract Operation, Maintenance and Management (OM&M) Services - City of New Bedford’s Wastewater Treatment Facility**  
Mr. Caron serves as the Project Manager for the ongoing OM&M of the City’s 30-MGD Advanced Secondary Wastewater Treatment Plant; the exact facilities and operations covered under this RFP.

Location: **City of New Bedford, Massachusetts**

Current Status: **Ongoing OM&M Agreement – City and Veolia**

Dates of Involvement: From **2002** Through **Present**

Contact Person: **Jamie Ponte**

Title: Commissioner, City of New Bedford, Department of Public Infrastructure

Address: City of New Bedford - 1105 Shawmut Avenue, New Bedford, MA 02745

Phone: 508/979-1550

Fax: 508/961-3054

E-mail: jamie.ponte@newbedford-ma.gov

Project: **Contract Operation, Maintenance and Management (OM&M) Services – Town of Seymour, Connecticut’s Wastewater Treatment Facility and Pump Stations**  
Mr. Caron was the Project Manager for the Town’s 2.93-Advanced Secondary Wastewater Treatment Plant and 10 sewer pump/lift stations.

Location: **Town of Seymour, Connecticut**

Current Status: **Ongoing OM&M Agreement – Town and Veolia**

Dates of Involvement: From **2002** Through **Present**

Contact Person: **John Fonatto**

Title: Former - WPC Commissioner

Address: Town of Seymour - Seymour Town Hall, 1 First Street, Seymour, CT 06483

Phone: 203-888-6507

Fax: (None, as Mr. Fonatto is retired from the Town.)

E-mail: jafanotto@snet.net

Project: **Contract Operation, Maintenance and Management (OM&M) Services – City of West Haven, Connecticut’s Wastewater Treatment Facility and Pump Stations**

Mr. Caron was the Project Manager (1998-1999) and prior to that the Assistant Project Manager (1997-1998) for OM&M of the City’s 12.5-MGD Water Pollution Control Facility (conventional activated sludge treatment with single stage nitrification), 13 pumping stations and collection system maintenance.

Location: **City of West Haven, Connecticut**

Current Status: **OM&M agreement with the City was completed in 1999 with transition to new operator.**

Dates of Involvement: From 1997 Through 1999

Contact Person: **William Norton**

Title: Former - Contract Administrator – West Haven  
Currently Superintendent at the Town of Fairfield, Connecticut

Address: Current address/contact information reference for Mr. Norton.  
Town of Fairfield  
Water Pollution Control Facility  
330 Richard White Way, Fairfield, CT 06824

Phone: 203/256-3140

Fax: 203/256-3080

E-mail: c/o Carol Celone - Administrative Assistant -  
ccelone@fairfieldct.org

**PROPOSAL FORM 5**  
**KEY PROJECT STAFF**

**GENERAL INFORMATION**

Name:	<u><b>Kenneth Henrique</b></u>
Firm:	<u><b>Veolia Water North America - Northeast, LLC</b> (Current OM&amp;M contractor to the City of New Bedford.)</u>
Title:	<u><b>Maintenance Manager</b></u>
Year employed by firm:	<u><b>28</b></u> Years
Wastewater professional experience:	<u><b>38</b></u> Years
Professional registration and Licenses (type/state/year):	<u>Grade 7C (Full) Wastewater Treatment Combined Domestic/Industrial Operator/Massachusetts/Current; Grade 4 Wastewater Treatment Operator/Rhode Island/Current; and Grade IV Collections System Operator/ New England Water Environment Association/Current</u>

**CITY OF NEW BEDFORD PROJECT-SPECIFIC INFORMATION**

Title / Assignment:	<u><b>Maintenance Manager</b></u>
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Description of Role/Responsibilities:

Mr. Henrique is the dedicated Maintenance Manager for the ongoing operations, maintenance and management (OM&M) of the City of New Bedford’s 30-MGD secondary activated sludge wastewater treatment plant. He has worked at the operations since 2011 and now manages a dedicated maintenance team for repair, maintenance and capital program tasks. In this role, Mr. Henrique is responsible for coordinating tasks with the operations team to ensure that facilities and operations maintain availability and compliance.

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**REFERENCE PROJECT EXPERIENCE**

Project: **Contract Operation, Maintenance and Management (OM&M) Services - City of New Bedford’s Wastewater Treatment Facility**  
Mr. Henrique serves as the Maintenance Manager for the ongoing OM&M of the City’s 30-MGD Advanced Secondary Wastewater Treatment Plant; the exact facilities and operations covered under this RFP.

Location: **City of New Bedford, Massachusetts**

Current Status: **Ongoing OM&M Agreement – City and Veolia**

Dates of Involvement: From **2011** Through **Present**

Contact Person: **Jamie Ponte**

Title: Commissioner, City of New Bedford, Department of Public Infrastructure

Address: City of New Bedford - 1105 Shawmut Avenue, New Bedford, MA 02745

Phone: 508/979-1550

Fax: 508/961-3054

E-mail: jamie.ponte@newbedford-ma.gov

**Additional Contact for Performance at New Bedford:**

Contact Person: **James Ricci**

Title: City Liaison (retired)

Address: City of New Bedford - 1105 Shawmut Avenue, New Bedford, MA 02745

Phone: 508/958-8952

Fax: 508/961-3054

E-mail: james.ricci@newbedford-ma.gov

Project: **Contract Operation, Maintenance and Management (OM&M) Services – City of Woonsocket, Rhode Island’s Wastewater Treatment Facility and Sewer Pump Stations**

Mr. Henrique was the Assistant Project Manager and Maintenance Manager for the City’s 16-MGD tertiary wastewater treatment plant. Directed the repair and maintenance of all treatment plant equipment and the maintenance for seven sewer pumping stations.

---

Location: **City of Woonsocket, Rhode Island**

Current Status: **Completed OM&M Agreement – City and Veolia**

Dates of Involvement: From **2006** Through **2009**

Contact Person: **Adel Banoub**

Title: Contract Administrator

Address: City of Woonsocket - Woonsocket Regional Wastewater Commission - 11 Cumberland Hill Road, Woonsocket, RI 02895

Phone: 401/766-0555

Fax: 401/766-6912

Project: **Contract Operation, Maintenance and Management (OM&M) Services – City of Fall River’s Wastewater Treatment Facility and Pump Stations, Massachusetts**

Mr. Henrique worked as the Assistant Project Manager and in other roles for the OM&M of the City’s 30.9-MGD pure oxygen secondary wastewater plant and 17 sewer pump stations (ranging in size up to 54-MGD).

---

Location: **City of Fall River, Massachusetts**

Current Status: **Ongoing OM&M Agreement – City and Veolia**

Dates of Involvement: From **1982** Through **1999**

**PROPOSAL FORM 5**  
**KEY PROJECT STAFF**

**GENERAL INFORMATION**

Name:	<b>Collis Soares</b>
Firm:	<b>Veolia Water North America - Northeast, LLC</b> (Current OM&M contractor to the City of New Bedford.)
Title:	<b>Lead Chief Operator/ Operator III</b>
Year employed by firm:	<b>9 (since 2011)</b> Years
Wastewater professional experience:	<b>9 (all working with Veolia at the New Bedford Wastewater Operations)</b> Years
Professional registration and Licenses (type/state/year):	Grade 7-C (Full) Wastewater Treatment Plant Operator/ Massachusetts/Current

**CITY OF NEW BEDFORD PROJECT-SPECIFIC INFORMATION**

Title / Assignment:	<b>Lead Chief Operator/Operator III New Bedford Wastewater Plant</b>
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Description of Role/Responsibilities:

Mr. Soares is the dedicated Lead Chief Operator and works with Veolia’s Project Manager at the New Bedford wastewater treatment plant for the ongoing operations, maintenance and management (OM&M) of the City of New Bedford’s 30-MGD secondary activated sludge wastewater treatment plant.

Mr. Soares has worked at the operations since 2011 and now works with Veolia’s Project Manager to direct the day-to-day operations of the wastewater treatment plant. In this role, he has specific responsibility for managing an operations team consisting of Chief Operators and Operators that support the day-to-day operations of the wastewater plant; the scheduling of operations tasks, including preventive maintenance (PM) and corrective maintenance tasks (CM); coordinating tank cleaning and inspections; scheduling equipment isolation and shut down for maintenance tasks; reporting and other communications for operations related tasks; as well as for maintaining, inspecting and calibrating process monitoring equipment (chlorine meter, bisulfite meter and turbidity meter).

---

**REFERENCE PROJECT EXPERIENCE**

Project: **Contract Operation, Maintenance and Management (OM&M) Services - City of New Bedford’s Wastewater Treatment Facility**  
Mr. Soares serves as the Lead for the ongoing OM&M of the City’s 30-MGD Advanced Secondary Wastewater Treatment Plant; the exact facilities and operations covered under this RFP.

Location: **City of New Bedford, Massachusetts**

Current Status: **Ongoing OM&M Agreement – City and Veolia**

Dates of Involvement: From **2011** Through **Present**

Contact Person: **Jamie Ponte**

Title: Commissioner, City of New Bedford, Department of Public Infrastructure

Address: City of New Bedford - 1105 Shawmut Avenue, New Bedford, MA 02745

Phone: 508/979-1550

Fax: 508/961-3054

E-mail: jamie.ponte@newbedford-ma.gov

**Additional Contact for Performance at New Bedford:**

Contact Person: **James Ricci**

Title: City Liaison (retired)

Address: City of New Bedford - 1105 Shawmut Avenue, New Bedford, MA 02745

Phone: 508/958-8952

Fax: 508/961-3054

E-mail: james.ricci@newbedford-ma.gov



**PROPOSAL FORM 5**  
**KEY PROJECT STAFF**

**GENERAL INFORMATION**

Name: **Robert Arruda**

Firm: **Veolia Water North America - Northeast, LLC**  
(Current OM&M contractor to the City of New Bedford.)

Title: **Odor and Noise Control Technician**

Year employed by firm: **27** (since 1993) Years

Wastewater professional experience: **27** (all working with Veolia at the New Bedford Wastewater Operations) Years

Professional registration and Licenses (type/state/year): Grade 6C Wastewater Treatment Plant Operator/ Massachusetts/Current

**CITY OF NEW BEDFORD PROJECT-SPECIFIC INFORMATION**

Title / Assignment: **Odor and Noise Control Technician**

Description of Role/Responsibilities:

Mr. Arruda is the dedicated Odor and Noise Control Technician and works with Veolia’s Project Manager at the New Bedford wastewater treatment plant for the ongoing operations, maintenance and management (OM&M) of the 30-MGD secondary activated sludge wastewater treatment plant.

Mr. Arruda has worked at the City’s wastewater operations for 27 years and is now part of the Operation Team at the plant. That team works with Veolia’s Project Manager and Lead Chief Operator in supporting the day-to-day operations of the wastewater treatment plant.

Mr. Arruda has specific responsibility for operations tasks, including: coordinating odor and noise control programs; monitoring the operations of odor and noise control systems; as well as for tracking, investigating and reporting on odor and noise complaints related to the wastewater operations in support of Veolia’s the zero tolerance odor control program at New Bedford.

---

**REFERENCE PROJECT EXPERIENCE**

Project: **Contract Operation, Maintenance and Management (OM&M) Services - City of New Bedford’s Wastewater Treatment Facility**  
Mr. Arruda serves as the Odor and Noise Control Technician for the ongoing OM&M of the City’s 30-MGD Advanced Secondary Wastewater Treatment Plant; the exact facilities and operations covered under this RFP.

Location: **City of New Bedford, Massachusetts**

Current Status: **Ongoing OM&M Agreement – City and Veolia**

Dates of Involvement: From **1993** Through **Present**

Contact Person: **Jamie Ponte**

Title: Commissioner, City of New Bedford, Department of Public Infrastructure

Address: City of New Bedford - 1105 Shawmut Avenue, New Bedford, MA 02745

Phone: 508/979-1550

Fax: 508/961-3054

E-mail: jamie.ponte@newbedford-ma.gov

**Additional Contact for Performance at New Bedford:**

Contact Person: **James Ricci**

Title: City Liaison (retired)

Address: City of New Bedford - 1105 Shawmut Avenue, New Bedford, MA 02745

Phone: 508/958-8952

Fax: 508/961-3054

E-mail: james.ricci@newbedford-ma.gov



## **Section 5.0 – Proposal Forms**

### **Insurance Certificate (sample)**







**ADDITIONAL REMARKS SCHEDULE**

<b>AGENCY</b> Marsh USA, Inc.		<b>NAMED INSURED</b> Veolia Water North America - Northeast, LLC 53 State Street, 14th Floor Boston, MA 02109	
<b>POLICY NUMBER</b>		<b>EFFECTIVE DATE:</b>	
<b>CARRIER</b>	<b>NAIC CODE</b>		

**ADDITIONAL REMARKS**

**THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,**  
**FORM NUMBER: 25 FORM TITLE: Certificate of Liability Insurance**

Workers Compensation (Cont.)

Carrier: Insurance Company of the State of Pennsylvania  
 Policy Number: WC 046-91-2805 (MA, ND, OH, WA, WI, WY)  
 Effective Date: 01/01/2020  
 Expiration Date: 01/01/2021  
 Limit: SEE ABOVE

Carrier: American Home Assurance (NAIC # 19380)  
 Policy Number: WC 046-91-2806 (CA)  
 Effective Date: 01/01/2020  
 Expiration Date: 01/01/2021  
 Limit: SEE ABOVE

06

Supplemental Information



# 6.0

## Supplemental Information

The Supplemental Information submitted in this section supports and expands on the experience, qualifications and financial capability of our firm to perform the proposed services. This information also addresses project staffing information, with resumes for our key staff, and the information presented on Proposal Forms (Section 5.0). This information includes:

- **Resumes**
  - Summary Resume List for Management and OM&M Team at New Bedford
  - Detailed, long-form, resumes for key OM&M and Support staff.
- **Staff Licenses**
  - Copies of Massachusetts Wastewater Operator and Other Licenses held by Veolia OM&M team staff at New Bedford.
- **Reference Projects – Additional Detail**
  - Detailed Summaries for Reference Projects.
- **Supplemental Technical Materials**
  - New Bedford Specific Plans: SOP for Odor Control Plan; Natural Disaster, Hurricane & Tropical Storm Preparedness Plan (Excerpt); Emergency Action Plan
  - Pump Station Operations Procedures and Plans (Taunton, MA - operations)
- **Financial Statements**
  - This attachment, as noted on Proposer Qualifications Form (Section 5.0), provides Financial Statements for Veolia North America, Inc. the parent holding company for Veolia Water North America – Northeast, LLC (the Proposer) and Veolia Water North America Operating Services, LLC (Parent Company and Guarantor). The financial data for our company is consolidated and reported on at this level, and the information does not have revenue from operations, as the holding entity principally generates its pre-tax income from the interest income generated from loans to its subsidiaries as well as dividends paid from its subsidiaries.
  - The 2018 results presented, as noted, are draft numbers as the audit is the process of being completed. Final 2018 audited statements for Veolia North America, Inc. will be provided once. The 2016 and 2017 audited financial statements for Veolia North America, Inc., are provided with this Proposal, along with the draft audit 2018 financial statements.

These materials are presented in the pages that follow, indexed as noted above.





## **Section 6.0 – Supplemental Information**

### **Resumes**

- Resume Summary List**
- Detailed Resumes**



## Section 6: Supplemental Information

### Resume Summary Information

**Veolia Team – New Bedford Wastewater Operations - Resume Summary Table**

Name/Title	Job & Project Responsibilities	Experience/Education/Licenses/Certifications
<p><b>Darlene Domingos</b> <i>Project Director/ Vice President of Operations</i></p>	<ul style="list-style-type: none"> <li>• Reports to Veolia’s Principal-in-Charge for Northeast region operations</li> <li>• Oversees Veolia’s operations and projects in Massachusetts, including the New Bedford O&amp;M partnership</li> <li>• Supervisor/corporate manager for Veolia’s O&amp;M team at New Bedford</li> <li>• Responsible for project performance and compliance</li> <li>• Ensures commitment of resources to projects/operations</li> <li>• Key point of contact/accountability for the City of New Bedford under this long-term O&amp;M partnership</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 1994 and became the Operations Vice President in 2015, with responsibility for the New Bedford O&amp;M partnership</li> <li>• 32 years of overall water and wastewater O&amp;M experience, and former Veolia Project Manager for wastewater operations at Brockton and Taunton</li> <li>• <u>Education/Training</u>: Veolia and other Operations, Safety and Management training courses; Pipeline Assessment Training and Certification, National Association of Sewer Services Companies (NASSCO) training; BS, Biology, University of Massachusetts</li> <li>• <u>Licenses/Certifications</u>: Massachusetts, Grade 7, Wastewater Treatment Operator and Grade 2 (OIT) Water Treatment Operator; Grade 4 Collection System Operator, New England Water Environment Association</li> </ul>
<p><b>John Caron</b> <i>Project Manager (with additional responsibility as Operations/ Laboratory Manager and Permitting &amp; Regulatory Leader)</i></p>	<ul style="list-style-type: none"> <li>• Reports to Veolia’s Project Director</li> <li>• Manages the operations and teams, for the wastewater operations</li> <li>• Responsible for overseeing operations, employees, budget (O&amp;M and LIMIT) for the wastewater facilities operations and maintenance.</li> <li>• Serves as the direct point of contact for City of New Bedford’s managers and other project stakeholders</li> <li>• Ensures safety and compliance in all aspects of the operations</li> <li>• Procures and recommends capital projects with City approval.</li> <li>• Manages Operations Team, including Operators, Laboratory Technicians and Odor and Noise Technician</li> <li>• Manages permitting support and regulatory compliance for wastewater operations: NPDES, Tier II, Source Registration.</li> </ul>	<ul style="list-style-type: none"> <li>• Project Manager at the New Bedford 30-MGD wastewater plant since 2002 -- operations recognized with awards including National Association of Clean Water Agencies Peak Performance Award (Gold) for operations/regulatory compliance</li> <li>• 35 years of overall wastewater operations experience, all working with Veolia at wastewater plants in New England, with qualifying experience including New Bedford and Fall River, MA (30.9-MGD treatment plant and 17 pump stations) and West Haven, CT (12.5-MGD wastewater plant and 13 pump stations)</li> <li>• <u>Education/Training</u>: Veolia and other training course in Safety, O&amp;M practices, Project Management and Business Practices; BS degree in Marine Biology, University of Massachusetts; and Massachusetts Department of Environmental Protection approved training in Basic Hydraulics and BNR Process Control and Troubleshooting</li> <li>• <u>Licenses/Certifications</u>: Massachusetts, Grade 7C (Full) Wastewater Treatment Combined Domestic/Industrial Operator Certification; Connecticut Class IV Wastewater Treatment; New England Water Environment Association Grade IV Collections System Operator Certification</li> </ul>
<p><b>Kenneth Henrique</b> <i>Maintenance</i></p>	<ul style="list-style-type: none"> <li>• Reports to Veolia’s Project Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Worked with Veolia for over 28 years and has worked at part of the O&amp;M team at New Bedford</li> </ul>

**Veolia Team – New Bedford Wastewater Operations - Resume Summary Table**

Name/Title	Job & Project Responsibilities	Experience/Education/Licenses/Certifications
<p><b>Manager</b></p>	<p>at New Bedford</p> <ul style="list-style-type: none"> <li>• Manages Maintenance Team, including Veolia staff, regional and corporate support staff, as well as any the work of any contractors retained for maintenance and repair tasks at the wastewater plant</li> <li>• Oversees maintenance operations, budget, schedule and employees for the wastewater facilities/operations</li> <li>• Serves as key contact for the City of New Bedford’s managers on capital and maintenance work</li> </ul>	<p>since 2011, with responsibility for managing the maintenance team</p> <ul style="list-style-type: none"> <li>• 38 years of overall wastewater work experience, with qualifying experience including New Bedford (30-MGD treatment plant) and Fall River, MA (30.9-MGD treatment plant and 17 pump stations), and Woonsocket, RI (16-MGD treatment plant)</li> <li>• <u>Education/Training</u>: Safety, Maintenance, Management and other related training with Veolia; and other education and training, including AEGIS shaft bearing voltage training, Confined Space Entry</li> <li>• <u>Licenses/Certifications</u>: Massachusetts, Grade 7C (Full) Wastewater Treatment Combined Domestic/Industrial Operator Certification; Rhode Island Grade 4 Wastewater Treatment Operator; New England Water Environment Association Grade IV Collections System Operator Certification; and NASSCO PACP (Pipeline Assessment) and MACP (Manhole Assessment) Certification, Confined Space Entry Certification</li> </ul>
<p><b>Collis Soares</b> <i>Lead Chief Operator/ Operator III</i></p>	<ul style="list-style-type: none"> <li>• Reports to Project Manager and provides leadership for the day-to-day operations of wastewater plant</li> <li>• Supervises the work of Operators (Operators III, II and I) and Laboratory Technicians</li> <li>• Schedules operations tasks such as includes tank cleaning and inspections, equipment isolation and shut down for maintenance</li> <li>• Responsible for reporting and other communications/operations tasks</li> <li>• Maintains/inspects/calibrates process monitoring equipment, including g chlorine meter, bisulfite meter and turbidity meter</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 2011 and has worked at the New Bedford 30-MGD wastewater operations for nine years in progressively responsible roles -- starting as an Operator, then Operator II, the Chief Operator, and then Lead Chief Operator</li> <li>• <u>Education/Training</u>: Veolia safety, operations and management training; Massachusetts Department of Environmental Protection approved training courses in Basic Hydraulics and BNR Process Control &amp; Troubleshooting; and Sacramento Water and Wastewater operations courses</li> <li>• <u>License/Certification</u>: Massachusetts, Grade 7C (Full) Wastewater Treatment Operator</li> </ul>
<p><b>Robert Arruda</b> <i>Odor &amp; Noise Technician and Site Safety Officer</i></p>	<ul style="list-style-type: none"> <li>• Reports to Project Manager, with responsibility for directing the odor and noise control programs and operations at the wastewater plant</li> <li>• Monitors and maintains operations of odor and noise control systems</li> <li>• Tracks, investigates and reports on odor and noise complaints</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 1993 and has worked at the New Bedford wastewater operations since then; part of the original operations team at startup of the upgraded plant, which was placed in service August 1996</li> <li>• 27 years of overall wastewater O&amp;M experience at New Bedford, including 19 years working as the Site Safety Officer, and 21 years working as on-</li> </ul>

**Veolia Team – New Bedford Wastewater Operations - Resume Summary Table**

Name/Title	Job & Project Responsibilities	Experience/Education/Licenses/Certifications
	supporting the zero tolerance program to odors <ul style="list-style-type: none"> <li>• Coordinates safety training and compliance activities</li> <li>• Reports independently to Veolia’s Corporate Safety Manager and Project Manager on safety issues</li> </ul>	site Odor and Noise Control Technician <ul style="list-style-type: none"> <li>• <u>Education/Training</u>: Veolia training courses in safety, operations and business standards; Massachusetts Department of Environmental Protection approved training courses in Basic Hydraulics and BNR Process Control &amp; Troubleshooting; and New Bedford Vocational Tech courses</li> <li>• <u>License/Certification</u>: Massachusetts, Grade 6C Wastewater Treatment Operator</li> </ul>
<b>Sandra Rousseau</b> <i>Office Manager/                      Administrative Assistant</i>	<ul style="list-style-type: none"> <li>• Reports to Project Manager and supports procurement, accounting and scheduling tasks for laboratory, maintenance and other treatment plant operations.</li> <li>• Manages Human Resources and other corporate support functions for the operations</li> </ul>	<ul style="list-style-type: none"> <li>• Joined the Veolia O&amp;M team at New Bedford in 2017</li> <li>• 36 years of related work experience in business office operations and management</li> <li>• <u>Education/Training</u>: College level training in Business Operations and Veolia Safety, Compliance, Ethics and other training.</li> </ul>
<b>Phillip Hannink</b> <i>Chief Operator/                      Operator III</i>	<ul style="list-style-type: none"> <li>• Reports to Project Manager and Lead Chief Operator</li> <li>• As Chief Operator is in direct responsible charge of facility operations for the evening (11 PM-7 AM) work shift</li> <li>• Responsible for coordinating safety and compliance</li> <li>• Responsible for reporting and other communications/operations related tasks</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 1995 and has worked at the New Bedford wastewater operations in progressively responsible roles, starting as an Operator II, and promoted to Chief Operator in 2002</li> <li>• <u>Education/Training</u>: Veolia training courses in safety, operations and business standards; and Massachusetts Department of Environmental Protection approved training courses in Basic Hydraulics and BNR Process Control &amp; Troubleshooting.</li> <li>• <u>License/Certification</u>: Massachusetts, Grade 7C (Full) Wastewater Treatment Operator</li> </ul>
<b>Connor Riley</b> <i>Chief Operator/                      Operator III</i>	<ul style="list-style-type: none"> <li>• Reports to Project Manager and Lead Chief Operator</li> <li>• As Chief Operator is in direct responsible charge of facility operations during the “swing” work shift</li> <li>• Responsible for coordinating safety and compliance</li> <li>• Responsible for reporting and other communications/operations tasks</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 2016 and has worked at the New Bedford wastewater operations in progressively responsible roles, starting as an Operator I, then Operator II and now Chief Operator</li> <li>• <u>Education/Training</u>: Veolia safety, operations and management training</li> <li>• <u>Licenses/Certifications</u>: Massachusetts, Grade 6-C OT Wastewater Treatment Plant Operator and Grade 4 M OT Wastewater Treatment Plant Operator</li> </ul>
<b>Christopher Rizzuto</b> <i>Chief Operator/                      Operator III</i>	<ul style="list-style-type: none"> <li>• Reports to Project Manager and Lead Chief Operator</li> <li>• Manages an operations team to support the day-to-day operations of the wastewater plant</li> <li>• Responsible for coordinating safety</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 1995 and has worked at the New Bedford wastewater operations in progressively responsible operations roles</li> <li>• <u>Education/Training</u>: Veolia training courses in safety, operations and business standards; and Massachusetts Department of Environmental</li> </ul>

**Veolia Team – New Bedford Wastewater Operations - Resume Summary Table**

Name/Title	Job & Project Responsibilities	Experience/Education/Licenses/Certifications
	and compliance <ul style="list-style-type: none"> <li>Responsible for reporting and other communications/operations tasks</li> </ul>	Protection approved training courses in Basic Hydraulics and BNR Process Control & Troubleshooting <ul style="list-style-type: none"> <li><u>License/Certification</u>: Massachusetts, Grade 7C (Full) Wastewater Treatment Operator</li> </ul>
<b>Albert Santos, Jr.</b> <i>Chief Operator/ Operator III</i>	<ul style="list-style-type: none"> <li>Reports to Project Manager and Lead Chief Operator</li> <li>Manages an operations team to support the day-to-day operations of the wastewater plant</li> <li>Responsible for coordinating safety and compliance</li> <li>Responsible for reporting and other communications/operations related tasks</li> </ul>	<ul style="list-style-type: none"> <li>Joined Veolia in 2005 and has worked at the New Bedford wastewater operations in progressively responsible roles; promoted to Chief Operator in 2018</li> <li><u>Education/Training</u>: Veolia training courses in safety, operations and business standards; and Massachusetts Department of Environmental Protection approved training courses in Basic Hydraulics and BNR Process Control &amp; Troubleshooting</li> <li><u>License/Certification</u>: Massachusetts, Grade 7C (Full) Wastewater Treatment Operator</li> </ul>
<b>Stephen Duckworth</b> <i>Operator II</i>	<ul style="list-style-type: none"> <li><u>Operators</u>:                             <ul style="list-style-type: none"> <li>Reports to Project Manager and Lead Chief Operator</li> <li>Responsible for performing the day-to-day operations tasks</li> <li>Responsible for sampling and related compliance tasks</li> <li>Supports reporting and tracking activities for the operations</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Joined Veolia in 2001 and has worked at the New Bedford wastewater operations in progressively responsible roles; starting as a Utility Worker, then Operator I and the Operator II</li> <li><u>Education/Training</u>: AS degree, Refrigeration, New England Tech; Veolia training courses in safety, operations and business standards; and Massachusetts Department of Environmental Protection approved training courses in Basic Hydraulics and BNR Process Control &amp; Troubleshooting</li> <li><u>License/Certification</u>: Massachusetts, Grade 4M OT Wastewater Treatment Operator</li> </ul>
<b>Aaron Alferes</b> <i>Operator II</i>		<ul style="list-style-type: none"> <li>Joined Veolia in 2018, starting as an Operator I and in 2019 was promoted to the role of Operator II</li> <li><u>Education/Training</u>: Veolia training courses in safety, operations and business standards; and Massachusetts Department of Environmental Protection approved training course in Basic Hydraulics</li> <li><u>License/Certification</u>: Massachusetts, Grade 4M OT Wastewater Treatment Operator</li> </ul>
<b>Gregory Medeiros</b> <i>Operator II</i>		<ul style="list-style-type: none"> <li>Joined Veolia in 2014 and has worked at the New Bedford wastewater operations in progressively responsible roles, starting as a Utility Worker, then Operator I and then Operator II</li> <li><u>Education/Training</u>: MTTI Maintenance courses; Veolia training courses in safety, operations and business standards; and Massachusetts Department of Environmental Protection</li> </ul>



**Veolia Team – New Bedford Wastewater Operations - Resume Summary Table**

Name/Title	Job & Project Responsibilities	Experience/Education/Licenses/Certifications
<p><b>Kevin Costa</b> <i>Operator II</i></p>		<p>approved training course in Basic Hydraulics</p> <ul style="list-style-type: none"> <li>• <u>Licenses/Certifications</u>: Massachusetts, Grade 6C (Full) Wastewater Treatment Operator and Grade 4M OT Wastewater Treatment Operator</li> <li>• Joined Veolia in 2017 and has worked at the New Bedford wastewater operations in progressively responsible roles, starting as a Utility Worker, then Operator I and then Operator II</li> <li>• <u>Education/Training</u>: Veolia training courses in safety, operations and business standards</li> <li>• <u>License/Certification</u>: Massachusetts Grade 4M OT Wastewater Treatment Operator</li> </ul>
<p><b>Evan Theriault</b> <i>Operator I</i></p>		<ul style="list-style-type: none"> <li>• Joined the Veolia team at New Bedford in 2019</li> <li>• Additional experience working as a Laboratory Analyst at a commercial water testing laboratory</li> <li>• <u>Education/Training</u>: Veolia training courses in safety, operations and business standards</li> </ul>
<p><b>Kathleen Lambalot</b> <i>Laboratory Technician</i></p>	<ul style="list-style-type: none"> <li>• <u>Laboratory Technicians</u>: <ul style="list-style-type: none"> <li>• Report to Project Manager and Lead Chief Operator</li> <li>• Coordinate and manage the work of the on-site laboratory at the wastewater plant</li> <li>• Manage and coordinate the work of contract laboratories</li> <li>• Responsible for sample analysis and reporting</li> </ul> </li> <li>• Support the Project Manager with regulatory and compliance reporting</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 1992 and has worked at the New Bedford wastewater operations since then</li> <li>• 28 years of overall wastewater O&amp;M experience</li> <li>• <u>Education/Training</u>: Veolia training courses in safety, operations and business standards; and Massachusetts Department of Environmental Protection approved training course in Basic Hydraulics</li> <li>• <u>License/Certification</u>: Massachusetts Grade 4M OT Wastewater Treatment Operator</li> </ul>
<p><b>Dominic Galotti</b> <i>Laboratory Technician</i></p>		<ul style="list-style-type: none"> <li>• Joined Veolia in 2012 and has worked at the New Bedford wastewater operations in progressively responsible roles, starting as an Operator I, then Laboratory Technician I and then Laboratory Technician II</li> <li>• <u>Education/Training</u>: Veolia training courses in safety, operations and business standards; and Massachusetts Department of Environmental Protection approved training course in Basic Hydraulics</li> <li>• <u>License/Certification</u>: Massachusetts, Grade 6C OT Wastewater Treatment Operator</li> </ul>
<p><b>Randall Mendoza</b> <i>Lead Maintenance Technician/ Maintenance Technician III</i></p>	<ul style="list-style-type: none"> <li>• Reports to Maintenance Manager</li> <li>• Supervises the day-to-day repair and maintenance tasks, including managing the work of the Maintenance Technicians and Utility Works</li> <li>• Supports the Maintenance Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 1996 and has worked at the New Bedford wastewater operations since then</li> <li>• <u>Education/Training</u>: Massachusetts Contractors Academy Hoisting License training; and Veolia training courses in safety, maintenance practices and business standards</li> <li>• <u>License/Certification</u>: Massachusetts Licensed</li> </ul>

**Veolia Team – New Bedford Wastewater Operations - Resume Summary Table**

Name/Title	Job & Project Responsibilities	Experience/Education/Licenses/Certifications
	with budget, scheduling and with coordinating/managing the work of any contractors retained for maintenance and repair work at the wastewater plant	Hoisting Engineer
<b>Albert Santos, III</b> <i>Maintenance Technician II</i>	<ul style="list-style-type: none"> <li>• <u>Maintenance Technicians:</u></li> <li>• Report to Veolia’s Lead Maintenance Technician</li> <li>• Perform the work of day-to-day repair and maintenance tasks</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 2004 and has worked at the New Bedford wastewater operations since that time</li> <li>• <u>Education/Training:</u> Veolia training courses in safety, maintenance practices and business standards</li> </ul>
<b>Jeffrey Costello</b> <i>Maintenance Technician II</i>	<ul style="list-style-type: none"> <li>• Coordinate with and support the work of the Operations staff, as well as the work of any support contractors retained for maintenance and repair work at the wastewater plant</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 2000 and has worked at the New Bedford wastewater operations since that time</li> <li>• <u>Education/Training:</u> Veolia training courses in safety, maintenance practices and business standards</li> </ul>
<b>Ronald Giusti</b> <i>Maintenance Technician II</i>		<ul style="list-style-type: none"> <li>• Joined Veolia in 1996 and has worked at the New Bedford wastewater operations since that time</li> <li>• <u>Education/Training:</u> Veolia training courses in safety, maintenance practices and business standards</li> </ul>
<b>Joe Martins</b> <i>Maintenance Technician II</i>		<ul style="list-style-type: none"> <li>• Joined Veolia in 2015 and has worked at the New Bedford wastewater operations since that time</li> <li>• <u>Education/Training:</u> Veolia training courses in safety, maintenance practices and business standards</li> </ul>
<b>John Rego</b> <i>Maintenance Technician II</i>		<ul style="list-style-type: none"> <li>• Joined Veolia in 2001 and has worked at the New Bedford wastewater operations since that time</li> <li>• <u>Education/Training:</u> Veolia training courses in safety, maintenance practices and business standards</li> <li>• <u>License/Certification:</u> Massachusetts Hoisting Engineer License</li> </ul>
<b>Chad Rudolph</b> <i>Utility Worker</i>	<ul style="list-style-type: none"> <li>• <u>Utility Workers:</u></li> <li>• Report to Veolia’s Lead Maintenance Technician</li> <li>• Support the work of day-to-day repair and maintenance tasks</li> </ul>	<ul style="list-style-type: none"> <li>• Joined the Veolia team at New Bedford in 2019</li> <li>• <u>Education/Training:</u> Veolia training courses in safety, maintenance practices and business standards</li> </ul>
<b>Kevin Isabelle</b> <i>Utility Worker &amp; Operator II</i>	<ul style="list-style-type: none"> <li>• Coordinates with and supports the work of the Operations staff, as well as the work of any support contractors retained for maintenance and repair work at the wastewater plant</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 2000 and has worked at the New Bedford wastewater operations since that time</li> <li>• <u>Education/Training:</u> Veolia training courses in safety, maintenance practices and business standards</li> <li>• <u>License/Certification:</u> Massachusetts Grade 6C (Full) Wastewater Treatment Operator</li> </ul>
<b>James Salley</b> <i>Utility Worker</i>		<ul style="list-style-type: none"> <li>• Joined Veolia in 2001 and has worked at the New Bedford wastewater operations since that time</li> </ul>

**Veolia Team – New Bedford Wastewater Operations - Resume Summary Table**

Name/Title	Job & Project Responsibilities	Experience/Education/Licenses/Certifications
		<ul style="list-style-type: none"> <li>• <u>Education/Training</u>: Veolia training courses in safety, maintenance practices and business standards</li> </ul>
<p><b>David Oliveira</b> <i>Electrician/ Instrumentation Technician</i></p>	<ul style="list-style-type: none"> <li>• <u>Electricians</u>:                             <ul style="list-style-type: none"> <li>• Report to Veolia’s Maintenance Manager</li> <li>• Support the work of day-to-day repair and maintenance tasks in the area of electrical, and instrumentation and control (I&amp;C) systems</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 1999 and has worked at the New Bedford wastewater operations since that time</li> <li>• <u>Education/Training</u>: Veolia training courses in safety, maintenance and operations practices and business standards</li> <li>• <u>License/Certification</u>: Massachusetts Licensed Journeyman Electrician</li> </ul>
<p><b>Michael Medeiros</b> <i>Electrician/ Instrumentation Technician</i></p>	<ul style="list-style-type: none"> <li>• Coordinate with and supports the work of the Operations staff, as well as the work of any support contractors retained for electrical and I&amp;C related maintenance and repair work at the wastewater plant</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Veolia in 2006 and has worked at the New Bedford wastewater operations since that time</li> <li>• <u>Education/Training</u>: Veolia training courses in safety, maintenance and operations practices and business standards</li> <li>• <u>Licenses/Certifications</u>: Massachusetts Licensed Master Electrician and Journeyman Electrician</li> </ul>



**John Caron**  
**Project Manager – New Bedford, MA**  
**Veolia Water North America – Northeast, LLC**

**36 years**  
total experience

**36 years**  
with Veolia

**Professional Background:**

Mr. Caron is a Project Manager III with Veolia Water North America – Northeast, LLC (Veolia) for the ongoing wastewater facilities operations, maintenance and management (OM&M) contract with the City of New Bedford, Massachusetts. Under this ongoing OM&M, now in its 29<sup>th</sup> year, he manages a dedicated site team and has additional responsibility as the Operations Manager, Laboratory Manager and Permitting & Regulatory Leader.

Mr. Caron has spent his entire 35 year career working with Veolia (and predecessor companies) in Massachusetts and New England, involved in the operation and maintenance of wastewater treatment facilities and collection systems. He joined the OM&M team at New Bedford in 2002, and previously worked at the plant in 1997 (as a Process Specialist).

Prior to joining the OM&M team at New Bedford, Mr. Caron worked as an Operator and Shift Supervisor at the 30.9-MGD pure oxygen advanced secondary wastewater treatment plant in Fall River and as Lead Operator, Assistant Project Manager and Project Manager for other wastewater operations in Massachusetts and Connecticut. He has particular experience with operating and maintaining various process equipment and appurtenances, as well as a possessing a thorough knowledge in the process control of secondary activated sludge treatment facilities.

**Qualifying Project Experience:**



**Wastewater OM&M Management – City of New Bedford, Massachusetts**

- Project Manager, since 2002, for operation and management of the City’s 30-MGD (peak 75 MGD) secondary activated sludge wastewater treatment plant. Manages the dedicated OM&M team for wastewater process control, sludge processing and disposal for 6,500 dry tons per year of biosolids, and maintenance and capital programs. Under Mr. Caron’s management the operations have been recognized with awards including National Association of Clean Water Agencies Peak Performance Award (Gold) for operations/regulatory compliance and a Silver Award for performance from the Association of Metropolitan Sewerage Agencies.



**Wastewater OM&M Management – Town of Seymour, Connecticut**

- Project Manager (1999-2002) for the Town’s 2.97-MGD secondary activated sludge wastewater treatment plant, including plant operations, collection system, 10 sewer pump/lift stations, two siphons, mark-outs, easement maintenance and sewer inspections. Project scope included managing billing and collection operations covering 3,500 sewer use accounts and 450 sewer assessment accounts. (Project is ongoing under an OM&M agreement with Veolia.)



**Wastewater OM&M Management – City of West Haven, Connecticut**

- Project Manager (1998-1999) and Assistant Project Manager (1997-1998) for a completed OM&M contract covering the City’s 12.5-MGD Water Pollution Control Facility (conventional activated sludge treatment with single stage nitrification), 13 sewer pump stations and collection system maintenance. The facility used an on-site fluidized bed incinerator for sludge disposal. The West Haven Facility and collection system was an extremely maintenance-intensive project during this time period.

**Education/Training:**

BS, Marine Biology, University of Massachusetts, 1983  
 Veolia OM&M, Project Management, Business and Other Training

**Licenses/Certifications:**

Massachusetts, Grade 7C (Full) Wastewater Treatment Combined Domestic/Industrial Operator; Connecticut, Class IV Wastewater Treatment Operator; New England Water Environment Association Grade IV Collections System Operator



**Current and Past Relevant Experience/Work History:**

- **2002-Present: Project Manager - Veolia Water North America – Northeast, LLC – New Bedford, Massachusetts**
    - Responsible for the OM&M of the City's 30-MGD (peak 75-MGD) secondary wastewater treatment plant. Directs the day-to-day operations, process control, sludge processing and disposal for 6,500 dry tons per year of biosolids.
  - **1999-2002: Project Manager – Veolia Water North America – Northeast, LLC – Seymour, Connecticut**
    - Managed OM&M for the Town's 2.97-MGD secondary activated sludge wastewater treatment plant, including plant operations, collection system, 10 sewer pump/lift stations, two siphons, mark-outs, easement maintenance, and sewer inspections. Project scope included managing billing and collection operations covering 3,500 sewer use accounts and 450 sewer assessment accounts.
  - **1997-1999: Project Manager (1998-1999) and Assistant Project Manager (1997-1998) - Veolia Water North America – Northeast, LLC (predecessor company) – West Haven, Connecticut**
    - Served as Project Manager for OM&M of the City's 12.5-MGD Water Pollution Control Facility, 13 pumping stations and collection system maintenance. This facility uses conventional activated sludge treatment with single stage nitrification, utilizing a union staff of 23 employees. The facility used an on-site fluidized bed incinerator for sludge disposal. Prior to that served as the Assistant Project Manager.
    - Responsibilities included collection system scheduling, supervision, and procurement; maintenance scheduling, supervision and procurement; operations scheduling, supervision and process control; and in-house operator training. The West Haven Facility and collection system was an extremely maintenance-intensive project during this time period.
  - **1997: Process Specialist – Veolia Water North America – Northeast, LLC – New Bedford, Massachusetts**
    - Assisted with operator training, development of standard operation procedures (SOPs) and activated sludge process and odor control plans for the City's then new wastewater plant. Assisted Project Manager with technical research on various aspects of the facility's operation.
  - **1995-1997: Lead Operator – Veolia Water North America –Northeast , LLC (predecessor company) – Holbrook, Massachusetts**
    - Worked as part of the OM&M team at the Baird & McGuire groundwater remediation facility. This 0.288-MGD facility utilized iron salt precipitation, pH stabilization, sand and granular activated carbon filtration.
  - **1994-1995: Lead Operator – Veolia Water North America – Northeast, LLC (predecessor company) – New Bedford, Massachusetts**
    - Responsible for the direct supervision of OM&M for the New Bedford Harbor Hotspot Superfund site. The facility removes PCBs and heavy metals from the water prior to discharge to the Acushnet River. The facility utilized sedimentation, sand filtration, (2.0) micron filtration followed by an Ultraviolet/peroxidation system for PCB destruction.
  - **1988-1994: Assistant Plant Manager – Veolia Water North America -Northeast, LLC (predecessor company) – Town of Hull, Massachusetts**
    - Worked as part of the management team for the OM&M of the Town's 3.07-MGD secondary wastewater treatment plant, seven pump stations and collection system.
    - Responsible for process control and maintenance of the wastewater treatment facilities for the removal of domestic and industrial pollution prior to discharge into Massachusetts Bay.
    - Performed mechanical and electrical troubleshooting. Organized and scheduled preventive and corrective maintenance tasks, provided written SOPs for tasks at the facility and pump stations and supervised the efforts of facility operators
  - **1985-1988: Shift Supervisor – Veolia Water North America - Northeast, LLC (predecessor company) – City of Fall River, Massachusetts**
    - Supervised shift operations at the City's 30.9-MGD pure oxygen advanced secondary wastewater treatment plant, including multiple hearth incineration and pressure swing absorption oxygen generation.
    - Provided training for equipment startup and shut-down and provided technical troubleshooting for continued equipment operation during shift work coverage.
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## **John Caron**

**Project Manager – New Bedford, MA – Veolia Water North America – Northeast, LLC**

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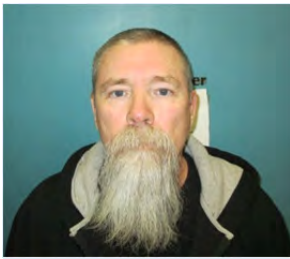
- **1984: Operator – Veolia Water North America -Northeast, LLC (predecessor company) – City of Fall River, Massachusetts**
- Served as an Operator for contract OM&M of the City's 30.9-MGD pure oxygen advanced secondary wastewater treatment plant. Performed operator duties related to the operation and preventive maintenance of the wastewater treatment facilities for the removal of domestic and industrial pollution prior to discharge.

### **Other Training/Certifications:**

- Massachusetts Department of Environmental Protection approved training in Basic Hydraulics and BNR Process Control and Troubleshooting, Confined Space Entry 8 hour training.
- OSHA Hazardous Materials Operations
- OSHA Hazardous Waste Operations Supervisor

### **Professional Affiliations:**

- New England Water Environment Federation
  - Water Environment Federation
-



**Kenneth Henrique**  
**Maintenance Manager – New Bedford, MA**  
**Veolia Water North America – Northeast, LLC**

**38 years**  
total experience

**28 years**  
with Veolia

### Professional Background:

Mr. Henrique is the Maintenance Manager for Veolia Water North America – Northeast, LLC (Veolia)'s ongoing wastewater facilities operations, maintenance and management (OM&M) contract with the City of New Bedford, Massachusetts. Under this ongoing OM&M, now in its 29<sup>th</sup> year, he manages a dedicated site team that includes Maintenance Technicians, Utility Workers, Electricians and Instrumentation Technicians.

Mr. Henrique has worked with for more the 28 years with Veolia (and predecessor companies) in Massachusetts and New England, involved in the operation and maintenance of wastewater treatment facilities, pump stations and collection systems. He joined the OM&M team at New Bedford in 2011 and now manages the maintenance team that is engaged in supporting all repair, maintenance and related capital project tasks.

Prior to joining the OM&M team at New Bedford, Mr. Henrique worked as the Project Manager for a Membrane Filtration Facility operations at Cohasset, Massachusetts, and the Assistant Project Manager and Maintenance Manager for the City of Woonsocket, Rhode Island's 16-MGD wastewater treatment plant. He began his career with a Veolia in 1982 at OM&M project for the City of Fall River, Massachusetts, wastewater facilities.

### Qualifying Project Experience:



#### Wastewater OM&M Management – City of New Bedford, Massachusetts

- Maintenance Manager, since 2011, for operation and management of the City's 30-MGD (peak 75 MGD) secondary activated sludge wastewater treatment plant. Manages the dedicated maintenance team for repair, maintenance and capital program tasks. Coordinates tasks with the operations team to ensure that facilities and operations maintain availability and compliance.



#### Wastewater OM&M Management – City of Woonsocket, Rhode Island

- Assistant Project Manager and Maintenance Manager (2006-2009) for the City's 16-MGD tertiary wastewater treatment plant. Directed the repair and maintenance of all plant equipment and the maintenance for seven pumping stations in addition to working closely with the Project Manager and Operations Supervisor to ensure plant safety, effective facility performance and compliance with all permit standards. Responsible for maintaining the Computerized Maintenance Management Program (CMMS) for the project site.



#### Wastewater OM&M Management – City of Fall River, Massachusetts

- Worked as part of the Veolia OM&M team at this site for the operations of a 30.9-MGD pure oxygen secondary wastewater plant and 17 sewer pump stations (ranging in size up to 54-MGD). Started as a Utility Worker (1982-1984) with Veolia predecessor company and then as an Operator and Wastewater Mechanic (1994-1996) and Assistant Project Manager (1996-1999) with Veolia. Directed and controlled the Operations, Maintenance, and Collection Systems departments and ensured effective facility performance and compliance with all permit standards. Duties consisted of troubleshooting, inspecting, maintaining, repairing and installing mechanical equipment. Performed preventive and corrective maintenance on plant and pumping station equipment.

### Training:

Veolia OM&M, Management, Business and Other Training

### Licenses/Certifications:

Massachusetts, Grade 7C (Full) Wastewater Treatment Combined Domestic/Industrial Operator; Rhode Island Grade 4 Wastewater Treatment Operator; and New England Water Environment Association Grade IV Collections System Operator

**Current and Past Relevant Experience/Work History:**

- **2011-Present: Maintenance Manager - Veolia Water North America – Northeast, LLC – New Bedford, Massachusetts**
  - Responsible managing the maintenance, repair and asset management tasks under the ongoing OM&M agreement covering the City's 30-MGD (peak 75-MGD) secondary wastewater treatment plant.
- **2009-2011: Project Manager – Veolia Water North America – Northeast, LLC – Cohasset, Massachusetts**
  - Managed the work of Veolia's OM&M team at the City's wastewater operations, as well as the work of support staff and subcontractors for this project site. Job duties included managing the day-to-day operation and maintenance of the 400,000 gallon per day Zenon® Membrane Filtration Facility. Responsible for operations and maintenance of eight pumping stations and responds to homeowner calls related to individual grinder pumps. Tracked plant operations data to formulate monthly DMR and MOR reports for state and federal regulators. Responsible for project financial performance and the management of the plant CMMS (Jobs Plus) by inputting work orders, closing work orders and tracking spare parts inventory.
- **2006-2009: Assistant Project Manager and Maintenance Manager –Veolia Water North America – Northeast, LLC – Woonsocket, Rhode Island**
  - Involved in providing management and OM&M support for Veolia contract covering the City's 16-MGD tertiary wastewater treatment plant. Directed the repair and maintenance of all plant equipment and the maintenance for seven pumping stations in addition to working closely with the Project Manager and Operations Supervisor to ensure plant safety, effective facility performance and compliance with all permit standards. Responsible for maintaining the Computerized Maintenance Management Program (CMMS) for the project site.
- **1999-2006: Assistant Project Manager/Maintenance Manager – Bucklin Point Wastewater Treatment Facility – Veolia Water North America – Northeast, LLC – East Providence, Rhode Island**
  - Worked as a part of the Veolia Water O&M team for a contract with the Narragansett Bay Commission for the operations of the 31-MGD Bucklin Point Wastewater Treatment Plant. Directed the repair and maintenance of plant equipment and pump stations and worked closely with the Project Manager to ensure that the facility operations complied with all permit standards and requirements. Selected to be a member of the client's Asset Management Development Team and operated and maintained the Computerized Maintenance System (MP2).
- **1996-1999: Assistant Project Manager – Fall River Wastewater Treatment Facility – Veolia Water North America – Northeast, LLC (predecessor company) – Fall River, Massachusetts**
  - Worked as part of the Veolia OM&M team at this site for the operations of a 30.9-MGD pure oxygen secondary wastewater plant. Directed and controlled the Operations, Maintenance, and Collection Systems departments and ensured effective facility performance and compliance with all permit standards. Assisted in the management of personnel and resources, administration of Labor Agreements, interviewing and hiring new employees, diagnosing and correcting problems within departments, and conducting employee evaluations.
- **1994-1996: Wastewater Mechanic – Fall River Wastewater Treatment Facility – Veolia Water North America – Northeast, LLC (predecessor company) – Fall River, Massachusetts**
  - Duties consisted of troubleshooting, inspecting, maintaining, repairing and installing mechanical equipment. Performed preventive and corrective maintenance on plant and pumping station equipment. Held the position of Union Steward and was a member of the Union Contract Negotiation Team.
- **1984-1994: Operator and Wastewater Mechanic – Fall River Wastewater Treatment Facility – Private OM&M Provider – Fall River, Massachusetts**
  - Responsible for the daily operation of plant equipment such as the Multi-Hearth Incinerator and PSA System. Performed routine laboratory tests and preventative and minor maintenance of plant equipment. Transitioned to the Veolia O&M team at the end of the contract term by the previous operator.
- **1982-1984: Utility Worker – Fall River Wastewater Treatment Facility – Veolia Water North America – Northeast, LLC (predecessor company) – Fall River, Massachusetts**
  - Performed a variety of maintenance functions throughout at the wastewater plants and pump stations.

**Other Training/Certifications:**

- NASSCO PACP (Pipeline Assessment) and MACP (Manhole Assessment) Certification
  - AEGIS Shaft Bearing Voltage Training
  - Confined Space Entry Training
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**Darlene Domingos**  
**Vice President of Operations -**  
**Veolia Water North America – Northeast, LLC**

**32 years**  
total experience

**25 years**  
with Veolia

**Professional Background:**

Ms. Domingos is an Area Manager and Vice President of Operations with Veolia Water North America – Northeast, LLC (Veolia). In this role, she is the supervisor and manager for Veolia O&M teams at 12 water and wastewater treatment facilities project sites in Massachusetts, including the current contract with the City of New Bedford. Ms. Domingos works with Veolia’s Project Manager in maintaining service quality, regulatory and safety compliance and efficient operations.

Prior to her current role, Ms. Domingos served as the Operations Project Manager for Veolia’s ongoing O&M contract with the City of Brockton. In that role she was responsible for the day-to-day management of the operations, overseeing the wastewater treatment facilities and the asset management program. Prior to that, Ms. Domingos was the Veolia Project Manager for a wastewater O&M contract with the City of Taunton, Massachusetts. Her work on that project was recognized with an Operator of the Year Award from the New England Water Environment Association in 2007.

Ms. Domingos joined Veolia in 1994, and she has more than 24 years of progressively responsible experience in the water and wastewater O&M, the majority of which has involved working at wastewater operations projects in Massachusetts.

**Related Project Experience:**



**Wastewater O&M Management – City of New Bedford, Massachusetts**

- Direct corporate supervisor and manager for the Veolia O&M team that operates, maintains and manages the City’s 30-MGD (peak 75-MGD) secondary activated sludge wastewater treatment plant. That plant is sited at location that has a 47-acre park, as well as a historic American Civil War-era military fort, which requires meeting strict regulatory requirements for discharges into the bay, as well as for odor and noise control, given the proximity to the park area. Over the course of 29 years of operations, Veolia’s operations have maintained compliance and has been recognized with Multiple Peak Performance Awards from the National Association of Clean Water Agencies.



**Wastewater O&M Management – City of Brockton, Massachusetts**

- Project Manager for the ongoing O&M contract covering the City’s 20.5 MGD wastewater treatment plant. Supervised a team of 30 operations, maintenance and support staff that were responsible for the day-to-day operations of the plant and associated facilities. Managed the mobilization and work of Veolia management and technical support resources assigned to provide specialized support for the operations at Brockton.



**Wastewater Operations Management – City of Taunton, Massachusetts**

- Project Manager for an ongoing O&M contract for the City’s wastewater facilities, including: a 9-MGD advanced secondary wastewater treatment plant; 162 miles of sewer lines; 37 lift stations and 3,500 manholes. Supervised an O&M team of 30 for the day-to-day operations of the wastewater facilities. Responsible for project reporting to the client, regulatory agencies and corporate groups, which included meeting regularly with the City’s management team, and other governmental staff and representatives of regulatory agencies.

**Education/Training:**

BS, Biology, University of Massachusetts  
 Pipeline Assessment Training and Certification, National Association of Sewer Services Companies (NASSCO)

**Licenses/Certifications:**

Grade 7, Wastewater Treatment Operator, Massachusetts  
 Grade 4, Collection System Operator, New England Water Environment Association  
 Grade 2T (OIT), Water Treatment Operator, Massachusetts

## Current and Past Relevant Experience/Work History:

- **2015-Present: Vice President of Operations – Veolia Water North America – Northeast, LLC – Brockton, Massachusetts**
    - Serves as the direct supervisor and manager for Veolia O&M teams at project sites in the region, ensuring service quality, regulatory and safety compliance and efficient operations. This includes overseeing and managing 12 water and wastewater treatment facilities O&M projects in Massachusetts, including:
      - City of New Bedford, Massachusetts – Manages the ongoing O&M for the City's 30-MGD secondary activated sludge wastewater treatment plant, with processing and disposal for 6,500 dry tons per year of biosolids.
      - Town of Winchendon, Massachusetts – Managed an interim operations, compliance and management support agreement for the Town's 1.1-MGD wastewater treatment plant. Then the transition of this project to a full-service O&M agreement with Veolia.
      - Ashburnham-Winchendon Joint Water Authority – Manages and supports the O&M of water facilities that serves customers in the towns of Ashburnham and Winchendon.
      - City of Brockton – Manages and supports this contract for O&M of a 20.49-MGD wastewater treatment plant and two water treatment plants (1.3-MGD and 24-MGD).
      - Town of Charlton – Worked as part of the transition team and now manages the ongoing O&M for the Town's 0.45-MGD RBC/Activated Sludge wastewater treatment plant.
      - Town of Maynard – Manages and supports the ongoing O&M contract for the Town's 1.45-MGD RBC Tertiary Wastewater Plant.
      - City of Leominster – Manages the ongoing O&M of a 9.3-MGD Advanced Secondary Activated Sludge wastewater treatment plant and three water treatment plants (1.2-MGD, 2-MGD and 4-MGD).
      - City of Gloucester – Manages and supports Veolia's two wastewater contracts with the City for a 5.15-MGD wastewater treatment plant, three water plants (1.2-MGD and two 5-MGD plants), and a new contract covering the operation of sewage lift stations, Septic Tank Effluent Pump System (STEP) units and grinder pumps.
    - Works as part of Veolia's regional management team in New England supporting new project development and transitions.
    - Works as part of the Veolia's regional team that is responsible for communication and reporting to clients, and for resolving any needs or concerns related to project operations.
  - **2014-2015: Project Manager – Veolia Water North America – Northeast, LLC – Brockton, Massachusetts**
    - Responsible for management of the ongoing O&M contract of the City's 20.5 MGD wastewater treatment plant and associated operations. Developed and executed annual business budgets and plans, controlled expenditure of budgeted funds and requests approval for major expenditures.
    - Supervised an O&M team of 30 responsible for the day-to-day operations of the wastewater plant. This included responsibility for all aspects of staff training and development, staff performance tracking and management, as well as safety and compliance.
    - Managed project reporting to the client, regulatory agencies and corporate groups providing management support. This included meeting regularly with the City's management team, and other governmental staff and agencies.
    - Coordinated directly with engineers, consultants and municipal officials to plan and implement capital improvement projects.
    - Managed the mobilization and work of Veolia management and technical support resources assigned to provide specialized support for the operations at Brockton.
  - **2004-2014: Project Manager – Veolia Water North America – Northeast, LLC – City of Taunton, Massachusetts**
    - Responsible for administration, operation and maintenance of the City's wastewater facilities including: the 9-MGD advanced secondary wastewater treatment plant; 162 miles of sewer lines; 37 lift stations; and 3,500 manholes.
    - Supervised an O&M team 30 that was responsible for the day-to-day operations of the wastewater facilities. This work included all aspects of staff training and development, staff performance tracking and management, as well as safety and compliance.
    - Managed the mobilization and work of Veolia management and technical support resources assigned to provide specialized support for the operations at Taunton.
-

## Darlene Domingos

Vice President of Operations – Veolia Water North America – Northeast, LLC



- Managed project reporting to the client, regulatory agencies and corporate groups providing management support. This included meeting regularly with the City's management team, and other governmental staff and agencies.
- Developed and executed annual business budgets and plans, and controls the expenditure of budgeted funds and requests approval for major expenditures.
- Analyzed and evaluated operation and maintenance functions, and initiated recommended new or improved practices. Developed plans and procedures to ensure efficient plant operation.
- **2004: Operations Supervisor – Veolia Water North America – Northeast, LLC – City of Taunton, Massachusetts**
  - Managed the City's Pollution Prevention Program (PPP) and laboratory operations at the wastewater treatment plant. This included responsibility for preparing all reports and documentation required under the NPDES permit for the wastewater plant.
  - Served as the Site Safety Coordinator, with responsibility for conducting monthly safety training for operations and maintenance employees at this site.
- **1998-2004: Pollution Prevention Coordinator – Veolia Water North America – Northeast, LLC – City of Taunton, Massachusetts**
  - Worked to manage City programs focused on pollution prevention and control. This included responsibility for administering the Industrial Pretreatment Program (IPP) which tracked compliance for 24 industries located within the City.
  - Supervised laboratory testing and QA/QC (quality control and assurance) procedures for the Taunton wastewater treatment plant, and a satellite wastewater operation at Wheaton College.
  - Supported Veolia's outreach efforts to the community, including: coordinating a City-wide annual household hazardous waste collection day; writing the quarterly pollution prevention newsletter which was distributed to businesses in the City; and, collaborated with the Taunton River Watershed Alliance on a monthly river monitoring program.
- **1994-1998: Pretreatment Coordinator – Veolia Water North America – Northeast, LLC – Brockton, Massachusetts**
  - Established and implemented the IPP program, which tracked compliance for 19 industries located within the City.
- **1982-1988: Wastewater Treatment Plant Chemist – City of Brockton, Massachusetts**
  - Worked as a City employee with responsibility for conducting laboratory analyses necessary for wastewater plant operation and NPDES permit requirements.

### Other Training/Certifications:

- National Incident Management System (NIMS) Training
- OSHA 10 Hour General Industry Outreach
- New England Water Environment Association Energy & Sustainability Conference

### Awards:

- Industrial Pretreatment Program Regional Excellence Award, U.S. Environmental Protection Agency
- Operator of the Year, New England Water Environment Association
- Nominee for Governor's Award for Outstanding Achievement in Toxic Use Reduction (Massachusetts)

### Professional Affiliations:

- Massachusetts Pretreatment Forum
  - Water Environment Federation
  - New England Water Pollution Control Association
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**John Cheslik**  
Senior Vice President and Manager  
Veolia Water North America – Northeast, LLC

37 years  
total experience

1 year  
with Veolia

### Professional Background:

Mr. Cheslik is the Principal and Manager for Veolia’s water, wastewater and related projects and operations in the state of Massachusetts, including the ongoing contract with the City of New Bedford and other water and wastewater operations in the Northeast and Mid-Atlantic regions. He joined Veolia in 2019, and he has been engaged with Business Development management for new projects and for the renewal of long-term operations, maintenance and management (O&M) and related types of contacts.

Mr. Cheslik’s experience spans multiple areas of regulated and non-regulated water and wastewater utility management, including general and financial management, client and board relationship building, capital planning and execution, business process optimization, operations, maintenance and process improvements, and change management. Prior to joining Veolia, he was the Chief Operations Officer and other senior management roles with one of the largest water and wastewater operations companies in the U.S. This included responsibility for the analysis of business unit operational processes, organizational reporting review and strategy of regulated and non-regulated businesses.

Mr. Cheslik worked with two largest investor-owned water utilities in the U.S., and managed major water and wastewater operations, including a large wastewater operations contract with Milwaukee, Wisconsin (a contract now managed by Veolia), and a now completed O&M contract with the City of Atlanta Water Department, Georgia. That \$24 million operation included more than 300 employees involved with plant and pumping operations, accounting, maintenance, technical services, laboratory, purchasing, warehouse, and customer service and billing serving 1.5 million people in the greater Atlanta area.

### Related Project Experience:



#### Project Principal – Wastewater O&M Contract – City of New Bedford, MA

- Project Principal for Veolia O&M contract for the City’s 30-MGD (peak 75-MGD) secondary activated sludge wastewater treatment plant. That plant is sited at location that has a 47-acre park, which requires meeting strict regulatory requirements for discharges into the bay, as well as for odor and noise control, given the proximity to the park area. Over the course of 29 years of operations, Veolia’s operations have maintained compliance and has been recognized with Multiple Peak Performance Awards from the National Association of Clean Water Agencies.



#### General Manager – Milwaukee, Wisconsin – Wastewater O&M

- Served as the General Manager for a wastewater O&M contract with the Milwaukee Metropolitan Sewerage District (MMSD), a system that serve more than 1.1 million people in the greater Milwaukee area. The MMSD’s 420-square-mile service area includes 18 municipalities, and the wastewater operations, including two large wastewater plants (300-MGD and 330-MGD) and an extensive sewer and stormwater system.



#### Institutional Strengthening and Information Technology Contract - Pittsburgh Water & Sewer Authority (PWSA)

- Served as the leader of an Institutional Strengthening and Information Technology consulting contract with the PWSA. Accountable to the PWSA Board, this contract provided strategic, operational, and change management consulting to PWSA, as well as enterprise-based information technology implementation aligned with organization objectives. The PWSA manages the City of Pittsburgh’s water and sewer systems, with more than 80,000 drinking water service connections and over 107,150 sewage connections.

### Education:

MBA (Finance and Marketing), Indiana University - Kelley School of Business, 1997  
BS, Civil Engineering, Iowa State University, 1982



**Current and Past Relevant Experience/Work History:**

- **2019-Present: Senior Vice President – Veolia Water North America – Northeast, LLC – Boston, Massachusetts**
  - Started as a Business Development Manager and moved into the role of the overall Principal and Manager for Veolia's water, wastewater and related operations in the Northeast and Mid-Atlantic region. These projects and operations include:
    - City of New Bedford, Massachusetts – Ongoing O&M for the City's 30-MGD secondary activated sludge wastewater treatment plant, with processing and disposal for 6,500 dry tons per year of biosolids.
    - City of Brockton – O&M of a 20.49-MGD wastewater treatment plant and two water treatment plants (1.3-MGD and 24-MGD).
    - Town of Charlton – O&M for the Town's 0.45-MGD RBC/Activated Sludge wastewater treatment plant.
    - Town of Maynard – O&M contract for the Town's 1.45-MGD RBC Tertiary Wastewater Plant.
    - City of Leominster – O&M of a 9.3-MGD Advanced Secondary Activated Sludge wastewater treatment plant and three water treatment plants (1.2-MGD, 2-MGD and 4-MGD).
    - City of Gloucester – Two wastewater contracts with the City for a 5.15-MGD wastewater treatment plant, three water plants (1.2-MGD and two 5-MGD plants), and a new contract covering the operation of sewage lift stations, Septic Tank Effluent Pump System (STEP) units and grinder pumps.
  - Manages operations and projects for the company's Northeast and Mid-Atlantic regions, providing leadership and support for the ongoing water and wastewater operations, and new project transition and business development. This is a service area covers projects and operations in the state of Massachusetts, and responsibilities include managing and supporting a business group that provides O&M), design/build, design/build/operate (DBO and related services to municipal, governmental and commercial clients in the region.
- **2015-2018: Chief Operations Officer - SUEZ - Environmental Services (formerly United Water) - New Jersey**
  - Managed the North American operations as the COO of the Environmental Services Group. The company's operations include regulated and non-regulated water and wastewater utilities. Held responsibility for management tasks, including general and financial management, client and board relationship building, capital planning and execution, business process optimization, operations, maintenance and process improvements, and change management.
- **1997-2015: Senior Vice President (and other roles) – United Water – New Jersey (and other locations)**
  - 2008-2015: Senior Vice President - Responsible for the analysis of business unit operational processes, organizational reporting review and strategy of regulated and non-regulated businesses. Analyzes operational performance and financial value of business units and makes recommendations for appropriate actions. Develops standard reports to monitor performance and assist in the development of strategic goals for the business units, segments, and functional support from shared departments.
  - 2004-2008: General Manager - Responsible for the company's regional contract services division providing water and wastewater system operations and maintenance. This included responsibility for a \$44 million in regional contracts and business delivery including contracts with: Milwaukee Metropolitan Sewerage District (MMSD), Wisconsin (wastewater system, water, wastewater, collection, distribution and customer service operations); Bexar Met, Texas (water system); and Laurel, Mississippi (water, wastewater, collection, distribution and customer service operations). The contract with the MMSD was nationally recognized as one of the most successful public-private partnerships, delivering significant financial savings and exceptional environmental performance for Milwaukee customers. The MMSD contract encompassed two technically complex wastewater plants and a collection system, and a combined stormwater storage tunnel, serving 28 communities and 1.1 million people. Responsibilities included primary MMSD staff and Commission interface, press and public relations, environmental performance and profit responsibilities.
  - 2003-2004 - Management Consulting Director to the Pittsburgh Water & Sewer Authority (PWSA), Pittsburgh, Pennsylvania - Led the organization and people aspects of implementing change, and the development and project delivery of an organization strengthening contract with PWSA. Implemented management control and reporting tools and techniques, including the Balanced Scorecard approach for strategic execution and a variety of operational controls and management reporting systems. PWSA provides water and wastewater services to approximately 750,000 consumers throughout the City of Pittsburgh and surrounding areas. Areas of delivery included strategic business planning and implementation, organizational design, asset planning and management policy and implementation, rate case and capital coordination, change management, and enterprise-based IT systems. The enterprise IT system project consisted of billing, work order and computerized maintenance management, asset

management, financial systems (accounts payable and accounts receivable, balance sheet, income statement and monthly reporting), project management for capital (scheduling, budgeting, expenditure and reporting), and asset accounting. Supported bond planning and issuance activities such as bond document drafting, review, and meetings with bonding issuance agencies. Project had an annual contract value \$2 million, and the team included six consultants, with accountability to the PWSA Board for financial and operational results.

- **2001-2003 - Assistant Vice President - United Water Atlanta, Georgia** – Managed the transition and operations of the City of Atlanta’s water operations under an O&M agreement. Direct management responsibility for 320 employees (over 50% union) for the laboratory, water distribution, customer service and billing, technical services, IT, purchasing/warehouse and human resource department operations. Served as the key leader for implementing balanced scorecards, management control and reporting structures, and internal communication to reinforce behavior changes. Accomplishments included: implemented business process mapping that improved core business operations such as reducing meter installation times from over 45 days to 98% installed under 15 days, bill collections improvement from 95% to over 99%, and reductions in work order backlogs; implemented key performance indicators (KPIs) across the organization that raised performance for every department and achieved greater than 95% in goal compliance (customer satisfaction, financial results, operational results, people results and contract compliance); and developed enterprise-wide business plan that included key manager mentoring and organizational effectiveness deployment.
  - **2000-2001 - Corporate Strategic Initiatives Director – United Water – New Jersey** – Worked as a member of the company’s management team for the transition from separate regulated and contract operation to a combined hub-operating concept.
  - **1998-2000 - Assistant Project Manager - United Water Milwaukee, Wisconsin**
    - Worked as part of the management team for the MMSD wastewater O&M contract. Responsibilities and accomplishments included: providing leadership in setting technical approach; developing and supporting development for a process control plan for the wastewater plants and biosolids operations; and negotiating key vendor contracts. Served as part of the transition team responsible for the transition/transfer of 280 employees from public to private sector employer. Coordinated IT rollout that included maintenance management, accounting, telephony and general business systems.
  - **1989-1996: Operations Engineer/Chief Engineer – American Water – New Jersey**
    - Provided engineering, operations, and rate case support services to 17 investor-owned water and wastewater utilities. As Chief Engineer led the development of five-year planning documents for compliance, growth, maintenance and repair of 17 water systems in Indiana. Responsible for capital program execution, ranging from \$8 million to \$34 million annually. Coordinated capital planning and capital execution with rate case delivery. Supported rate case with studies and testimony such as asset condition, replacement needs, regulation and level of service requirements, and asset replacement cost studies.
  - **1982-1989: Project Manager/Sales & Application Engineer/Engineer - CBI Industries/Walker Process Corporation – New Jersey**
    - Provided marketing, design, selection, construction and startup of process and process equipment for the water and wastewater fields.
-



**Donald Benz**  
**Business Development Manager -**  
**Veolia Water North America – Northeast, LLC**

**37 years**  
total experience

**19 years**  
with Veolia

**Professional Background:**

Mr. Benz is the Manager of Business Development with Veolia Water North America – Northeast, LLC (Veolia), and works as part of the Municipal and Commercial group. In this role, he has responsibility for providing oversight, management and technical expertise for business development of projects primarily in a regional service area that includes projects and operations in Massachusetts. He is involved with operation, maintenance and management (O&M), design/build/operate (DBO) and related projects for municipal water and wastewater clients.

Prior to this, Mr. Benz was an Operations Manager with Veolia, providing oversight, management and support for new business, renewal of current projects and operations contracts, and oversight of work with existing clients. This involved supporting the water and wastewater operations and projects of Veolia Water and the energy operations and projects of Veolia Energy in a regional service area that included operations in the state of Massachusetts.

Mr. Benz rejoined Veolia in 2004, after working for the company from 1989 to 1993 as an Operations Specialist, and he over 37 years of water and wastewater experience. His experience includes O&M, construction and project management, and safety and environmental compliance. Prior to joining Veolia, he worked with the Warwick Sewer Authority in Rhode Island as their Construction Program Manager. In that role, he managed engineering, construction inspection along with general construction contracts of over \$138 million sewer system expansion program.

**Related Project Experience:**



**Water and Wastewater O&M Contracts in Massachusetts**

- Provides support for ongoing contracts, including O&M of the City of New Bedford's 30-MGD (peak 75 MGD) secondary activated sludge wastewater treatment plant. Engaged with new project development and operations transitions for wastewater projects including the City of Gardner's water and wastewater facilities, the Town of Winchendon (1.1-MGD Activated Sludge Secondary Wastewater Treatment Facility), the Town of Charlton (0.45-MGD RBC/Activated Sludge Wastewater Treatment Facility), and the Town of Maynard (1.45-MGD RBC Tertiary Wastewater Treatment Plant).



**Construction Manager, Warwick Sewer Authority, Rhode Island**

- Served as the Construction Program Manager, with responsibility for: managing consulting engineering, construction inspection and general construction contracts for sewer system expansion program (voter approved \$138 million bond referendum); and for assisting with funding. Additionally, served as the Assistant Superintendent and Safety Coordinator for the Agency's wastewater operations.



**Admin. Engineer/Acting Superintendent – City of Cranston, Rhode Island**

- Worked as an Assistant to the Superintendent until his retirement, and then as the Acting Superintendent. Managed daily operations of a 19-MGD wastewater treatment facility with multiple hearth sludge incineration. The operations were transitioned to Veolia under a long-term O&M agreement that covers the City's 20.2-MGD Activated Sludge wastewater treatment plant, 22 sewer pump stations, 258 miles of sewer line and a merchant biosolids program.

**Education:**

BS, Environmental Studies, University of Maine, 1981  
42-hour Wastewater Treatment Facilities course, W. Davies Vocational School, 1983

**Licenses/Certifications:**

Grade 7-C, Wastewater Treatment, MA  
Grade IV, Collection System and Wastewater Treatment, New England Water Pollution Control Association (NEWPA)  
Grade 4, Wastewater Treatment, Rhode Island

**Current and Past Relevant Experience/Work History:**

- **2016-Present: Business Development Manager – Veolia Water North America – Northeast, LLC – Boston, Massachusetts**
    - Works as part of the project development and support team for the ongoing O&M and renewal for the City of New Bedford's 30-MGD (peak 75 MGD) secondary activated sludge wastewater treatment plant, process control, sludge processing and disposal for 6,500 dry tons per year of biosolids.
    - Provides support to ongoing O&M operations in Massachusetts and the region, including wastewater treatment facility operations with the City of Gardner, the Town of Winchendon, the Town of Charlton, the Town of Maynard and others.
    - Manages new project development and contract negotiation, and also supports the transition of new O&M contracts in the Northeast region.
    - Provides leadership for new business development efforts and technical and management support for ongoing O&M and related projects for Veolia Water's North American operations.
  - **2014-2016: Vice President and Operations Manager – Veolia Water North America – Northeast, LLC – Boston, Massachusetts**
    - Managed and supported projects and operations in the Commonwealth of Massachusetts and other parts of the region.
    - Provided leadership for new project development and the transition of new projects and operations in the region.
  - **2004-2014: Vice President and Area Manager – Veolia Water North America – Northeast, LLC – Brockton, Massachusetts**
    - Served as the Area Manager and Technical Services Manager for Veolia's O&M and related projects in Massachusetts.
    - Served as a project and management liaison between the Northeast project groups and corporate technical services group. Responsible for approving contractor pay requisitions/change orders, for multi-engineer sewer designs, for contract negotiation, and for billing sewer assessments fees. Developed an MS-ACCESS sewer connection database for this agency.
    - Served as the Assistant Superintendent had responsibility for the O&M of a 5-MGD wastewater treatment plant and 40 sewage pumping stations, supervising a 14-person O&M staff.
  - **1993-2003: Multiple Roles (Construction Program Manager, Assistant Superintendent and Safety Coordinator) – Warwick Sewer Authority - Warwick Rhode Island**
    - Served as Construction Program Manager, managing consulting engineering, construction inspection and general construction contracts for sewer system expansion program (voter approved \$138 million bond referendum); assisted with securing funding. Reported directly to the Executive Director/Sewer Board, and assisted with the development of a user-rate study model.
  - **1989-1993: Senior O&M Specialist – Veolia Water North America Operating Services, LLC (through a predecessor company), Massachusetts**
    - Involved in writing O&M manuals for wastewater treatment and power generation facilities, and for business development-related activities for O&M projects in the U.S. and Canada.
  - **1988-1989: Administrative Engineer/Acting Superintendent – City of Cranston, Rhode Island**
    - Worked as an Assistant to the Superintendent until his retirement in November 1988. Worked as Acting Superintendent for remainder of term. Managed daily operations of a 19-MGD wastewater treatment facility with multiple hearth sludge incineration.
  - **1987-1988: Operations Specialist – SEA Consultants - Cambridge Massachusetts**
    - Supported staff engineers by providing startup services at various wastewater treatment improvement projects. Assisted clients by training staff, performing startup equipment testing and supervising general contractor.
    - Worked as part of the startup team for the Westborough Wastewater Treatment Plant, a new regional facility serving the needs of the communities of Westborough, Shrewsbury and Hopkinton, Massachusetts, for the Westborough Treatment Plant Board.
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**Don Benz****Business Development Manager – Veolia Water North America – Northeast, LLC**

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- **1982-1987: Operations Supervisor – Narragansett Bay Commission – Providence, Rhode Island**
  - As Operations Supervisor for the Field's Point Wastewater Treatment Plant, responsible for supervising an O&M crew of 27 shift operators and six shift supervisors. Ordered process chemicals and consumable supplies. Scheduled staff (shift schedules and coverage for the operations), managed subordinates (operations, maintenance and support staff), and reported directly to the Superintendent.

**Other Training/Certifications:**

- OSHA 10-hour Construction Safety & Health Course certified
- 40-Hour HAZWOPER Certified

**Professional Affiliations:**

- American Water Works Association
  - Water Environment Federation
  - Narragansett Water Pollution Control Association – Executive Board Member
  - New England Water Environment Federation
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## Christian Hoan

Technical Services Director -  
Veolia Water North America – Northeast, LLC



24 years  
total experience

19 years  
with Veolia

### Professional Background:

Mr. Hoan is the Technical Director for the Northeast and Mid-Atlantic regions of Veolia. He works as part of the corporate Technical and Performance Group, which is responsible for providing technical support and capital project expertise for water, wastewater and related operations and projects throughout North America. This group also directs environmental monitoring and asset management programs, and coordinates the delivery of information technology support.

Mr. Hoan provides technical support to the municipal projects in Massachusetts, including our ongoing operations, maintenance and management (O&M) contracts with the City of New Bedford, Massachusetts. He is based at Veolia's merchant sludge and O&M project at the Borough of Naugatuck, Connecticut, and works with projects in the region to monitor overall process performance and permit compliance, assist with identification and implementation of initiatives under the Cost of Goods Sold (COGS) and similar programs, as well as on deployment of best practices, tools and methodologies.

Mr. Hoan has worked with Veolia companies in the U.S. and other parts of the world for more than two decades, and he has extensive experience in operation and management of wastewater facilities. This includes experience with the evaluation and application of a wide range of Veolia developed technologies and equipment systems for water and wastewater treatment. He has also been involved providing technical and operations support for large projects in Paris, France, including the design and construction of a new wastewater plant (a 450-MGD nitrification plant using Biostyr<sup>®</sup> filters) and the operation of a stormwater management plant (a 550-MGD treatment plant using Actiflo<sup>®</sup> settlers).

### Related Project Experience:

#### Technical Manager for Operations Support – Northeast Region

- Supports ongoing operations and new project development and transitions. This has included working to support the Veolia O&M team at the City of New Bedford's 30-MGD secondary activated sludge wastewater treatment plant to support operations improvements and specialty project needs, including: a Nutrient Study pilot program (including review of initial proposed study protocol in 2018 and of actual data collected in 2019); continuous review of process performance at the wastewater plant using Veolia's proprietary Process Control Management Plan (PCMP) tool; approaches for maintaining environmental compliance; and assistance and training in the effective application of management and monitoring tools, including Hach Water Information Management Solution (Hach WIMS<sup>™</sup>) software.

#### Wastewater and Merchant Biosolids Operations – Naugatuck, Connecticut

- Responsible for supporting the ongoing operations at the Borough of Naugatuck under two contracts, one for the O&M of the 10.3-MGD wastewater treatment plant and sewer collection system, and a second for the operations and management of a biosolids merchant operation processing solids from 60 municipalities in New England and New York – including biosolids from other local Veolia wastewater O&M projects. Veolia has also managed and implemented capital projects, using the design/build/operate (DBO) approach for upgrades and expansions.

#### Wastewater O&M and Capital Programs – Wilmington, Delaware

- Technical Support Manager for the ongoing O&M of the City of Wilmington's 134-MGD conventional activated sludge wastewater treatment facility, which ranks as the largest wastewater treatment plant in the State of Delaware, and three large sewer pump stations, with a combined flow of 222.05-MGD.

### Education:

MS, Chemical Engineering, Engineering School INSA Lyon (France)  
BS, Biological/Biochemical Engineering, Toulon University (France)



## Current and Past Relevant Experience/Work History:

- **2006-Date: Technical Director and Manager – Municipal & Commercial Technical Support Group and Technical Direction Group – Veolia North America, Inc. – Naugatuck, Connecticut**
    - Works as a core part of Veolia's corporate support team for the ongoing O&M contracts in the Northeast, as well as new project development.
    - Responsible for developing economic models for a better understanding of costs structure such as the fixed/variable cost model for Veolia's wastewater and merchant biosolids operations. That work covered the merchant biosolids operations at the Borough of Naugatuck, and the revenue sharing model for the wastewater and merchant biosolids operations at the City of Cranston, Rhode Island.
    - Worked with the operations, maintenance and management (O&M) team at a 0.4-MGD Zenon® Membrane Filtration Facility in Massachusetts, to complete a detailed technical review of operations.
    - This review focused on optimizing power usage, water reuse, staffing and support approaches, maintenance, and chemical usage.
    - Supports engineering efforts to implement new technology and equipment installation, as well as improvements for existing systems and facilitates. Coordinates information and technology exchange with Veolia's Technical Direction Group in France and other parts of the world.
    - Involved in preparing process flow sheet material and thermal balances, modeling plants operation using Biowin® simulations for Veolia's wastewater operations projects with the communities of: Southbridge, Massachusetts; Poughkeepsie, New York; Redding, Connecticut; and Brockton, Massachusetts, among others. Provided specific support to the Veolia operations team at the Wilmington, Delaware wastewater treatment plant for the implementation of the CSO Real Time Control system.
    - Worked with Veolia industrial site operations projects to evaluate industrial waste streams prior to acceptance for treatment. This work includes preparing OPEX spreadsheets, and implementing the company's cost of goods sold (COGS) programs.
  - **2003-2006: Commissioning Manager – Veolia Water – OTV SA – Paris, France**
    - Worked as part of Veolia's major projects group in Europe (OTV) for the startup and commissioning a new wastewater treatment plant in the City of Acheres, France. This was a 450-MGD wastewater treatment plant, treating wet weather flows, and uses Veolia Water's Biostyr® technology for nitrification and the Degremont Biofor® technology for partial denitrification. (The design, build and commissioning cost for the plant was more than \$494 million.) Involved with operations engineering during the design of the plant, including ergonomics studies, definition of the operation crew organization, estimation of future operating costs, preparation of the operation team training program, management of the implementation of the computerized maintenance management system (CMMS), and preparation of process reports.
  - **2003: Technical Support Contract Manager – Veolia Water – OTV, SA – Paris, France**
    - Managed a team of 10 responsible for providing technical support for the 65-MGD Colombes Wastewater Treatment Plant serving Paris, France. Provided assistance for the operation of the four Pyrofluid® fluidized bed incinerators at the plant (total capacity of 212 dry tons/day) and the 65 Biostyr® and Biofor® biofilters for carbon removal, nitrification and denitrification.
  - **2001-2002: Project Manager – Veolia Water – OTV, SA – Paris, France**
    - Managed operation, including a staff of 19, for a stormwater treatment plant in the Acheres area of Paris, France. Initial plant capacity was 315-MGD in wet weather and was extended to 550-MGD in 2002. The plant uses ACTIFLO® technology and achieves chemical de-phosphatation during dry weather. Prepared standard operations procedures (SOPs) for operations during the plant configuration switch between dry weather and storm event conditions.
  - **1997-2001: Assistant Project Manager – Veolia Water – OTV – Paris, France**
    - Managed operations, including a team of 10, for the 10.5-MGD Cergy-Pontoise Wastewater Treatment Plant, Paris, France. The plant utilized the Biostyr® technology for nitrification. Had responsibility for operations budget control, process optimization, writing of monthly and annual process reports, as well as the development of the sludge land application program.
  - **1995-1997: Industrial Solid Waste Management Engineer – Veolia Environmental Services (Veolia Water sister company) – Paris, France**
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## Timothy J. Muirhead, P.E.

### Vice President and Technical Manager

32 years  
total experience

29 years  
with Veolia

Mr. Muirhead is Vice President of Account Management and works as part of the Municipal and Commercial Group of Veolia in North America. He provides leadership in the areas of water and wastewater treatment, biosolids management, organics-to-energy (source-separate organics) solutions and process optimization. Under this renewal effort for the City of New Bedford's wastewater operations, he has been engaged in developing the innovative biosolids solution proposed, which in turn is based on a successful solution developed for Veolia's operations, maintenance and management (OM&M) contract with the Downriver Utility Wastewater Authority (DUWA), Michigan, for their 150-MGD Advanced Secondary Wastewater Plant.

Prior to this, Mr. Muirhead was a Technical Manager with Veolia's North American Technical Support Group, providing business development and technical, and operations management support to municipal, commercial and other service projects in the water and energy business lines of Veolia North America's Municipal and Commercial Group. Mr. Muirhead also served as the Vice President for Account Management with Veolia Water in the East region, for new contracts and renewals efforts with clients including: Fulton County, Georgia (North and South area wastewater operations); and New Orleans, Louisiana (wastewater operations). Additionally, he provided leadership for Veolia's biosolids projects development and large surface water treatment and municipal wastewater treatment operations support activities in the North American market, and additional support of global biosolids-to-energy projects.

Mr. Muirhead has been involved with engineering, operations and management for wastewater plants (18.5- to 185-MGD), in providing support services for process control and operations of oxygen activated sludge plants (210-MGD to 1.2-BGD). Additionally, Mr. Muirhead has been involved in implementing facility management programs, process improvements, and Class A biosolids product marketing plans at in-vessel biosolids composting facilities, ranging in size from 14.3 to 45 dry tons per day (DTPD).

## Related Project Experience:



### DUWA, Michigan – Technical Support Manager for Biosolids Upgrade

- DUWA ranks as the second largest wastewater system in Michigan, serving 13 member communities. Veolia, supported by Veolia Water Technologies, is engaged in a progressive Design-Build-Operate (pDBO) delivery capital project at the wastewater plant to add two BioCon™ belt drying trains (20-DTPD capacity each). DUWA's treatment plant produces centrifuge dewatered (raw) biosolids, and the BioCon belt drying system provides in-direct heat drying technology, which has proven successful in handling high volatile solids (%VS) and fiber content in raw/undigested cake solids. Veolia Water Technologies has 11 BioCon dryer units that are processing raw/undigested sludge at other wastewater sites in the U.S.



### Fulton County, GA – Multiple Wastewater Contracts and Operations

- Worked as regional Technical Manager and Business Manager for Veolia's two ongoing O&M projects with Fulton County, including: North Fulton Service Area wastewater operations which began in 2010 (a 24-MGD activated sludge treatment plant, a 15-MGD MBR treatment plant, a 1-MGD oxidation ditch treatment plant, a 0.2-MGD effluent land application system, 30 pump stations, and sludge disposal); and the South Area/Camp Creek contract which began in 2016 (24-MGD activated sludge plant, 18 pump stations and 12 force main air relief valves).



### New Orleans, LA – Hurricane Recovery and Wastewater Facilities O&M

- Supports the ongoing O&M of two wastewater plants (122-MGD East Bank and 20-MGD West Bank) and sludge operations (40-dry-ton-per-day fluidized bed incinerator). Worked as part of the Veolia technical team developing new biosolids efficiency approaches.

## Education/Training:

MS, Environmental Engineering, Colorado State University, 1987 and BS, Chemical Engineering, Colorado State University, 1986

## Licenses/Certifications:

Registered Professional Engineer, TN  
Class IV Wastewater Treatment Operator,  
Certified Environmental Operator



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## Experience/Work History:

- **2014-Present: Vice President of Account Management – Veolia North America – Knoxville, Tennessee**
    - Works in the Corporate business development group for major municipal and commercial projects with a focus on large municipal O&M services contracts and complex public/private partnerships.
    - Currently working as part of the Veolia technical and management team at the 150-MGD Advanced Secondary Wastewater Plant under a contract with the newly formed Downriver Utility Wastewater Authority (DUWA), Michigan. The DUWA systems ranks as the second largest wastewater system in the State of Michigan, serving a population base of more than 350,000 in a service area composed of 13 member communities. The wastewater plant treatment process consists of influent pumping, preliminary treatment, primary treatment, secondary treatment (high-purity oxygen activated sludge with secondary settling), and UV disinfection. Chemical addition is used to facilitate phosphorus removal, and biosolids generated are dewatered at the plant and transported off-site for disposal. Treated effluent is discharged to the Trenton Channel of the Detroit River. The system also includes a 15 million gallon wet weather storage tunnel that is used to retain excess wet weather flows during rain events. Veolia and VWT are working on the progressive Design-Build-Operate (pDBO) delivery of two BioCon™ belt drying trains (20-DTPD capacity each) for DUWA's treatment plant, which also produces centrifuge dewatered (raw) biosolids. Veolia's BioCon belt drying system is the only in-direct heat drying technology that has proven to successfully handle high volatile solids (%VS) and fiber content in raw/undigested cake solids and the company has 11 BioCon dryer units that are processing raw/undigested sludge.
  - **2004-2013: Vice President - Account Management (East region) – Veolia Water North America –South, LLC - Knoxville, Tennessee**
    - Served as the East region business and account manager for Veolia Water's O&M projects in the region. Role involves providing management and technical leadership for regional operations, including: developing the concept of a scalping dryer for the 40-dtpd fluidized-bed incinerator at the New Orleans, Louisiana, 122-MGD East Bank Wastewater Plant, to yield significant fossil fuel savings; providing conceptual design, technical and commercial contracting support work for a new 35-dtpd thermal dryer system and 4-megawatt (MW) biogas-to-energy cogeneration facility at Veolia Water's 134-MGD Wilmington, Delaware, wastewater treatment facility O&M project site; and providing leadership for the procurement, contract negotiation and startup support for a new wastewater project in the North and South Areas of Fulton County, Georgia, involving O&M of four wastewater plants (including a new 15-MGD submerged membrane bioreactor treatment plant) and 46 lift stations, as well as support to an O&M staff of 85.
  - **2002-2003: Vice President of Biosolids Market Development (2002-2003) and Residuals Product Manager (1995-2001) – Veolia Water North America Operating Services, LLC – Knoxville, Tennessee**
    - Provided oversight and management for the biosolids/residuals business in North America. Developed the company's biosolids/residuals business initiative and coordinated strategy implementation, including growth of new business and performance enhancement of existing business that promotes in-vessel composting and thermal drying/pelletization technologies and the production of Class A/Exceptional Quality (EQ) products for bulk market, sales and distribution.
    - Developed and implemented a business management plan and process improvements program at Veolia's 45-dtpd Baltimore City Composting Facility (BCCF). The BCCF processes dewatered cake biosolids from the City's Back River Wastewater Treatment Plant for conversion within enclosed, batch reactors into Class A/EQ compost project. Served as interim project manager at the BCCF while developing an upgraded product marketing, bulk sales, and regional distribution program.
    - Provided technical assistance in the process development of the 65-dtpd Toronto, Ontario organic fertilizer facility using the SEGHERS drying/pelletization technology, and development of the 31,000-tpy dried and pelletized product marketing and distribution program. Involved in development of a design/build/operate beneficial-reuse biosolids project for the Metropolitan Water Reclamation District of Greater Chicago (MWRD). Developed the dried product marketing and pellet distribution program at this facility, the third largest Class A biosolids facility in the U.S.
  - **1994-1995: Area Manager of Client Services – Veolia Water North America Operating Services (Professional Services Group, PSG, a predecessor company) – Knoxville, Tennessee**
  - **1991-1994: Project Manager – Veolia Water (PSG) - Schenectady, New York**
  - **1990-1991: Special Projects Manager – Veolia Water (PSG) – Knoxville, Tennessee**
  - **1989-1990 – Process Engineer – Metro Wastewater Reclamation District - Denver, Colorado**
  - **1987-1989 – Operations Specialist – Metro Wastewater Reclamation District - Denver, Colorado**
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## Kumar Upendrakumar, P.E., BCEE

Manager – Technical & Performance Group



29 years  
total experience

11 years  
with Veolia

Mr. Upendrakumar is the Director of Wastewater within the Treatment Plant Optimization Group which is under the Municipal and Commercial Technical & Performance Group of Veolia in North America. In this role, he works as part of the core technical support team for ongoing OM&M projects and new operations in North America, which involves providing engineering and process operations support for wastewater and biosolids operations projects throughout North America. This work has included supporting biosolids and wastewater operations in Canada.

Veolia Technical & Performance Group is responsible for providing technical support and capital project expertise for Veolia wastewater projects and operations throughout North America. They also direct environmental monitoring and asset life management programs, and delivery of information technology support. Additionally, this Group is responsible for centralizing technical knowledge, coordinating resources, integrating training and applying the best practices.

Mr. Upendrakumar has worked with Veolia since 2009 as part of the company's corporate support groups. Prior to his current role, he was the director of Wastewater Engineering for with the Technical Direction Group (TDG) of Veolia Water North America Operating Services, LLC. This involved providing engineering, research and development and related technical support for engineering (design/build, design/build/operate), operations, maintenance and management (OM&M) and related project work in North America.

Mr. Upendrakumar's background includes almost 30 years of experience in national and international projects for municipalities and industries. His expertise includes design of wastewater collection and treatment systems employing a wide range of technologies and processes, and solids management systems. This work has included the design of: sequencing batch reactor (SBR) treatment systems; aerobic treatment systems; chemical and biological nutrient removal (BNR) systems, including enhanced biological phosphorus removal (EBPR) and nitrification/denitrification processes; anaerobic treatment systems for high strength industrial wastewaters; as well as design of solids processing systems.

### Related Project Experience:



#### Milwaukee, Wisconsin – Wastewater OM&M Contract

- Technical Manager supporting Veolia's ongoing OM&M contract with the Milwaukee Metropolitan Sewerage District (MMSD). Work has focused in the areas of operations and process optimization for the MMSD's two large wastewater plants, the 330-MGD Jones Island secondary activated sludge wastewater treatment plant and the 300-MGD South Shore tertiary activated sludge wastewater treatment plant. This work has included: design and pilot testing of full-scale enhanced biological phosphorus removal (EBPR) and denitrification at the South Shore Facility; optimization of dewatered sludge solids concentration for energy savings during Milorganite production at the Jones Island Facility; eliminating "Nitrite Lock" conditions; evaluation of nitrification/ denitrification for energy savings; and Team Member/Task Leader for the preparation of the MMSD's 2010 Facilities Plan.



#### Winnipeg, Manitoba, Canada – Wastewater Operations

- Under a 30-year Alliance partnership agreement, Veolia and the City are collaborating on capital improvements and work together to provide ongoing strategic advice and guidance on design, construction, technology and operational needs for three Winnipeg wastewater treatment and biosolids facilities. The City's facilities include three wastewater treatment plants (302-MLD, 60-MLD and 32-MLD) and biosolids processing facilities. The wastewater system serves more than 650,000 people in and around the City of Winnipeg. Provided biological nutrient removal (BNR process expertise to convert high purity oxygen activated sludge processes at the existing South End Water Pollution Control Centre (WPCC) and North End WPCC related to facilities for phosphorus removal, nitrification and denitrification.

### Education/Training:

MS, MS, Environmental Engineering, Marquette University, Milwaukee, Wisconsin  
BS, Civil Engineering, Bangalore University, India

### Licenses/Certifications:

Professional Engineer, Indiana and Wisconsin  
Board Certified Environmental Engineer

# Kumar Upendrakumar, P.E., BCEE

Manager – Veolia Technical & Performance Group



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## Experience/Work History:

- **2013-Present: Director, Wastewater – Process Optimization – Technical & Performance Group – Municipal & Commercial – Veolia North America – Indianapolis, Indiana**
    - Works as part of the core support team for Veolia's ongoing O&M projects and operations in North America. Provides engineering and process operations support for wastewater and biosolids operations projects throughout North America. This work has included supporting biosolids and wastewater operations in Canada.
    - Managed the Anaerobic Digester capacity evaluation and risk management task for Winnipeg's Water Pollution Control Centre, as part of a larger engineering and operations program for the City of Winnipeg, Manitoba, Canada.
    - Served as technical expert on due diligence evaluation of an anaerobic digester treating manure and food wastes near Grand Rapids, Michigan. Food wastes were from a baby food manufacturer, vegetable farmers, and other manufacturing operations. Biogas from anaerobic digester was used in two GE Jenbacher engine to produce energy with heat captured for digester heating (CHP unit).
    - Conducted anaerobic digester capacity evaluations at several Veolia operated facilities to assess feasibility of adding Fats, Oils and Grease (FOG) and Food Wastes to increase biogas production and energy generation using CHP units.
  - **2009-2013: Director, Wastewater Engineering – Technical Direction Group (TDG) – Veolia Water North America Operating Services, LLC – Indianapolis, Indiana**
    - Provided leadership and support for engineering and related activities for municipal and industrial project sites throughout North America. This included providing: back-office support (project reviews and start-up services); due diligence support services (process review and validation, vendor and equipment review, pricing confirmation, and assistance with risk analysis); capital improvement program development and support; technology reviews and research and development activities support; design; and process benchmark standard systems support.
    - Responsible for providing leadership and support for engineering and related activities undertaken by Veolia Water's TDG group in support of projects including the ongoing O&M contract with the MMSD for the wastewater facilities in Milwaukee, Wisconsin. This work has included: design and pilot testing of full-scale EBPR and denitrification at the 300-MGD South Shore Water Reclamation Facility; optimization of dewatered sludge solids concentration for energy savings during Milorganite production at the 300-MGD Jones Island Water Reclamation Facility; evaluation of nitrification/denitrification for energy savings; and Team Member/Task Leader for the preparation of the MMSD's 2010 Facilities Plan.
    - Provided BNR process expertise to convert high purity oxygen activated sludge processes at the existing South End Water Pollution Control Centre (WPCC) and North End WPCC in Winnipeg, Canada to biological nutrient removal facilities for phosphorus removal, nitrification and denitrification.
    - Assisted the City of Lathrop, California, wastewater facility in meeting effluent total nitrogen limits by proposing operational changes to the nitrification/denitrification MBR facility.
  - **2007-2009: Senior Project Manager – CDM – Indianapolis, Indiana**
  - **2005-2007: Symbiont (formerly Triad Engineering Inc.) – Indianapolis, Indiana**
    - Regional Office Manager, Senior Project Manager/Process Engineer – Symbiont (formerly Triad Engineering Inc.) – Indianapolis, Indiana – and 1996-2004: Senior Project Manager/Process Engineer – Symbiont (formerly Triad Engineering Inc.) – Milwaukee, Wisconsin
  - **1991-1996: Process/Project Engineer – Applied Technologies Inc., Brookfield, Wisconsin**
  - **Professional Affiliations:**
    - American Water Works Association
    - Water Environment Federation – Served as Reviewer on the WEF Manual of Practice (MOPs), including:
      - MOP 31 - An Introduction to Process Modeling for Designers (First Edition) and Wastewater Treatment Process Modeling (Second Edition);
      - MOP 37 - Operation of Nutrient Removal Facilities (formerly Nutrient Removal Biological and Chemical Systems for Nutrient Removal);
      - MOP 8 - Chapter 15, Suspended Growth Biological Treatment and MOP FD-17, Prevention and Control of Sewer System Overflows
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**Michael McLain**  
East Region Health & Safety Manager -  
Veolia North America

8 years  
total experience

4 years  
with Veolia

**Professional Background:**

Mr. McLain is the East Region Health & Safety Manager for Veolia, and is part of the company's Management Systems and Health & Safety group in North America. This group is responsible for safety, compliance and training in support of the water and wastewater operations of Veolia Water and the energy utility operations of Veolia Energy.

Mr. McLain has responsibility for providing safety and environmental compliance oversight and support for ongoing projects and new project transitions in the Northeast and Mid-Atlantic regions. He also supports other projects and operations for Veolia in North America. This role includes supporting ongoing projects and operations, as well as new project transitions.

Mr. McLain joined Veolia in 2015, and he has more than eight years of overall industry experience related to health and safety management.

Mr. McLain is well versed in OSHA and Canadian (CSA) regulations, and he also has experience with the Federal Motor Carrier Safety Regulations and Process Safety Management of Highly Hazardous Chemicals programs.

Prior to his current role, Mr. McLain worked as a Regional Safety Manager with Veolia in the Central region, supporting water, wastewater and energy operations in the U.S. and Canada.

Mr. McLain is skilled in developing and implementing site-specific health and safety plans and emergency response plans and performing injury and accident investigations.

**Related Project Experience:**

**Wastewater O&M Projects and Operations in Massachusetts**



Veolia Regional Safety Manager responsible for supporting new project transitions and ongoing operations in Massachusetts, including City of New Bedford's 30-MGD secondary activated sludge wastewater treatment plant. Works with Veolia's Site Safety Manager at New Bedford, and similar project/operation sites, to support safety and compliance training programs, safety program and procedures maintenance and updates, as well as in resolving any safety and compliance issues.

**Energy, Water and Wastewater Operations in Central Region**



- Veolia Safety Manager for water, wastewater and energy utility operations, maintenance and management (O&M) contracts in the Central U.S. These operations include O&M services for the three thermal plants, which provide steam to the University of Minnesota's Twin Cities campus, operations and management of a district energy network serving 30 large utility customers in the central business district of the City of Tulsa, Oklahoma, with centrally-produced steam and chilled.

**Oil and Gas Industry Operations Support – Tulsa, Oklahoma**



- Worked as Safety Manager and Coordinator with a private company that served oil and gas industry clients in the Central region of the U.S. Responsible for all aspects of safety program oversight, which included safety inspection, safety document development, as well as training and monitoring.

**Education:**

BS, Industrial Safety, University of Central Oklahoma, 2012



## **Current and Past Relevant Experience/Work History:**

- **2018-Present: Northeast Regional Corporate Safety Manager – Veolia North America – Boston, Massachusetts**
    - Responsible for safety and compliance for ongoing water, wastewater and energy operations projects, owned asset operations and capital and construction project sites in a regional service area that includes the water and wastewater operations in the state of Massachusetts.
    - Responsible for staff training, safety audits, development and maintenance of safety plans and standard operations procedures (SOPs), and works to resolve any safety incidents at operations projects.
    - Other responsibilities in this role include: supporting project transitions and new project startups in the region; managing Veolia's Municipal and Commercial businesses Driver Qualification files; track and enter safety and compliance incident in the Intalex system; conducting bi-annual safety audits for 48 project/operations locations in the region; and managing injury and illness investigations and claims in conjunction with project sites to complete investigations to determine causality.
  - **2015-2018: Senior Safety Associate – Veolia Water North America – Central, LLC – Tulsa, Oklahoma**
    - Started as a Safety Associate and then moved into the role of Senior Safety Associate. Responsible for health and safety and environmental compliance for operations, facilities and projects in the Central region. Regional operations included water, wastewater and energy projects in service area that covered the Central states in the U.S., along with projects and operations in Canada.
    - Conducted bi-annual safety audits for 34 operations/project locations in the region. Managed Veolia's Municipal and Commercial businesses Driver Qualifications files, and develop Process Safety Management (PSM) programs for multiple projects in the region.
  - **2012-2015: Health and Safety Coordinator - Premier Energy Technical Services - Tulsa, Oklahoma**
    - Managed the development, monitoring and enforcements of safety and compliance for this instrumentation and control systems company. Technical Services provided design, development, deployment, management and maintenance of equipment used to monitor and control various types of machinery, processes, and engineering systems in the oil and gas industry.
    - Engaged in safety program development, staff training, as well as monitoring and reporting.
    - Responsible for daily safety inspections and provided safety guidance and coaching to plant employees. Conducted contractor and plant personnel safety training.
  - **2011: Safety Co-op/Internship - General Electric (GE) - Chicago, Illinois**
    - Updated the plant's MSDS database to meet the new SDS requirements in GE's company database GenSuite.
    - Prepared a "Management of Change" process for the relocation of machinery for a large process/ production area to ensure all safety issues in the process were covered during and after the relocation.
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**Hans E. Tuneblom, P.E.**  
**Director - Capital Program Management -**  
**Veolia Water North America – Northeast, LLC**

**30 years**  
total experience

**10 years**  
with Veolia

**Professional Background:**

Mr. Tuneblom is Director and Manager of the Capital Program Management (CPM) team for Veolia North America - Northeast, LLC (Veolia). In this role, he focuses on developing capital projects with existing and new clients in the Mid-Atlantic and Northeast regions. This includes directing and supporting design/build, design/build/operate (DBO) and other capital project work efforts at water, wastewater and energy operations/projects. This has included operations, maintenance and management (O&M) and other projects sites in the state of Massachusetts and other parts of the region.

Mr. Tuneblom has more than 30 years of experience in the engineering and construction industry, including involvement with design, construction and operation of water, wastewater and related systems. His experience includes budget planning and management, contract administration, scheduling and negotiations. Mr. Tuneblom has managed the delivery of a number of complex, multi-million dollar infrastructure projects on time and within budget. His expertise spans water treatment and distribution, wastewater collection and treatment, gas transmission, emissions controls and other areas of environmental construction.

Mr. Tuneblom has proven expertise and experience in the areas of contract administration, client relations, quality control, construction oversight and management, resource management, as well as financial management. His experience has included: delivering complex multi-million dollar, time-sensitive infrastructure projects on time and within budget; developing strategic solutions and innovative project delivery systems; managing multiple project assignments; communicating with clients, consultants and contractors; budget planning and management; contract administration, scheduling and negotiations; and preparing detailed project schedules and budgets based on priority, financial limitations, regulatory issues and construction complexity.

**Related Project Experience:**



**Water Treatment Facilities Capital Program – Leominster, Massachusetts**

- Managed multiple capital projects for upgrade and expansion of the City’s water treatment capabilities as part of Veolia’s ongoing O&M contract. This work included: a major rehabilitation of the Notown Water Treatment Plant (\$5 million in design and construction for water facilities improvements) using a design/build approach; and upgrade of the Distributing Reservoir water treatment plant (Veolia identified design changes early amounting to significant capital savings and brought the construction project in \$3 million under its budget with no change orders).



**Water Treatment Facility Upgrades – Town of Sturbridge, Massachusetts**

- Managed capital project upgrades of the Town’s water treatment plant (which is contract operated by Veolia), including: upgrade of iron-removal water treatment plant; preparation of a corrective action plan; pilot testing to address groundwater under the influence in Well 1 at the iron removal plant; engineering service to deliver upgrades required under approved correction plan; and construction management for the upgrade project work.



**Wastewater Treatment Plant Upgrades – Town of Smithfield, Rhode Island**

- Managed Capital Project for the upgrade of the Town’s 3.5-MGD Advanced Activated Sludge wastewater treatment plant. The work involved pilot testing Veolia’s Actiflo® high-rate clarifications process for application at the treatment plant. The pilot testing proven the approach and Veolia provided engineering support and construction management services for the upgrade project work.

**Education:**

MS, Water Resources and Environmental Engineering, Villanova University, Pennsylvania  
BS, Mechanical Engineering, Lafayette College, Easton, Pennsylvania

**Licenses/Certifications:**

Registered Professional Engineer,  
Pennsylvania

## Current and Past Relevant Experience/Work History:

- **2009-Date: Director – Capital Programs Management Group – Veolia North America – Northeast, LLC – Boston, Massachusetts**
    - Manages regional Capital Programs group, which is responsible for delivery of engineering, construction management, DBO, and related services to municipal, commercial and industrial clients in the Northeast and Mid-Atlantic regional service areas. Oversees the development, implementation and management of capital project including water and wastewater improvements. Works with project stakeholders, contractors, engineers and others involved in the development of capital projects. Conducts preliminary engineering, cost estimating and forecasting. Manage outside engineering, procurement of equipment, and the management of construction contractors for the construction phase. Conduct project oversight on current and future projects
    - Key capital projects management and implemented have included:
      - Water and Wastewater Improvements - City of Leominster, Massachusetts – Managed multiple water and wastewater capital projects, including: the Notown Water Treatment Plant major rehabilitation (\$5 million in design and construction for water facilities improvements) using a design/build approach; water and wastewater plant improvements using design/build approach (~\$20 million in improvements); and the Distributing Reservoir water treatment plant upgrade which went on-line in 2010 (Veolia identified design changes early amounting to significant capital savings and brought the construction project in \$3 million under its budget with no change orders); and the other water and wastewater system improvements completed in 2012.
      - Water Treatment Plant Upgrades – Town of Sturbridge, Massachusetts - Managed a capital project for upgrade of the Town's water treatment plant (which is contract operated by Veolia); constructed value for this capital project was \$1,630,217. Work scope included: engineering and construction management services for upgrade of iron-removal water treatment plant; preparation of a corrective action plan; pilot testing to address groundwater under the influence in Well 1 at the iron removal plant; engineering service to deliver upgrades required under approved correction plan; and construction of upgrades.
      - Wastewater Facilities Energy Upgrades - Town of Smithfield, Rhode Island - Veolia teamed with the Town in 2011 to implement a capital improvement project at their wastewater treatment plant (which is contract operated by our firm under a long-term agreement). This involved installing energy efficient lighting in the treatment facility buildings. Town was awarded ARRA funding along with National Grid incentives, which resulted in a zero cost to the Town for this environmentally conscious initiative. The constructed value of capital improvement was \$47,000.
      - Wastewater Treatment Plant Process Upgrades – Town of Smithfield, Rhode Island - Veolia teamed with the Town for a process pilot plant study, which identified Veolia's proprietary Actiflo<sup>®</sup> process as the most reliable and cost effective approach. The use of technology made this project eligible for State's Green Project Reserve Fund, and the Town awarded Veolia a contract for engineering support and construction management services for the tertiary treatment upgrades; project had a constructed value of \$5.8 million.
  - **2007-2009: Senior Project Manager – Infrastructure, Water and Process Technologies – General Electric (GE) – Watertown, Massachusetts**
    - Led cross-functional teams to design, install and commission water treatment systems for municipal use, desalination, chemical processing and power generation. Acted as the primary point of contact with customers, managed and monitored project progress and provided routine status reports, and coordinated work with engineering, supply chain and service support. Participated in the development team to define the business requirements for a system wide Emergency Response Plan (ERP).
  - **2001–2007: Senior Project Manager – Enginuity, LLC – Fort Collins, Colorado**
    - Led cross-functional teams to plan, design, install and commission engineered systems for regulatory compliance, engine/compressor upgrades, and controls and automation for the gas pipeline industry. Acted as the primary point of contact with customers, managing project progress, providing status reports and coordinating work with sales, marketing, engineering, supply chain and service support. Assigned to a \$70 million Clean Air project for major interstate pipeline company that was \$3.5M over budget.
  - **1989-2000: Construction Engineer/Engineer – American Water Works Service Company, Inc. – New Jersey**
    - Developed and administered fast track, design-build and other project delivery systems; prepared budget estimates and provided design oversight to address operational constructability and bidability concerns; composed specifications for construction contracts and bidding documents supervising the bidding process and handling quality assurance and quality control efforts.
    - Reorganized corporate project delivery systems for a three-facility, \$15 million water treatment plant project utilizing the design-build approach to complete all plants within an 18-month period.
-



## **Section 6.0 – Supplemental Information**

### **Licenses**

**(Copies of Massachusetts Wastewater Operator  
and Other Licenses held by  
Veolia OM&M team staff at New Bedford.)**



**John Caron**

**COMMONWEALTH OF MASSACHUSETTS**  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**John P. Caron**  
**103 Braley Hill Road**  
**Rochester, MA 02770-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

Signature of Licensee

REGISTRATION NO.	EXPIRATION DATE	GRADE
11397	12/31/2021	7-C FULL
PURSUANT TO THE GENERAL LAWS		ACTIVE

Collection Systems Operator Certificate

**New England  
Water Environment Association**

*This certifies that*

**John Caron**

**HAS, THROUGH TRAINING, EXPERIENCE AND EXAMINATION, QUALIFIED AS A COLLECTION SYSTEMS OPERATOR UNDER THE VOLUNTARY CERTIFICATION PROGRAM DEVELOPED BY THE NEW ENGLAND WATER ENVIRONMENT ASSOCIATION.**

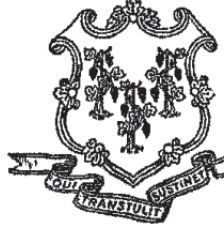
**C- 4554**  
CERTIFICATE NO.

CHAIR  
COLLECTION SYSTEMS CERTIFICATION COMMITTEE

**May 15, 2007**  
DATE INITIALLY ISSUED

PRESIDENT  
N.E. WATER ENVIRONMENT ASSOCIATION

State of Connecticut  
Department of Environmental Protection



This is to Certify that

John P. Caron

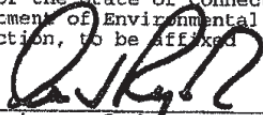
has been duly examined in accordance with the provisions of Chapter 474  
of the General Statutes, as amended and is hereby approved to operate  
A Connecticut Wastewater Treatment Plant as a

Class IV Operator



DATE: 10/01/97  
LJG #: 1806-R

IN WITNESS WHEREOF, I have here  
unto set my hand and caused the  
Seal of the State of Connecticut,  
Department of Environmental  
Protection, to be affixed

  
Commissioner of the Department of  
Environmental Protection

# Kenneth Henrique

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Kenneth C. Henrique**  
**23 Collins Ave.**  
**Swansea, MA 02777-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

REGISTRATION NO	EXPIRATION DATE	GRADE
7296	12/31/2021	7-C FULL ACTIVE

PURSUANT TO THE GENERAL LAWS

Signature of Licensee



Collection Systems Operator Certificate

**New England  
Water Environment Association**

*This certifies that*

**Kenneth Henrique**

HAS, THROUGH TRAINING, EXPERIENCE AND EXAMINATION, QUALIFIED AS A COLLECTION SYSTEMS OPERATOR UNDER THE VOLUNTARY CERTIFICATION PROGRAM DEVELOPED BY THE NEW ENGLAND WATER ENVIRONMENT ASSOCIATION.

C-2940  
CERTIFICATE NO.

July 6, 1999  
DATE INITIALLY ISSUED



*Gregory T. Kild* CHAIR  
COLLECTION SYSTEMS CERTIFICATION COMMITTEE

*[Signature]* PRESIDENT  
N.E. WATER ENVIRONMENT ASSOCIATION

**State of Rhode Island and Providence Plantations**

Board of Certification of Operators  
of Wastewater Treatment Facilities

Registrant

**Kenneth Henrique**

No:

**806**



Grade

**4**

Exp. Date

**12/31/2019**

Chair

*[Signature]*

# Collis Soares

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Collis L. Soares**  
**31 Ivy Road**  
**New Bedford, MA 02745-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

REGISTRATION NO	EXPIRATION DATE	GRADE
<b>15772</b>	<b>12/31/2021</b>	<b>7-C FULL</b>
PURSUANT TO THE GENERAL LAWS		<b>ACTIVE</b>

Signature of Licensee

# Robert Arruda

D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Robert W. Arruda**  
**77 Pontiac St**  
**New Bedford, MA 02745-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**




REGISTRATION NO.	EXPIRATION DATE	GRADE
6528	12/31/2021	6-C
PURSUANT TO THE GENERAL LAWS		ACTIVE

# Phillip Hannink

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Phillip S. Hannink**  
**53 Sagamore Street**  
**Somerset, MA 02726-**

*NOTE: You need to obtain 20 TCHs before 12/31/2021.*

  
Signature of Licensee

REGISTRATION NO.	EXPIRATION DATE	GRADE
<b>7292</b>	<b>12/31/2021</b>	<b>7-C FULL</b>

PURSUANT TO THE GENERAL LAWS  
**ACTIVE**



# Connor Riley

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Connor Riley**  
**6 LEEWARD WAY**  
**FAIRHAVEN, MA 02719-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

REGISTRATION NO.	EXPIRATION DATE	GRADE
<b>18297</b>	<b>12/31/2021</b>	<b>4-M OT/6-C OT</b>
PURSUANT TO THE GENERAL LAWS		<b>ACTIVE</b>

Signature of Licensee



# Christopher Rizzuto

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Christopher J. Rizzuto**  
20 Meadowood Dr  
8 Dartmouth, MA 02748-

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

*Christopher J. Rizzuto*

LICENSE NUMBER	EXPIRATION DATE	CATEGORY
7685	12/31/2021	7-C FULL ACTIVE

PURSUANT TO THE GENERAL LAWS

# Albert Santos, Jr.

COMMONWEALTH OF MASSACHUSETTS  
D.E.R.  
BOARD OF CERTIFICATION OF  
SOUTHERN CALIFORNIA REGISTERED PROFESSIONALS  
ISSUES THIS LICENSE TO:

**Albert F. Santos, Jr.**  
**3 Mohawk Drive**  
**SOUTH DARTMOUTH, MA 02748-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

*Albert F. Santos, Jr.*

IDENTIFICATION	EXPIRES	STATUS
5437	12/31/2021	7-C FULL ACTIVE

# Stephen Duckworth

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Stephen P. Duckworth**  
**465 Rockdale Avenue**  
**New Bedford, MA 02740-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

Signature of Licensee

REGISTRATION NO.	EXPIRATION DATE	GRADE
<b>10797</b>	<b>12/31/2021</b>	<b>4-MI OT 7/03</b>
PURSUANT TO THE GENERAL LAWS		<b>ACTIVE</b>



**Aaron Alfres**

COMMONWEALTH OF MASSACHUSETTS  
D E P  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Aaron G. Alfres**  
**14 BIRCHFIELD ST**  
**FAIRHAVEN, MA 02719-**

*[Handwritten Signature]*  
Signature of Licensee

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

REGISTRATION NO	EXPIRATION DATE	GRADE
18962	12/31/2021	4-M OT ACTIVE

PURSUANT TO THE GENERAL LAWS

# Greg Medeiros

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Greg A. Medeiros**  
**22 Grape Street**  
**New Bedford, MA 02740-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

REGISTRATION NO.	EXPIRATION DATE	GRADE
17450	12/31/2021	6-C FULL ACTIVE

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Greg A. Medeiros**  
**22 Grape Street**  
**New Bedford, MA 02740-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

REGISTRATION NO.	EXPIRATION DATE	GRADE
17450	12/31/2021	4-M OT/OE ACTIVE

# Kevin Costa

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Kevin Costa**  
**75 Raymond Street**  
**FALL RIVER, MA 02723-**

*NOTE: You need to obtain 20 TCHs before 12/31/2021.*

REGISTRATION NO.	EXPIRATION DATE	GRADE
18762	12/31/2021	4-M OT
PURSUANT TO THE GENERAL LAWS		ACTIVE

Secretary of Licenseable



# Kathleen Lambalot

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Kathleen Lambalot**  
**226 Peckham Rd.**  
**Acushnet, MA 02743-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**



Signature of Licensee

REGISTRATION NO.	EXPIRATION DATE	GRADE
<b>6240</b>	<b>12/31/2021</b>	<b>4-M OT/OE</b>
PURSUANT TO THE GENERAL LAWS		<b>ACTIVE</b>



# Dominic Galotti

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Dominic Galotti**  
**37 Ryan Street**  
**NEW BEDFORD, MA 02740-**



Signature of Licensee

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

REGISTRATION NO.	EXPIRATION DATE	GRADE
<b>15831</b>	<b>12/31/2021</b>	<b>6-C OT 6-2018</b>
PURSUANT TO THE GENERAL LAWS		<b>ACTIVE</b>

# Randall Mendoza



Commonwealth of Massachusetts  
Division of Professional Licensure

**Hoisting Engineer**

HE-164565

Expires: 09/25/2020

RANDALL D MENDOZA  
15 FLORENCE ST  
NEW BEDFORD MA 02740



Commissioner

**Albert Santos, Jr.**

COMMONWEALTH OF MASSACHUSETTS  
D.E.P.  
BOARD OF CERTIFICATION OF  
WASTEWATER TREATMENT PLANT OPERATORS  
ISSUES THIS LICENSE TO

**Albert F. Santos, Jr.**  
**3 Mohawk Drive**  
**SOUTH DARTMOUTH, MA 02748-**

**NOTE: You need to obtain 20 TCHs before 12/31/2021.**

*Albert F. Santos, Jr.*  
Signature of Licensee

REGISTRATION NO.	EXPIRES ON DATE	GRADE
5437	12/31/2021	7-C FULL
PURSUANT TO THE GENERAL LAWS		ACTIVE

# John Rego






David Oliveira, Jr.

**COMMONWEALTH OF MASSACHUSETTS**  
**DIVISION OF PROFESSIONAL LICENSURE**  
BOARD OF  
ELECTRICIANS  
ISSUES THE FOLLOWING LICENSE  
REG JOURNEYMAN ELECTRICIAN

DAVID M OLIVEIRA JR  
373 CHASE RD  
NORTH DARTMOUTH, MA 02747-1009



*David M Oliveira*  
LICENSEE SIGNATURE

38917 E	07/31/2022	648798
LICENSE NUMBER	EXPIRATION DATE	SERIAL NUMBER

Michael Medeiros

**DIVISION OF PROFESSIONAL LICENSURE**  
**BOARD OF**  
**ELECTRICIANS**  
**ISSUES THE FOLLOWING LICENSE**  
**REGISTERED MASTER ELECTRICIAN**

**MICHAEL P MEDEIROS**  
**6 BLACKBIRD CT**  
**N DARTMOUTH, MA 02747-5303**

**13323 A**      **07/31/2022**      **653845**  
**LICENSE NUMBER**      **EXPIRATION DATE**      **SERIAL NUMBER**

LICENSEE SIGNATURE




Fold, Then Detach Along All Perforations

**COMMONWEALTH OF MASSACHUSETTS**  
**DIVISION OF PROFESSIONAL LICENSURE**  
**BOARD OF**  
**ELECTRICIANS**  
**ISSUES THE FOLLOWING LICENSE**  
**REG JOURNEYMAN ELECTRICIAN**

**MICHAEL P MEDEIROS**  
**6 BLACKBIRD CT**  
**N DARTMOUTH, MA 02747-5303**

**22356 E**      **07/31/2022**      **653853**  
**LICENSE NUMBER**      **EXPIRATION DATE**      **SERIAL NUMBER**

LICENSEE SIGNATURE







## **Section 6.0 – Supplemental Information**

### **Reference Projects (Detailed Summaries for Reference Projects)**

# City of New Bedford, Massachusetts



## Wastewater Operations, Maintenance & Management (OM&M) Contract

### Facilities:

- 30-MGD Activated Sludge secondary wastewater treatment plant, with peak capacity of 75-MGD
- Disposal of 6,500 dry tons per year of biosolids.

Veolia Water North America – Northeast, LLC (Veolia) began working with the City of New Bedford in 1990, starting with the transition of the City’s existing primary wastewater treatment facility and staff to our firm under a long-term agreement that has been renewed multiple times.

The New Bedford water pollution control facility became operational in 1973, and at the start of our O&M agreement the City was under regulatory mandate to upgrade the system.

Veolia worked with the City to achieve improved compliance and effluent discharges for the existing plant, and then on the process of planning and then constructing a new/upgraded treatment plant.

That work involved decommissioning the City’s old wastewater plant. We also assisted the City during the construction phase of the new facility 30-MGD activated sludge plant, which upgraded the plant to secondary treatment and went online in August 1996.

Facility compliance improved dramatically under Veolia’s operation, and we achieved continuous compliance with stipulations of a federal consent decree that superseded the existing NPDES permit to discharge.





Our O&M work for the new plant reduced historically high fecal coliform counts, an one obstacle to allowing the City to open shellfish beds that had been closed for over 20 years. We also:

- Instituted our expert operation, process modifications and controls that mitigated the vast majority of odors – and greatly improved community relations.
- Modified sludge processing and handling approaches that resulted in greatly reduced sludge hauling costs and energy consumption.
- Fabricated and installed catwalks to the primary scrubber vessels, increasing accessibility for maintenance and decreasing down time.

This is a unionized facility, and Veolia developed a partnership with organized labor, resulting in multiple successful union contract renegotiations.

Veolia has used capital design/construction and operations improvements approaches to enhance plant operations and address issues such as odors. This work included: process modifications and controls that mitigated the vast majority of odors, greatly improving community relations; modifying sludge processing and handling approaches, which resulted in greatly reduced sludge hauling costs and energy consumption; and our O&M team, with support from Veolia’s Capital Program Management (CPM) group in the Northeast region, fabricated and installed catwalks to the primary scrubber vessels, increasing accessibility for maintenance and decreasing plant/process down time.

Veolia assisted the City during the construction phase of upgrades to bring the wastewater treatment plant up to secondary treatment (1996), and then worked with the City to demolish old

plant components to City to create more Parkland area at the site which is home to Fort Tabor Park, a key public site that the treatment plant adjoins.

Additionally, when the City began restorations to the Fort Taber Park area, in 2000, our O&M and CPM teams support the work of fully restoring the historic lighthouse at the Fort.

This restoration work was carried out during the winter months of 2000 and 2001 inside the wastewater treatment plant's welding facility.

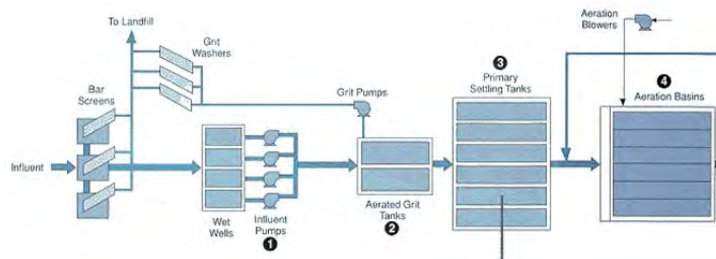


That site includes a 47-acre park, as well as a historic American Civil War-era military fort. The park's proximity to the sea on all three sides offers visitors sweeping views of Buzzards Bay and the Elizabeth Islands. Veolia's operation of the wastewater plant is required to meet strict regulatory requirements for discharges into the bay, as well as for odor and noise control, given the proximity to the park area

There are three separate odor control systems at this site – including separate odor control facilities/systems at the wastewater treatment plant and the sludge processing facilities.

These systems provide odor control for the air exhaust from:

- 1) Influent pumping station and headworks
- 2) Aerated grit tanks
- 3) Primary settling tanks
- 4) A second facility provides odor control for the off-gases from the aeration basins.
- 5) A third facility provides odor control for the sludge processing building.



The park's popularity clearly reflects Veolia's commitment to and success in controlling odors from the wastewater treatment process.

The project has been recognized with multiple awards, including:

- Outstanding Achievement Award from the U.S. Conference of Mayors in 1999.
- Multiple Peak Performance Awards from the National Association of Clean Water Agencies – Gold Award in 2007, Silver Award in 2005.
- Laboratory Excellence Award from the Massachusetts Department of Environmental Protection in 1993.
- Patriot Award from the U.S. Department of Defense in 2010.

Veolia is also active in the New Bedford community, contributing time and money to a variety of activities and events.

# City of Fall River, Massachusetts



## Wastewater Operations, Maintenance & Management (OM&M) Contract

### Facilities and Services:

- 30.9-MGD Pure Oxygen Secondary Wastewater Treatment Plant (which meets a BOD and TSS levels similar to New Bedford) serving residents in four communities and several outlying residential developments and businesses.
- 17 sewer pump stations that range in size from 0.04-MGD to 54-MGD.
- 281 miles of Sewer/Collection Lines and Collection System Rehabilitation
- 15-dtpd Multiple-Hearth Biosolids (Sludge) Incinerator
- Biosolids Disposal - 5,000 dry tons per year
- Stormwater System Management
- IPP Program Analyses and River Sampling
- Combined Sewer Overflow (CSO) Tunnel Management
- MS4 Stormwater Program Management





Veolia Water North America – Northeast, LLC (Veolia) began providing OM&M services to the City in 1994, and this contract has been renewed multiple time, with the current contract term for 10 years (with completion of the current contract scheduled for 2024).

Scope expansions have also increased Veolia’s collection system responsibilities, and a scope change was negotiated to expand the agreement to incorporate management of the City’s stormwater (MS4) program.

This contract began when the City hired Veolia to transition the operations from another OM&M service provider, with the goal of addressing long-standing issues and improving the operations.

During the first year of this new O&M partnership, Veolia mobilized specialists from our global operations to Fall River to evaluate the plant. Suggestions for performance improvements included increasing oxygen flow to the biomass, controlling biomass levels, monitoring concentrations levels and conducting more-frequent analyses, installing a computerized process control program and adding pertinent chemicals. This combination of process control for increasing facility efficiency and the adoption of new operational procedures directly impacted odor control.

The project scope now involves OM&M of the City’s 30.9-MGD pure oxygen secondary wastewater plant that serves residents in four communities and several outlying residential developments and businesses. In addition to the treatment facility, Veolia is responsible for sludge (biosolids processing and disposal), pump stations and a regional collection system.



Scope expansions to the O&M agreement over the years increased Veolia’s collection system responsibilities.

In early 2011, the U.S. Environmental Protection Agency (U.S. EPA) issued an administrative order to the City for not meeting permit compliance for their MS4 program, which was under City purview. At the City’s request for MS4 assistance, a scope change was negotiated to expand our agreement with Fall River to incorporate the stormwater program.

Veolia’s operations at this project have been recognized with multiple awards, including:

- New England Regional Operations and Maintenance Excellence Award from the U.S. EPA in 2007.



- Plant Performance Award (best large-scale sewer treatment facility) from the Massachusetts Water Pollution Control Association Inc. in 2007.
- Peak Performance Award, Silver Level, from the National Association of Clean Water Agencies in 2007.
- Regional Operations and Maintenance Excellence Award – Large Secondary Plant Category – in 2006.
- Peak Performance Award, Gold Award, from the Association of Metropolitan Sewerage Agencies in 2005.
- Peak Performance Award, Silver Level, from the National Association of Clean Water Agencies in 2004.
- Peak Performance Award, Gold Award, from the Association of Metropolitan Sewerage Agencies in 2002.
- Peak Performance Award, Silver Award, from the Association of Metropolitan Sewerage Agencies in 2001.
- Peak Performance Award, Gold Award, from the Association of Metropolitan Sewerage Agencies in 2000.



Veolia also maintains an active internship program at Fall River, working with Bristol Community College to provide real-world experiences in the wastewater field for students and developing a pool of potential recruits. A number of interns have been offered employment at the project as a result of this program.

# Milwaukee Metropolitan Sewerage District (MMSD), Milwaukee, Wisconsin



## Wastewater Operations, Maintenance & Management (OM&M) Contract

### Facilities and Services:

- 330-MGD Jones Island secondary activated sludge wastewater treatment plant
- 300-MGD South Shore tertiary activated sludge wastewater treatment plant
- Interplant Solids Pipeline System (between Jones Island and South Shore)
- Maintenance facilities, including the South 13th Street Maintenance Facility, the North 32nd Street and Hampton Avenue Facility and the North 44th Street Field Office
- Collection and conveyance system, including 374 miles of sewer lines, 28.5 miles of stormwater lines, a 500-million gallon deep tunnel system and 19 sewer and stormwater pump stations, ranging in capacity from 0.72-MGD to 69-MGD, along with three storm tunnel pump stations (70-MGD each)
- Biosolids handling for 51,000 dry tons per year (dtpy), with 48,000 dtpy Milorganite production management

- Management of the advanced asset management and capital programs, the central control system, the rolling stock, as well as the easements and other right-of-ways owned or controlled by the MMSD

Veolia Water Milwaukee, an affiliated company of Veolia Water North America – Northeast, LLC (Veolia), began a new long-term OM&M contract with this regional agency back in 2008, and the company’s work under this contract earned an early renewal for an additional 10-year term that has extended this OM&M contract through 2028.

The project’s performance history has been recognized with numerous awards, including the Distinguished Service Award from the National Council for Public-Private Partnerships. Both treatment plants have received NACWA Platinum Peak Performance Awards (since 2008) for perfect regulatory compliance for the past seven years.

Veolia’s operations also received the first-ever U.S. Water Prize in 2011 from the Clean Water America Alliance for O&M excellence in “green” initiatives to address greenhouse gas (GhG) reduction and achieve a high level of environmental sustainability using a resource recovery approach.

Located on a peninsula in the Milwaukee Harbor, the 330-MGD Jones Island facility is the oldest operating activated sludge plant in the U.S. Wastewater treatment at Jones Island consists of preliminary/primary treatment, secondary treatment, phosphorus removal, disinfection, and dechlorination. Solids removed from the primary clarifiers are pumped to the South Shore plant for anaerobic digestion and then returned to Jones Island for use in the production of Milorganite, an organic fertilizer.

The 300-MGD South Shore wastewater treatment facility, which has liquid processes similar to Jones Island, treats the majority of the wastewater flow from outlying service areas. Most of the conveyance system flows by gravity to the treatment facility.

The Metropolitan Interceptor Sewer (MIS) System is the main conveyance system for wastewater flows from the sanitary and combined sewer systems of the MMSD’s 28 local municipalities. This system includes: 140 Intercepting structures that regulate flows from local combined sewers into the intercepting sewers (with excess wet-weather flows directed to the interceptor sewer system); 300 miles of interceptor sewers; 3,300 manholes, including local connections integral to the manholes; 43 diversion chambers used to control flows between various branches of the interceptor sewer; 100 siphons, including drop structures and riser structures; 40 miles of pressure sewers intended to operate under surcharged conditions by gravity through low-lying areas, similar to a siphon without the drop and riser structures; 19 pump stations and force mains; 170 combined sewer outfalls; along with 31 sanitary sewer outfalls. The MIS System is divided into seven drainage basin sub-systems for flow control and monitoring. Flows can be diverted between drainage basin



subsystems to the treatment plant (Jones Island or South Shore) using flow control structures. Additionally, flows can be diverted to the interceptor sewer system, with flow diversion operation controlled automatically or by manual control. The combined sewer and sanitary sewer outfalls convey combined or sanitary sewage to receiving waters when the volume available for combined and sanitary sewage in the interceptor sewer system is reached or when the capacity of an MIS is exceeded.

The Interceptor Sewer System (ISS) and Northwest Side Relief Sewer (NWSRS) Tunnel systems are used to store wastewater that is pumped out by the ISS Pump Station as treatment capacity is available. Each of the 27 drop shaft sites to the tunnels include: control buildings; junction and diversion chambers near surface collectors that convey wet-weather flows from the intercepting sewer to the tunnel junction chamber; approach channels; trash racks; drop shafts; air vents and odor control systems; and access shafts. The ISS includes approximately 27 miles of tunnel located 250 to 300 feet below the surface and ranging from 17 to 32 feet in diameter. Additionally, the system has 432 million gallons of storage capacity. There are four main tunnels: CrossTown (CT), Kinnickinnic (KK), Lake Michigan (LM), and North Shore (NS). The North 27th Street ISS Extension is an extension of the NS Tunnel and is considered part of the system.

The NWSRS Tunnel is designed as a remote storage facility that can be operated in the active or passive fill mode. The tunnel drains into the ISS through the CT-1 drop shaft, and is approximately 7.1 miles in length, 20 feet in diameter and ranges from 175 to 250 feet in depth. This tunnel has a storage capacity of 89 million gallons. Wastewater is pumped out of the tunnels using three ISS pumps, with a rated capacity of 69 MGD each, that are located at the ISS pump station at Jones Island. During wet weather events, a portion of the area that normally flows to the Jones Island plant is diverted to South Shore. Solids removed from the primary clarifiers are pumped to the anaerobic digesters and co-mingled with incoming flows from Jones Island. Digested sludge is ultimately pumped back to Jones Island and used in the production of Milorganite. Two major requirements of the contract are to effectively manage wet weather events and provide a CCTV condition assessment of all gravity sewers. Through implementation of the most modern methods of underground asset management, the integrity, dependability and functionality of the system has been improved.

The Central Control System (CCS) for the collection and conveyance system, located at Jones Island, is used to monitor and control flows to the treatment plants through the MIS System and the ISS (which includes the NWSRS Tunnel). Operating data for the collection and conveyance system, including flow and level data from hundreds of monitoring locations, is transmitted via a wireless communication system to the CCS. The CCS includes approximately 170 primary measuring devices (i.e., level and flow monitoring instruments), limit switches, 20 weather stations, 14 water quality monitoring stations and gate position sensors; building monitoring for door entry, power status and interior temperature; local control panels, programmable logic controllers (PLCs) and radios; main and mini repeaters; master PLCs, radios and servers; and human-machine interface (HMI).

Veolia is implementing state-of-the-art programs that annually verify the operational readiness of critical system components and improve remote monitoring to provide more complete feedback on





real-time system performance; and maximize treatment efficiency. We also are charged with constant emergency/overflow response readiness, and we implemented a robust community education program to educate all that are interested about the proper operation of the District's conveyance and collection system. Additional improvements are ongoing.

Under the leadership of a dedicated Veolia Capital Program Manager, along with support resources from our company at-large and the MMSD, we are working together to develop a long-range Capital Improvements Program. Under this program, Veolia assisted the MMSD with the implementation of a landfill gas recovery project and integrated the operations of the metering and generation facilities under our overall OM&M agreement to maximize the value of this new renewable energy generation facility. The Jones Island renewable energy facility includes: landfill gas collection, gas conditioning, a long gas pipeline conveyance system, a gas metering station, electricity generation facilities that serve the wastewater treatment plants electrical loads, and a waste heat-recovery systems utilized to produce a Class A marketable fertilizer.

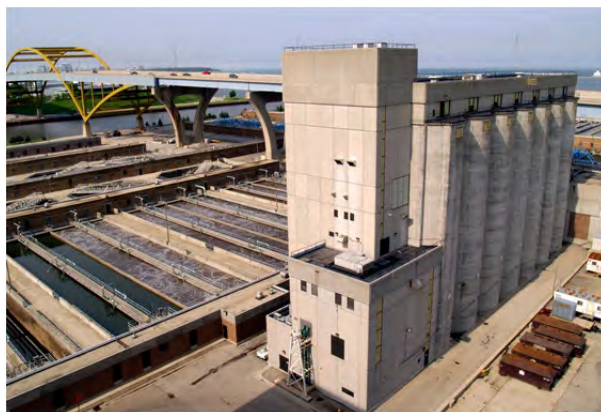
The South Shore plant pumps its anaerobically digested solids through a 12-mile pipeline to the Jones Island plant for dewatering, thermal drying/pelletization, silo storage and bulk terminal load-out from the Milorganite fertilizer production plant. The dried biosolids recycling facility consists of 12 rotary-drum dryer trains using direct and indirect forms of thermal heating (e.g., natural gas, thermal oil and cogeneration exhaust heat).

Cleaned landfill gas is piped into the Jones Island Plant as bio-fuel for cogeneration of 24 MW of green power from five 4.8-MW gas turbines (Solar). The combined cogeneration from the Milwaukee B2E facilities is 29.5 MW, with thermal energy resource recovery of exhaust heat for the 12 trains of rotary drum dryers to evaporate moisture from the cake solids.

The Milorganite fertilizer plant produces on annual average 135.5 tpd EQ/Class A biosolids as a dried/pelletized product. The beneficial uses (in bulk or bags) of Milorganite fertilizer have been well-regarded for many decades. Veolia provides full O&M services for the complex, integrated operations of both treatment plants and the biosolids processing systems and liquids byproducts sidestreams (e.g., digester biogas and belt-presses filtrate).

As a U.S. trademarked brand and federally registered organic fertilizer, the Milorganite fertilizer product undergoes extensive processing and stringent testing for quality assurance/quality control (QA/QC). The product is tested for moisture, pH, nutrients, physical sizing, density, hardness, dust and odor, as well as for meeting U.S. EPA's Exceptional Quality/Class A product requirements of pathogen density and concentration of heavy metals.

Under this partnership, Veolia is incentivized to maximize renewable electricity generation from landfill gas and to maximize uptime of the power plant as we are responsible for 25% of the electrical costs as part of our broader operations contract. In addition, we must balance the requirements of treatment process requirements and energy efficiency in the wastewater operation so as to minimize demand.



# City of Cranston, Rhode Island



## Wastewater Operations, Maintenance & Management (OM&M) Contract Facilities and Services:

- 20.2-MGD Secondary Activated Sludge Wastewater Treatment Plant
  - Secondary activated sludge treatment facility with nitrogen removal in the activated sludge process and phosphorus removal in the BNR process, and the primary and secondary treatment processes generate liquid sludge which is dewatered in centrifuges before being sent to the incinerators for end disposal
- 22 sewer pump stations, ranging in capacity from 0.01-MGD to 6.62-MGD, including:
  - One pump station with capacity of 2.01-MGD
  - One pump station with capacity of 3.16-MGD
  - Two pump stations with capacities of 4.89-MGD
  - One pump station with Capacity of 6.62-MGD
- Collection System (258 miles)
- Industrial Meter Reading and Billing program management

- Septage Receiving and Effluent Reuse program operations and management
- Merchant Biosolids program OM&M with two sludge incinerators (22 and 44 dry ton per day Multiple-Hearth Incinerators).

Veolia Water North America – Northeast, LLC (Veolia) began providing OM&M services to the City in 1989 (five-year agreement), and that contract was renewed under a new five year contract and then was transitioned to a 25-year agreement that in 1997 (with additional responsibility for implementing over \$45 million in capital improvements), that contract was extended for an additional five years in 2001, with a current term that runs through 2027.



To address more-stringent phosphorous limits, the City installed a Veolia ACTIFLO® system at the wastewater treatment plant, which is proven effective in reducing nutrient concentrations in wastewater effluent. The ACTIFLO process further enhances water quality and lighten the load to the tertiary polishing filters. Veolia was engaged in supporting the installation and now operates this system. Under the wastewater reclamation and reuse program, Veolia supplies about 30% of the high-quality effluent to a local power company for cooling tower makeup water, mitigating that power plants reliance on other potable water sources.

The Cranston wastewater facility also serves as a major septage (35 million gallons per year) and industrial (20 million gallons of industrial wastewater) receiving and processing facility, in addition to the merchant biosolids operation.

This is Veolia’s longest-running and most successful contract in the State of Rhode Island, and has involved providing a comprehensive scope of services that covers OM&M of the collection and treatment systems, capital program implementation, and operation of a highly successful biosolids merchant operation. The two sludge (biosolids) incinerators process a combined total of 66 dry tons per day (dtpd) of sludge using two (22-dtpd and 44-dtpd) multiple hearth furnaces. This includes over 4,000 dry tons per year (dtpy) of biosolids from Cranston’s wastewater plant and an additional 14,000 dtpy from other municipal wastewater plants (including other Veolia operated plants in the Northeast and New York).

Under this contract, Veolia provided financing, whereby the City received an up-front, lease payment. In January of 2017 the project’s outstanding debt was refinanced by the Rhode Island Infrastructure Bank, through its federally taxable Wastewater Treatment System Refunding Revenue Bonds to refund the outstanding tax-exempt Rhode Island Clean Water Finance Agency Wastewater Treatment System Revenue Bonds. Under this new financing structure, Veolia continues to have the same relationship as the operator of the wastewater facility under a service guaranty to the City of Cranston.



Starting in 2005, Veolia and the City embarked on a capital program that involved implementing sweeping improvements to the treatment plant to restore compliance and meet stringent new federal requirements for biological nutrient removal. This work included over \$10 million in design/build work for upgrades to meet new regulatory requirements, to increase plant capacity and to reduce emissions from the incinerators; we also implemented \$4 million in sewer system improvements.



In response to a new consent agreement, the City was required to upgrade the plant again. Veolia identified several large industrial users, one of which contributes significant nitrogen loadings to the plant. The City addressed the loadings issue with the industry, which reduced the amount of capital upgrades required for the plant. Until the November 2014 departure of the City's largest Industrial user, the State of Rhode Island's Central Landfill, the Cranston plant removed more nitrogen than any other Rhode Island wastewater treatment facility due to unique industrial loadings related to the treatment of the leachate from State's only landfill. The departure coincided with the start of a \$16 million ongoing wastewater plant upgrade to further reduce phosphorous discharges 10-fold (from 1 ppm to 0.1 ppm) and reduce nitrogen discharge from 10 ppm to 8 ppm.

As part of our full capital risk program under this contract, Veolia invests approximately \$1 million annually for capital improvements for the wastewater system. In response to a new consent agreement, the City was required to upgrade the plant again. This capital program (valued at over \$16 million) included an incinerator upgrade. The Amendment also included a new revenue-sharing plan with the City (a combination of a guaranteed fixed-base share and a production-based share).

The 2005 capital program at the Cranston wastewater operations also included enhancements to the treatment plant's SCADA and computerized maintenance management system (CMMS). The upgraded SCADA system allows for improved monitoring as well as control of a number of plant processes and equipment. It now interfaced with the Oracle Utilities Work and Asset Management (OWAM) tool, which tracks all plant equipment and generates preventive maintenance work orders. Facility maintenance is based upon the principals of Reliability Centered Maintenance (RCM). A Criticality Survey has been conducted on all plant systems and processes. This survey included evaluation of the various functional failures and the resulting impacts from each failure mode. Based on this evaluation a focused balance of preventative maintenance, predictive maintenance, and run to failure is implemented. Additionally, critical spares are identified and kept on-hand to limit downtime of critical processes and systems. Predictive maintenance tasks include thermography, oil analysis, ultrasonic thickness testing on tanks and piping, and vibration analysis.

As part of our OM&M services approach, Veolia provides integrated personnel training and safety programs. Staff are cross-trained and given opportunities for planned career advancement. Veolia also instituted a unique and innovative safety and environmental incentive bonus plan for the plant's union workers.

Veolia maintains the City's sewer system, with responsibilities for: inspecting, cleaning and roto-rooting lines; clearing line clogs under a 30-minute response time to notification of a blockage;



sewer line locates; evaluating new plat proposals and manage the design review, hydraulic capacity assessment and field inspections; and TV inspection and flushing of sewer lines. The pump stations are monitored using the SCADA system that allows remote viewing, so that operators can respond instantly to pump station alarms.

Veolia also maintains several diesel bypass pumps that have a combined 23-million gallon pumping capacity (equivalent to the plant flow). Veolia employs a GIS tool and continually maps the system using the InfoNet™ asset management software tool for mapping and to track work order history. InfoNet integrates the complete network GPS models with all standard operations activities.

Veolia's scope at Cranston's wastewater operations encompasses all environmental reporting. The wastewater plant's Rhode Island Pollutant Discharge Elimination System Permit covers the requirements for the wet-side operation, the Industrial Pretreatment Program and the facility's effluent discharge to the Pawtuxet River.

The merchant sludge and incinerator operations are regulated through a facility wide Title V Air Permit, 503 Biosolids Regulations, and the new Sewage Sludge Incinerator Regulations that went into effect in March of 2016.

There are a wide variety of reporting and recordkeeping requirements associated with each of these permits. Additionally, Veolia administers all facets of the facility's Spill Prevention Control and Countermeasure Program (SPCC) and facility's Stormwater Management Plan

Veolia's work scope for the City includes providing underground asset management (UGAM) services for the collection system, which is under a U.S. Environmental Protection Agency (U.S. EPA) Administrative Order to perform CMOM. Under this approach, Veolia's program involved implementing this flexible, dynamic framework to identify and incorporate widely accepted wastewater industry practices to: better manage, operate and maintain the collection system; investigate capacity constrained areas of the collection system; and respond to sanitary sewer overflow (SSO) events.

As part of the 2001 OM&M contract amendment, Veolia also accepted full risk for basement claims attributed to blockages in the main sewer lines, while the City retained the risk for claims related to excess inflow.

Veolia has also worked with the City and its consulting engineer to develop a City-wide hydraulic model. This model simulates Cranston's collection system, capturing elements such as pipe age, material, elevations; system inadequacies and/or deficiencies; pressure, flow circulation patterns, velocities and head loss; failures; system overflows, etc.

Veolia has used a reliability focused maintenance approach and the CMMS tool to provide state-of-the art maintenance philosophies/approaches to maximize life expectancy from system components through the most efficient means and at the lowest cost; between 2005 and 2008 Veolia managed \$4 million in sewer line repairs.

# Lynn Water and Sewer Commission, City of Lynn, Massachusetts



## Wastewater Operations, Maintenance & Management (OM&M) Contract Facilities and Services:

- 25.8-MGD Pure Oxygen Activated Sludge Wastewater Treatment Plant that operates as a regional facility that receives flows from the City of Lynn and the towns of Saugus, Nahant and Swampscott.
- The regional biosolids processing includes high-solids centrifuge dewatering, and the 24-dtpd Fluidized Bed Incinerator unit (processing 5,550 dry tons of biosolids per year) for solids volume and mass reduction. The ash from this incineration process is disposed of at a landfill located at the Lynn regional wastewater treatment plant.
- 13 Pump Stations, ranging in size up to 90-MGD, including:
  - Lynn Pumping Station (at Plant) – 90-MGD (peak hourly flow)
  - Sanderson Avenue Pump Station was designed to prevent backup into the sewer in Sanderson Avenue. The two existing pumps can discharge between 1,000 to 2,000 gpm, depending on downstream conditions, providing a capacity of 1.44 to 2.88 MGD

- The Camden Street Pump Station pumps to an adjacent sewer 35 feet away. The station capacity with two pumps operating is 1,300 gpm (1.87 MGD).
- The Washington Street Pump Station pumps to an adjacent manhole and the discharge flows by gravity via a 24-inch sewer to the interceptor. The station capacity with two pumps operating is 6,000 gpm (8.64 MGD).

Veolia Water North America – Northeast, LLC (Veolia) began working with the LWSC in 1985, two years before renovations to the wastewater treatment plant were completed, to provide commissioning and startup of the \$76 million improvement project. This approach allowed Veolia’s OM&M staff to be trained and become familiar with the processes in advance of startup. As a result, Veolia’s OM&M team was fully prepared to participate in the commissioning and startup of the new wastewater facilities.

In 2001, Veolia entered into a 20-year service contract for asset management and capital improvements, totaling \$14 million. The improvements were for various portions of the wastewater facility, including: the installation the 24-dtpd incinerator and associated dewatering equipment; two high-solids centrifuges; a modernized supervisory control and data acquisition (SCADA) control system; and screening system upgrades. Recent capital work at the wastewater plant has included: reskinning the Fluidized Bed Incinerator unit shell; replacement of air distribution bubble caps; replacement of Primary Heat Exchanger (\$365,000) and Stack Gas Re-heater (\$119,000); upgrades for mercury removal; and \$1.3 million in improvements related to the conversion of gaseous chlorine to sodium hypochlorite.

Over the years our firm has worked with the LWSC to meet the routine and non-routine needs under this contract, which has involved expanding and upgrading the wastewater treatment plant to meet new capacity and regulatory demands. That work involved overseeing a \$53.8 million secondary treatment upgrade at the plant in 1990, along with over \$10 million in capital improvement projects which took place between 1996 and 1998. This work involved installation of variable frequency drives for influent pumps and a new indirect sludge dryer, along with pumping station modifications.

In addition to the oversight and coordination work for engineering and construction work by other contractors hired by the LWSC, Veolia has also worked with your agency under a design/build services approach to implement more than \$14 million in capital improvements for the wastewater plant. These upgrades and improvements, carried out under a three-year program starting in 2001, included installation of: a new and larger fluidized-bed incinerator (replacing the two existing incinerators); two high-solids centrifuges; a modernized supervisory control and data acquisition



The O&M partnership between the LWSC and Veolia dates back to the startup of their wastewater treatment plant in 1985, and over the past more than three decades this partnership has been recognized with awards, including:

- 2013 - Water Environment Federation’s Operator Ingenuity Award.
- 2012 and 2006 - George W. Burke, Jr. Safety Award from the Water Environment Federation.
- 2011 and 2009 - Performance Excellence Large Plant Award from the Massachusetts Water Pollution Control Association.



(SCADA) control system; and screening system upgrades. Our OM&M team at the wastewater plant also implemented other improvements, which included an odor control program. That work involved covering all preliminary and primary tankage and treating the odors from those tanks. And, most recently, we completed \$1.3 million in other capital improvements relating to the conversion of gaseous chlorine to sodium hypochlorite.



The Lynn wastewater facility uses activated carbon scrubbers to reduce odors from the influent wet well, grit chamber area, biosolids gravity thickeners and centrifuge dewatering complex. Veolia's OM&M team at the wastewater plant also implemented other improvements, which included an odor control program. That work involved covering all preliminary and primary tankage and treating the odors from those tanks.

At this operation, Veolia implemented the Oracle® Utilities Work and Asset Management (OWAM) enterprise software for Asset Management and computerized maintenance management. This tool keeps a historical accounting of all maintenance work, including who performed the work. Tied into other company applications, it also communicates with financial software, enhancing accounting and purchasing for the project.

Because the Lynn treatment process requires use of chemicals defined by the U.S. Environmental Protection Agency and/or OSHA as "highly hazardous", project staff manage and maintain Risk Management and Process Safety Management plans at Lynn. These plans dictate the safe handling of hazardous materials and proper response in the event of a chemical release. The plans are designed to foster employee and public safety.

Under this contract Veolia has also instituted an innovative program to cross-train all new hires in both operations and maintenance tasks. The practice provides more well-rounded personnel and offers staffing flexibility that creates efficiencies. In cooperation with the union, we also offer in-house certification training.

The nearby Town of Swampscott's collection system discharges to the Lynn wastewater plant, and Veolia, under a separate contract with that community, provides OM&M for their pump stations and water booster station. This satellite operation allows for the sharing of resources and provides services for the Town of Swampscott at a substantial savings.

Under a separate contract with the LWSC, Veolia provides OM&M for the Raymond F. Reardon Memorial Water Treatment Plant. That contract began in 1987 when that then-new facility was being completed and brought online by the City. Based on our success at Lynn's wastewater plant, the agency partnered with Veolia two years in advance of the completion and startup of the new drinking water treatment plant. As with the wastewater plant, we brought our operational perspective to the project, and we had trained staff in place to help commission and startup the new facility. The water treatment facility was completed in 1989 and Veolia then began providing full-service OM&M for the plant. The water plant was designed to treat flows of 15.3-MGD on average, although peak flows of 23-MGD can be provided to the distribution system, if required. On average, the water plant produces about 10-MGD of drinking water.



# Downriver Utility Wastewater Authority (DUWA), Michigan

## Wastewater Operations, Maintenance & Management (OM&M) Contract

### Facilities and Services:

- 150-MGD treatment plant - capacity to provide secondary treatment for up to 125- MGD and influent pumping capacity is rated at 225 MGD.
- 15 million gallon wet weather storage tunnel that is used to retain excess wet weather flows during rain events.



Veolia Water North America – Central, LLC (Veolia), an affiliated company of Veolia Water North America – Northeast, LLC, began an operations, maintenance and management (OM&M) in 2018 under an ongoing 20-year agreement.

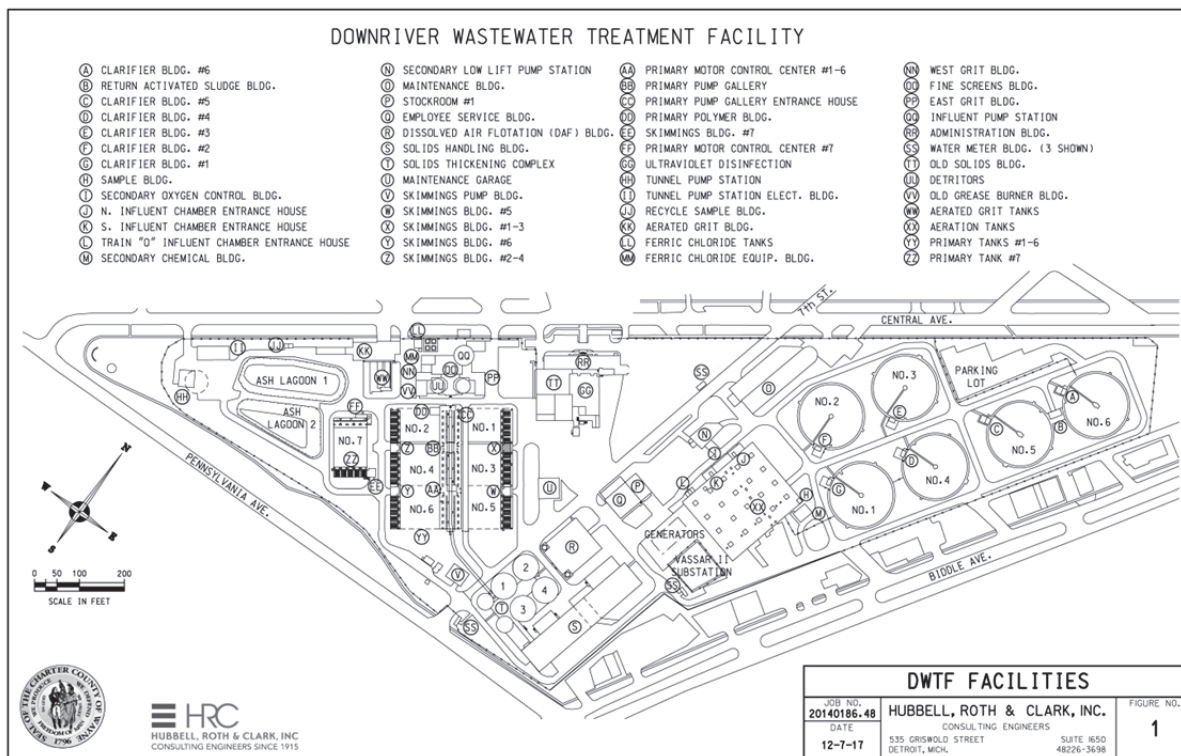
The wastewater plant has the capacity to provide primary treatment for up to 150 MGD, and capacity to provide secondary treatment for up to 125 MGD. Average daily flows to the plant are approximately 50 -MGD, but peak wet weather flows can reach 225 MGD during some precipitation events.

The wastewater plant treatment process consists of influent pumping, preliminary treatment, primary treatment, secondary treatment (high-purity oxygen activated sludge with secondary settling), and UV disinfection. Treated effluent is discharged to the Trenton Channel of the Detroit River. The system also includes a 15 million gallon wet weather storage tunnel that is used to retain excess wet weather flows during rain events.

As a first contract-year O&M service agreement obligation to DUWA, Veolia performed in 2019, a biosolids disposition feasibility analysis to recommend a more cost effective and technically sustainable solution. The approximate 40 dry tons per day (40-DTPD) of raw, undigested cake biosolids produced at the Downriver treatment plant, has historically been hauled away to multiple Michigan landfills for disposal.

Sharply restricted disposal capacity and escalating tipping fees for raw, wet cake solids in the past year are key drivers for DUWA's fast-track quest for a new long-term (20-year) solution, and one in which is technically reliable and economically viable.

As such, Veolia recommended and DUWA approved an alternative on-site thermal drying solution via retrofit of the existing Solids Handling Building to accommodate new dual in-direct heat drying



trains and a third high-solids centrifuge. Veolia also recommended and DUWA approved a progressive Design-Build (pDB) project delivery model for executing the biosolids project.

Under a capital program management (CPM) services contract with DUWA, as a value added service to our core OM&M services agreement, Veolia assisted DUWA in the preparation of procurement documents for the thermal drying technology and separately, the pDB entity.

Recently, DUWA unanimously selected Veolia’s BioCon™ belt drying technology (a technology manufactured by Veolia Water Technologies-Kruger, a Veolia sister company) for the project; DUWA is currently concluding selection of the pDB entity that will work with Veolia in delivery of the new biosolids solution.

The budgetary financed capital cost for the pDB phase (including dual trains of BioCon™ belt dryers and other equipment – cake bin, third centrifuge and thermal oil system via natural gas fired heater units) approximates \$21 million.

DUWA’s cost savings (indicative pro-forma) on a Net Present Value basis will be \$1.2 million per year. Veolia will be responsible for guaranteeing the long-term success of the new biosolids solution.

The new biosolids solution will be fast-tracked implemented within 18 months from DUWA’s notice to proceed to the contracted pDB entity and Veolia Water Technologies-Kruger, which is scheduled to occur this spring 2020, so that full operations and cost savings commences by the end of 2021.

The Downriver Sewage Disposal System consists of the wastewater treatment plant which is situated on a 34 acres site in the City of Wyandotte, Michigan, along with approximately 46 miles of interceptor pipe which is used to convey wastewater from 13 tributary communities (Allen Park,

Belleville, Brownstown Township, Ecorse, Dearborn Heights, Lincoln Park, River Rouge, Riverview, Romulus, Southgate, Taylor, Van Buren Township and Wyandotte).

DUWA was established as this new agency assumed the wastewater assets of Wayne County, which includes the City of Detroit. The DUWA systems now ranks as the second largest wastewater system in the State of Michigan, serving a population base of more than 350,000 in a service area composed of 13 member communities.

The agency worked with Wayne County on an asset transfer of the Downriver Sewage Disposal System (DSDS). As part of that process, DUWA initiated a RFP process for a contract OM&M provider. Veolia responded to the RFP request, and was selected as the preferred bidder.

Veolia completed a 90 day transition and is now operating the wastewater facilities under a 20-year OM&M agreement. There were 26 staff from Wayne County that joined the Veolia team and an additional 22 that were hired to fill long-standing vacancies

This new project involves providing OM&M of wastewater facilities, as well as the development of capital planning recommendations. The wastewater treatment plant, located in the City of Wyandotte, is served by approximately 63 miles of interceptor pipe that is used to convey wastewater from 13 tributary communities and several Drainage Districts that operate wet weather storage facilities in the Service Area.

The Interceptor System consists of three main elements. The Riverdrive Interceptor transports flow from the communities of River Rouge, Ecorse, Lincoln Park, Southgate, Wyandotte and approximately 90 percent of the wastewater from Allen Park. The Riverview Interceptor transports flow from the City of Riverview. The Pennsylvania Interceptor transports flow from eight Downriver communities including Belleville, Van Buren Township, Romulus, Taylor, Dearborn Heights, Brownstown Township, and portions of Allen Park and Southgate. Each local community is responsible for the operation and maintenance of their local collector sewers that convey wastewater to the System, and the scope of work for this RFP does not include any work on local collector sewers.

The wet weather storage tunnel which provides storage capacity for 15 million gallons includes the Lower Tunnel segment, the Upper Tunnel segment and the Allen Park Spur. The wet weather tunnel serves the Communities of Allen Park, Belleville, Brownstown Township, Dearborn Heights, Riverview, Romulus, Southgate, Taylor and Van Buren Township.

**Reference:**

Mr. Vyto Kaunelis, Principal, DUWA Contract Administrator, OHM Advisors -  
System Manager - Downriver Utility Wastewater Authority (DUWA),  
25605 Northline Road, Taylor, Michigan 48180  
Telephone: (313) 481-1250 – Email: vyto.kaunelis@ohm-advisors.com



## **Section 6.0 – Supplemental Information**

### **Supplemental Technical Materials**





## New Bedford Specific Plan

# Standard Operation Procedure (SOP) Odor Control

**SOP FOR NOTIFICATION TO THE CITY OF NEW BEDFORD REGARDING POTENTIAL ODORS AT THE NEW BEDFORD WASTEWATER TREATMENT FACILITY.**

There are three City officials that are the contacts for all matters relating to the wastewater treatment facility. Their contact information is listed below:

Jim Costa	Assistant Superintendent WW	774-762-0005
Justin Chicca	Superintendent WW	508-726-7000
Jamie Ponte	Commissioner DPI	508-316-6078

Only one call is necessary in the order listed above. In the event Jim Costa is unavailable contact Justin Chicca. If Justin is unavailable, contact Jamie Ponte, Commissioner DPI.

Notification to our contacts listed above will occur under the following circumstances;

- Odor scrubber maintenance; This notification is to be made by email or text using either the maintenance notification form or the information of the form if sent by text. (form attached in this plan). This information includes date, type of maintenance,, description, duration, wind direction, and anticipated neighborhood impact. All effort will be made to plan scheduled maintenance during favorable wind direction as well as climactic conditions, ie major mechanical downtime will be scheduled for colder months.
- In addition to emergency and planned scrubber maintenance notification, the City is to be notified if there is potential for the release of fugitive odors; this would include (but not be limited) to the following;

Contact Chamber cleaning

Sludge spill

Overflow

Secondary clarifier maintenance

Primary clarifier maintenance

Aeration basin maintenance

Bay door maintenance (headworks or solids building)

Holding tank maintenance

Gravity thickener maintenance

- The City will also be notified within 24 hours if an apparent toxic slug load is received at the facility that may cause aromatic odors in combination with decreased treatment efficiency and possible scrubber impact. Staff will also sample the influent in a VOC vial during suspect discharges and send this sample out for analysis.
- As per standard SOP in the zero tolerance odor control plan, staff will continue to forward documentation of all odor on the day they have occurred. This will occur by email from any one of the management staff or odor and noise control technician at the plant.

FAX NO: ~~3054164111~~

ODOR SCRUBBER  
MAINTENANCE PROCEDURE  
NOTIFICATION  
FOR THE NEW BEDFORD WASTEWATER TREATMENT FACILITY

THIS FORM WILL BE FAXED TO CITY OFFICIALS  
WHEN THERE IS SCHEDULED OR UNPLANNED MAINTENANCE ACTIVITIES  
TO BE PERFORMED ON THE ODOR CONTROL SCRUBBERS.

DATE OF MAINTENANCE

wind direction

TYPE OF MAINTENANCE: CORRECTIVE    PREVENTIVE    (circle all that is applicable)  
WEEKLY  
MONTHLY  
BI-MONTHLY  
QUARTERLY  
SEMI-ANNUAL  
ANNUAL  
EMERGENCY

DESCRIPTION OF MAINTENANCE:


ESTIMATED DURATION OF MAINTENANCE

ANTICIPATED NEIGHBORHOOD IMPACT:



Professional Services Group, Inc.

**New Bedford Project**  
**ZERO ODOR TOLERANCE PLAN**  
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I. Purpose

The purpose of this plan is to set forth both the standard and special procedures for dealing with odors normally associated with treatment facilities. Due to the facility's close proximity to the neighborhood special attention must be paid to preventing odors from escaping the plant grounds. Many compounds found in wastewater can be detected at very low concentrations. It is therefore very important to operate the facility and associated odor control equipment at peak efficiency.

II. Potential Odor Sources

The following list outlines the areas of the facility that may be odor sources:

<b>Area</b>	<b>Potential Odors</b>	<b>Method Of Control</b>
Headworks	Raw waste water (H <sub>2</sub> S)	Proper operation of packed tower scrubber
Headworks	Side streams (H <sub>2</sub> S)	Proper operation of unit processes. Chlorination of recycle sewer via the gravity thickener effluent.
Headworks	Scum build up on wet wells (H <sub>2</sub> S) (Organic odor)	Frequent scum removal.
Headworks	Grit /Screenings (H <sub>2</sub> S)(Organic odor)	Proper grit washer operation Frequent off site disposal. Lime addition when necessary.
Headworks	Decomposing material (H <sub>2</sub> S)(Organic odor)	Housekeeping
Aerated Grit tanks	Raw Wastewater (H <sub>2</sub> S)(Organic odor)	Proper operation of packed tower scrubber.
Aerated Grit tanks	Decomposing material (H <sub>2</sub> S)(Organic odor)	Regular tank washdown and inspection.
Primary Clarification	Raw Wastewater (H <sub>2</sub> S)(Organic odor)	Proper operation of packed tower scrubber.
Primary Clarification	Decomposing material (H <sub>2</sub> S)(Organic odor)	Regular tank washdown and inspection.

<b>Area</b>	<b>Potential Odors</b>	<b>Method Of Control</b>
Aeration Basins	Raw Wastewater (Organic odor)	Proper operation of packed tower scrubber.
Aeration Basins	Decomposing material (H <sub>2</sub> S)(Organic odor)	Regular tank washdown and inspection. Diffuser repair when necessary.
Final Clarification	Raw Wastewater (Organic odor)	Maintain proper loading rates.
Final Clarification	Scum buildup (H <sub>2</sub> S) (organic Odor)	Frequent scum removal.
Final Clarification	Decomposing material (H <sub>2</sub> S)(Organic odor)	Regular tank wash down and inspection.
Chlorine Contact Chambers	Decomposing material (H <sub>2</sub> S)(Organic odor)	Regular tank washdown and inspection.
Gravity Thickeners	Raw Wastewater (H <sub>2</sub> S) (Organic odor)	Maintain proper loading rates. Maintain proper sludge removal rates. Chlorination when necessary. Proper operation of packed tower scrubber.
Gravity Thickeners	Decomposing material (H <sub>2</sub> S)(Organic odor)	Regular tank washdown and inspection.
Sludge Storage Tanks	Thickened sludge (H <sub>2</sub> S) (organic Odors)	Maintain proper sludge removal rates. Proper operation of packed tower scrubber. Ferric chloride addition.
Sludge Storage Tanks	Decomposing material (H <sub>2</sub> S)(Organic odor) Waste Activated Sludge (H <sub>2</sub> S) (organic Odors)	Regular tank washdown and inspection. Maintain proper loading rates.

<b>Area</b>	<b>Potential Odors</b>	<b>Method Of Control</b>
Centrifuges	Thickened sludge (H <sub>2</sub> S) (organic Odors)	Maintain proper loading rates. Maintain cleanest possible Centrate. Proper operation of packed tower scrubber.
Conveyance Equipment	Dewatered sludge (H <sub>2</sub> S) (organic Odors)	Proper operation of packed tower.
Conveyance Equipment	Dewatered sludge with lime addition (Ammonia)	Proper operation of packed tower scrubber.
Sludge Loading Area	Dewatered sludge (H <sub>2</sub> S) (organic Odors)	Proper operation of packed tower.
Recycle Sewer	Side streams (H <sub>2</sub> S)	Proper operation of unit processes. Chlorination of recycle sewer via the gravity thickener effluent.
Plumbing Vents	Side streams (H <sub>2</sub> S)	Proper operation of unit processes. Chlorination of recycle sewer via the gravity thickener effluent.



### III Air and water Testing

#### A. Schedule

Routine sampling of liquid phase parameters and the scrubber inlets and outlets is necessary to maintain proper operation and forewarn of impending problems. Staff should observe the following sample schedule for normal operating situations. Additional sampling should be completed if problems or concerns develop.

#### Liquid Phase

Daily	Total sulfides, dissolved oxygen, and pH of Influent, Primary Effluent, and Recycle Flows.
Weekly	Total sulfides in Centrate, and Gravity Thickener Effluent.

#### Air Monitoring

Daily	Subjective “sniff” testing of scrubber outlets
As needed	Draeger testing of Solids scrubber inlet and outlet. Dimethyl Sulfide and total Mercaptans.

The Draeger testing of the solids scrubber inlet and outlet will be conducted when a suspected increase in loading may be present.

Any unusual (i.e. offensive) “sniff” tests should be investigated. If operating or mechanical shortcomings are the cause, they should be immediately rectified. If no cause can be determined additional testing should be completed.

#### B. Procedures

**Sulfide:** Sulfide samples should be grabs of the liquid stream. Testing must be completed as soon as possible after sample collection. High sulfide levels (> 2 PPM) should be cause for concern. Chemical addition should be considered.

**pH:** pH samples should be grabs of the liquid stream. Testing must be completed within 15 minutes of sample collection. Hydrogen sulfide is more soluble at high pH. The lower the pH the more sulfides will be released when the liquid is agitated.

- Dissolved Oxygen:** DO samples should be grabs of the liquid stream. Testing must be completed as soon as possible after sample collection. DO is critical to maintaining aerobic conditions. Without DO microorganisms will begin to use bound oxygen, and produce as a byproduct a number of reduced sulfur compounds. It is these compounds that create the nuisance odor problems.
- Sniff Testing:** Each scrubber stack has an access port to allow for “sniff Testing”. The human nose has nearly 25 million nerves available for identifying and determining the concentration of an odor. When done under controlled conditions, sniff testing is actually an approved standard method for determining odor level and intensity. For our purposes it is simply a quick, subjective, test of the discharge air stream. See appendix for table of odor characterization.
- Draeger Tubes:** Draeger tubes can be used to measure the concentration of a large number of chemicals. The tubes work by a color change, caused by a chemical reaction. Draeger tubes have some limitations, the first is relatively high detection limits (generally in the PPM range), and the second is interferences. Many similar compounds will react with the same tube reagent.

#### IV Standard Operating Procedures

##### A. Scrubber Operation

The facilities scrubbers are vertical packed towers that operate by chemical adsorption and oxidation. Contaminated air is drawn through the bottom of the scrubber and up through the media. The chemical solution is pumped to the top of the tower and trickled down over the media. The solution comes into contact with the contaminated air and adsorbs then oxidizes the contaminants, pH is maintained >8.0 S.U to prevent release of gaseous sulfide compounds.

The basic chemical reactions are as follows:

Contaminant	Reaction
Ammonia	$2\text{NH}_3 + \text{H}_2\text{SO}_4 = (\text{NH}_4)_2 \text{SO}_4$
Hydrogen Sulfide	$\text{H}_2\text{S} + 2\text{NaOH} + 4\text{NaOCl} = 4\text{NaCl} + 2\text{H}_2\text{O} + \text{Na}_2\text{SO}_4$
Mercaptans	$\text{RSH} + \text{NaOH} + 3\text{NaCl} = \text{RSO}_3\text{Na} + \text{O} + 3\text{NaCl}$

Adsorption is controlled by the maximum solubility of the contaminant in solution; this makes pH control critically important. For the ammonia scrubber a pH of 2-3 S.U should be maintained and for the Hydrogen Sulfide scrubbers a pH within the range of 9-10.5 should be maintained.

The following table outlines desired operating parameter for each of the scrubber units.

	SB161 & 162	SB 361	SB641	AS661
Recirculation rate	470 GPM	570 GPM	678 GPM	381 GPM
*Make up water rate	5 GPM	5 GPM	10 GPM	1-5 GPM
Air flow rate	24,500 CFM	35,000 CFM	50250 CFM	24600 CFM
Mercaptan concentration	50 PPM MAX.	15 PPM MAX.	15 PPM MAX.	0
Ammonia	0	0	0	25-50 PPM
Hydrogen Sulfide	10-50 PPM	5-15 PPM	5-15 PPM	0
Solution pH	9.5-10.5	9-10	9-10	2-3
ORP Range	550-650	590-690	650-750	N/A

Bowker & Associates developed these ranges during the scrubber optimizations exercises conducted. Operating the scrubber within these ranges is critical to achieving the highest possible removal efficiencies.

\* During summer months we use a higher makeup water rate to boost the recovery time and avoid sump chemical odors which can reach above "normal range" and into the atmosphere from scrubber stacks. Occasionally scrubbers face sharp inclines and declines in H<sub>2</sub>S loads which send the chemical pumps into high mode and then low mode (from 100% to zero speed) resulting in sumps being saturated with chemicals. Odors (chemical) are avoided by increasing the make up water thereby "refreshing" the scrubber sump more frequently. RA

SB161&162 Are being operated as conventional Hydrogen Sulfide scrubbers. The operator should check the scrubber no less than once per shift. Observations must be recorded on the daily scrubber rounds sheet. Any parameter observed outside normal operating range should be noted and immediately corrected. Immediate remedial action must be taken to correct any mechanical problems and a service request is to be filed with the maintenance department for repairs.

SB361 Is being operated as conventional Hydrogen Sulfide scrubbers. The operator should check the scrubber no less than once per shift. Observations must be recorded on the daily scrubber rounds sheet. Any parameter observed outside normal operating range should be noted and immediately corrected. Immediate remedial action must be taken to correct any mechanical problems and a service request is to be filed with the maintenance department for repairs.

SB641 is being operated as conventional Hydrogen Sulfide scrubber utilizing aggressive chemistry. The ORP is being maintained at an elevated level to achieve the chemistry mode necessary to oxidize the Dimethyl Sulfide and Dimethyl Disulfide present in this air stream. The operator should check the scrubber no less than once per shift. Observations must be recorded on the daily scrubber rounds sheet. Any parameter observed outside normal operating range should be noted and immediately corrected. Immediate remedial action must be taken to correct any mechanical problems and a service request is to be filed with the maintenance department for repairs.

AS661 is operating as a water rinse only until such time as the lime stabilization system is in service. If lime is being added the scrubber chemical (H<sub>2</sub>SO<sub>4</sub>) must be on and the scrubber must be operating based on the above table. The operator should check the scrubber no less than once per shift. Observations must be recorded on the daily scrubber rounds sheet. Any parameter observed outside normal operating range should be noted and immediately corrected. Immediate remedial action must be taken to correct any mechanical problems and a service request is to be filed with the maintenance department for repairs.



## B. Standard Operating Procedure

### Responding to Odor Complaints

**Purpose:** The purpose of this procedure is to define the method for receiving and responding to odor and/or noise complaints received from the public. It is important for the individual receiving the complaint to be understanding, and consider how you would feel if your home life were being disrupted as the complainant's is.

**Procedure:** When a complaint is received the person receiving the call should complete an odor or noise complaint form. Attempt to obtain all the information contained in the form, if the person does not wish to give any personal information, obtain what information they feel comfortable in giving. The more information we have the better able we are to respond to the complaint.

The weather station screen should be printed out as soon after receiving the complaint as possible. This is necessary information in determining the source of the odor. Use the wind direction correlated to the location of the complaint to determine the area of the facility where an odor could be originating and begin the on-site investigation in that area. For example, if a complaint were received from the East side of the peninsula with a West by Southwest wind, the on site investigation should begin in the headworks and primary clarification areas. Record any problems and potential problems on the complaint form. Be watchful for areas of poor housekeeping and proper plant performance. Special attention should be paid to the proper operation of the odor control scrubber units. Immediate action must be taken to correct any problems that are discovered.

Any problems identified in the facility tour and scrubber check, must be rectified immediately. If identified problems can not be rectified by on site staff contact the on call party for the assignment of additional staff.

An off-site investigation must also be conducted. Proceed to the complainant's location. Speaking to the complainant directly, if they are available, can provide valuable information that can be useful in identifying odor. Observe the area for odor, being conscious of potential sources located up wind of the location. Note any odor detected during the investigation as well as any corrective actions that were necessary.

### C. Masking Agents

The effectiveness of masking agents is minimal; they should be used to mask areas where a short-term odor source is present. For example tank cleanings, scum removal from final clarifiers.

To set up for fogging, five gallons of concentrate should be diluted to 50 gallons of water, then five gallons of the diluted concentrate again diluted to 50 gallons of water for use. The pumps are adjustable for both speed and stroke, these adjustments should be made based on the amount of material necessary to mask the odor source.

### C. Ferric Chloride Addition

Ferric chloride is delivered to the thickened sludge lines just ahead of the sludge storage wells. This chemical is delivered at an application rate of 50 pounds per dry ton of thickened solids.

$$(\text{Solids per Day, Tons})(50) = \text{Lbs/Day of Ferric Chloride}$$

$$(\text{Ferric Chloride, \%})(\text{Weight per Gallon}) = \text{Pounds of Ferric Chloride per Gallon}$$

$$\frac{\text{Lbs/day of Ferric Chloride}}{\text{Pounds of Ferric Chloride per Gallon}} = \text{Gallons of Ferric Chloride per Day}$$

$$\frac{\text{Gallons per Day of Ferric Chloride}}{24 \text{ hours per day}} = \text{Ferric Chloride feed rate, Gallon per hour}$$

After calculating gallons per hour feed rate a draw down test should be completed to match pump output to required dosage. The ferric chloride delivery pump controls will be set to deliver the chemical any time that thickened sludge is being pumped. Ferric chloride is added to the thickened sludge year round to reduce odors generated in the solids processing building and to aid in solids dewatering.

### D. Housekeeping

Many potential odor sources can be controlled through good housekeeping procedures. It is essential that off line tanks be thoroughly cleaned as soon as they are emptied. The

Butterworth tank-cleaning tool allows for the thorough cleaning of closed tanks, without having to severely short circuit the odor control system.

Many building areas are directly vented to the atmosphere; thus indoor odor sources must be cleaned up immediately. Particular attention must be paid to the basement level of the solids handling building as well as the centrifuge room.

Frequent and thorough cleanup of the truck loading area is critical.

#### E. Final Clarifier Fan Operation

It is important for the final clarifier exhaust fans to operate as frequently as possible. Operation of these fans provides air changes to the headspace of the clarifiers to prevent or minimize potential accumulation of odorous air and to guard against corrosion within the clarifier. Great consideration must be given to the potential for the operation of these fans to have an off site impact with respect to noise and odors. Therefore, these fans will only operate during weekdays (Monday through Friday) from 8am until 3pm and only if the wind is not blowing in the direction of the neighborhood.

#### F. Maintenance Tasks

Certain maintenance tasks require that some pieces of equipment be removed from service or, shut down, in order to be properly conducted. While it is necessary to perform these tasks, doing so can present the potential for off site odors. In order for this to be avoided, planned (preventative) maintenance tasks that present this potential will, to the best of our ability, be scheduled to take place and be conducted only when the wind is not blowing in the direction of the neighborhood.

At times situations may arise, due to equipment failure or other unforeseen circumstances, that may necessitate immediate equipment repair. When this is the case every effort will be made to expedite repairs and return the affected unit to service as soon as possible.

## VI. Scrubber Maintenance Schedule

### A. Daily/Weekly

Daily: Operator Inspection  
Chemical Inventory

Weekly: pH and ORP probe checks  
Chemical Pump Inspection

### B. Monthly

Fan Inspection  
Recirculation Pump Inspection  
Sump Cleaning  
Spray Bar Inspection

### C. Bi-Monthly

Spare fan and Motor P.M.

### D. Quarterly

Fan Inspection  
Recirculation Pump Inspection  
Internal Inspection  
Sump Cleaning  
Mist Eliminator Inspection  
Spray Bar Inspection  
Chemical Pump Inspection

### E. Semi-Annual

Packing Acid Wash  
Level Probe Calibration  
Magnahelic P.M.  
Photohelic P.M.  
Chemical Pump P.M.

### F. Annual

Packing Acid Wash  
Level Probe Calibration  
Magnahelic P.M.  
Photohelic P.M.  
Chemical Pump P.M.



**Additional Scrubber Maintenance & Preventative Maintenance:  
Monthly:**

- 1.) Inspect all operating scrubber spray bars. *Odor Tech*
- 2.) Dump and clean all operational scrubber sumps. (Last summer and this summer, #162 tellerettes have been plugged with some type of sulfur compound following an unusual chemical odor entering the system. Last year tellerettes were completely removed, power-washed and replaced by *Maintenance* and the *Odor Tech* and *Operations...* this year the *Odor tech* has had to wash them down in place, with the aid of a fire hose and nozzle and fabricated fire nozzle extension. This operation takes several shifts to perform an adequate cleaning.)
- 3.) Total dissolved solids testing. ( *Odor tech* gathers samples and Laboratory analyzes.) (*Odor tech* uses this time to check and clean the ORP and pH probes.) (Replacement and or calibration performed quarterly by *Electrical Instrument Techs.*)
- 4.) Check and refill chemical holding tank vents (J-traps). *Odor Tech* (prevent chemical odors from escaping into atmosphere.)
- 5.) Wash-down all chemical containment areas (including the Effluent Building Hypo & Bisulfite areas). *Odor Tech*
- 6.) Monthly, quarterly and semi-annual all chemical pumps (except polymer pumps) and scrubber recirculation pumps check oil and lube. *Odor Tech*
- 7.) Scrubber Magnahelic & Photohelic checked/cleaned. *Odor Tech*

**Semi-Annual & Annual Maintenance:**

- 8.) Scrubber Vessel Cleaning. *Maintenance & Odor Tech*
  - a. Each scrubber cleaned individually. *Maintenance*
- 9.) Scrubber Fan cleaning. *Maintenance* Scrubber Fan motors megged. *Instrumentation & Electrical Techs*

Date: \_\_\_\_\_ Shift: \_\_\_\_\_ Operator: \_\_\_\_\_

Scb	pH Range	ORP	pH	ORP	Fan #	NaOCL Pump#	Stroke % Set at	Recirc Pumps			Make up H <sub>2</sub> O	NaOH Pump	Stroke % Set	Differential Inches of water			Comments:
								No.	PSI	Oil				Mag.	Photo	Range	
161	9.0-10.0	550-650			161	161		161		N/A		171				0"to 2"	
162	9.0-10.0	550-650			162	162		162		N/A		172				0"to 2"	
					163	163		163		N/A		173				0"to 2"	
361	8.5 - 9.5	575-675			361	361 362		361	362	N/A		371	372			0"to 2"	
641	9.0-10.0	575-675			641	641 642		641	642	N/A		651	652			0"to 2"	
661	4.0-6.0	N/A		N/A	661	H <sub>2</sub> SO <sub>4</sub> 661 662		661	662	N/A		N/A	N/A			0"to 2"	

Recieve Chemical: \_\_\_\_\_

Tank Level Before: \_\_\_\_\_

Tank Level After: \_\_\_\_\_

Date: \_\_\_\_\_ Shift: \_\_\_\_\_ Operator: \_\_\_\_\_

Ferrous Chloride (FeCl <sub>2</sub> )		Ferric Chloride (FeCl <sub>3</sub> )	
Tank 1	Tank 2	Tank 1	Tank 2

Scb	pH Range	ORP	pH	ORP	Fan #	NaOCL Pump#	Stroke % Set at	Recirc Pumps			Make up H <sub>2</sub> O	NaOH Pump	Stroke % Set	Differential Inches of water			H <sub>2</sub> S		NaOCL (bleach) Gal.	NaOH (caustic) Gal.
								No.	PSI	Oil				Mag.	Photo	Range	In	Out		
161	9.0-10.0	550-650			161	161		161				171								
162	9.0-10.0	550-650			162	162		162				172								
					163	163		163				173								
361	8.5 - 9.5	575-675			361	361 362		361	362			371	372							
641	9.0-10.0	575-675			641	641 642		641	642			651	652							
561	4.0-6.0	N/A		N/A	661	H <sub>2</sub> SO <sub>4</sub> 661 662		661	662			N/A	N/A			0"to 2"	N/A	N/A	H <sub>2</sub> SO <sub>4</sub>	N/A

Recieve Chemical: \_\_\_\_\_

Tank Level Before: \_\_\_\_\_

Tank Level After: \_\_\_\_\_

Comments: \_\_\_\_\_

Deck Fans ON: \_\_\_\_\_

Deck Fans OFF: \_\_\_\_\_

Date: \_\_\_\_\_ Shift: \_\_\_\_\_ Operator: \_\_\_\_\_

Scb	pH Range	ORP	pH	ORP	Fan #	NaOCL Pump#	Stroke % Set at	Recirc Pumps			Make up H <sub>2</sub> O	NaOH Pump	Stroke % Set	Differential Inches of water			Comments:
								No.	PSI	Oil				Mag.	Photo	Range	
161	9.0-10.0	550-650			161	161		161		N/A		171				0"to 2"	
162	9.0-10.0	550-650			162	162		162		N/A		172				0"to 2"	
					163	163		163		N/A		173				0"to 2"	
361	8.5 - 9.5	575-675			361	361 362		361	362	N/A		371	372			0"to 2"	
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661	4.0-6.0	N/A		N/A	661	H <sub>2</sub> SO <sub>4</sub> 661 662		661	662	N/A		N/A	N/A			0"to 2"	

Recieve Chemical: \_\_\_\_\_

Tank Level Before: \_\_\_\_\_

Tank Level After: \_\_\_\_\_

# Initial Odor Complaint Information

Complaint Received by: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Name of complainant: \_\_\_\_\_

Address: \_\_\_\_\_ Home / Work (circle one)

Telephone Number: \_\_\_\_\_ Home / Work

### Questions for Complainant:

Do you (complainant) smell the odor now? YES / NO (circle one)

Where do you think the odor is coming from? WWTP / Sewer / Sludge tanker /

Other: \_\_\_\_\_

Where were you when you first noticed the odor? Indoors / Outdoors

Other: (have complainant point on map) \_\_\_\_\_

How strong was the odor? (Check one)

Very Faint... Faint... Strong... Very Strong... Overwhelming...

How strong is the odor NOW? (Check one)

Very Faint... Faint... Strong... Very Strong... Overwhelming...

What would you say the odor smells like?

- |                    |                  |                  |                |
|--------------------|------------------|------------------|----------------|
| Rotten eggs...     | Fishy...         | Low Tide...      | Asphalt...     |
| Damp Earth...      | Nail Polish...   | Garbage...       | Weed Killer... |
| Gasoline...        | Airplane Glue... | Household Gas... | Paint...       |
| Burnt Rubber...    | Cat Urine...     | Linseed Oil...   | Septic Odor... |
| Decayed Cabbage... | Medicinal...     | Skunk...         | Don't Know...  |

Complainant's comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Observations & Questions to be answered by the Investigator / Operator:**

**Did you visit the complainant home or area? Yes / No**

**If No ... why not?** \_\_\_\_\_

**Did you (investigator) detect an odor? Yes / No**

**If Yes... How strong was the odor on scale of 1 to 8:**\_\_\_\_\_

**Where do you think the odor is coming from? Site / Other: (specify)**\_\_\_\_\_

***Weather conditions:***

*(include a print-out of the "Scrubber Signals & Weather Conditions" screen whenever possible)*

**Weather Station / Estimated (circle one)**

**(If estimated wind direction circle one)**

**Wind speed:**\_\_\_\_\_

<b>Northwest</b>	<b>North</b>	<b>Northeast</b>
<b>West</b>		<b>East</b>
<b>Southwest</b>	<b>South</b>	<b>Southeast</b>

**Atmospheric conditions (include sky conditions) i.e. cloud cover, rain, fog,**

**Review odor control surveys and identify factors contributing to the odor complaint:** \_\_\_\_\_

**Corrective action taken:** \_\_\_\_\_

**Reviewed by:**\_\_\_\_\_

**Date, time , & City Person notified:**\_\_\_\_\_



## **Field Use Of Jerome H2S Meter Model 631-X:**

**The Jerome meter is used to monitor the H2S loading and discharge of all H2S scrubbers.**

**Connect the Jerome suction tube the Inlet and press the “sample” button as per instructions in the owner’s manual and wait for a reading to appear and repeat steps at the discharge of the scrubber being checked.**

**If there are any questions as to readings attained by the Jerome contact the Odor Technician or connect the Jerome to the Functional Test Module and follow the instructions in the manual etc.**

**The Odor Technician will then recheck or send the meter in for calibration.**


**Note: Calibration is very time consuming (often taking several weeks) and Jerome is most needed during the warm months so we utilize the Functional Test Module to maintain it if the calibration is near or due, until the cold months when the H2S is at it’s lowest point. This way we can have Jerome when it is most critical.**

**This method makes the most sense when in the past the Jerome has returned with an error in calibration and had to be immediately returned to the manufacturer for several more weeks...leaving us without a meter for much too long a period or during the beginning of the “Odor Critical Period” (between March 21 and November 21).**



## New Bedford Specific Plan

# **Natural Disaster, Hurricane and Tropical Storm Preparedness Plan (Excerpt)**

<b>Veolia Water North America Operating Services</b>	
<b>Standard Operating Procedure</b>	
<b>New Bedford MA</b>	<b>Date: 10/15/2013</b>
	<b>Rev: 10/7/2019</b>
<b>Natural Disaster, Hurricane and Tropical Storm Preparedness Plan</b>	

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**MAINTENANCE MANAGER TROPICAL STORM/HURRICANE PREPAREDNESS CHECKLIST** .....

<b>Veolia Water North America Operating Services</b>	
<b>Standard Operating Procedure</b>	
<b>New Bedford MA</b>	<b>Date: 10/15/2013</b>
	<b>Rev: 10/7/2019</b>
<b>Natural Disaster, Hurricane and Tropical Storm Preparedness Plan</b>	

**LABORATORY MANAGER TROPICAL STORM/HURRICANE PREPAREDNESS CHECKLIST.....**

**SPECIAL PROJECTS MANAGER TROPICAL STORM/HURRICANE PREPAREDNESS CHECKLIST .....**

**ADMINISTRATIVE ASSISTANT TROPICAL STORM/HURRICANE PREPAREDNESS CHECKLIST.....**

**EMPLOYEE TROPICAL STORM/HURRICANE PREPAREDNESS CHECKLIST (FOR EMPLOYEE NOT SCHEDULED TO BE ON-SITE DURING EVENT) .....**

**EMPLOYEE TROPICAL STORM/HURRICANE PREPAREDNESS CHECKLIST (FOR EMPLOYEE SCHEDULED TO BE ON-SITE DURING EVENT).....**

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**Introduction and Purpose**


Hurricane season in the Atlantic, Caribbean, and Gulf of Mexico runs from June 1 to November 30. This “Hurricane and Tropical Storm Preparedness Plan” contains information and instructions intended to guide Veolia Water staff in managing the **NEW BEDFORD WASTEWATER TREATMENT PLANT** in the event of a tropical storm or hurricane. While it is not an all-inclusive instruction manual as it is not possible to address all potential details of all potential situations; however, it does suggest a number of specific organizational activities designed to maximize the probability of safe and successful management of the facility under adverse circumstances caused by tropical storms and hurricanes.

Regardless of the specific content of this document, staff will be challenged to exercise judgment in dealing with a storm event. In exercising judgment, staff must keep in mind that our primary goal, under any circumstance, is to work safely and minimize the probability of injury to staff members. Our secondary goal is to protect facility assets. Our ability to protect facility assets from direct physical damage by a storm event is limited as much of the equipment is located out of doors. Our ability to protect facility assets from damage before and after a storm event is most significant. This requires understanding of the facility in terms of knowing what to secure, when to de-energize and energize equipment, how to recognize damage, how to implement the appropriate repairs, and what is in the appropriate condition to place into service. Documentation, including pictures, of all preparation and recovery activities is essential and mandatory.

**Staffing**

The following table summarizes minimum staffing per storm type. Note that the indicated staffing levels are minimum and will be determined by the Project Manager on an event by event basis.

STORM TYPE	TROPICAL STORM	HURRICANE				
		Category 1	Category 2	Category 3	Category 4	Category 5
Minimum Staffing	2 on-duty operators, 1 utility worker, Project Manager*, Operations Manager*, Maintenance Manager*	Project Manager	Project Manager,	NO STAFFING	NO STAFFING	NO STAFFING
		Operations Manager, Maintenance Manager2 on-duty operators	Operation Manager, Maintenance Manager 2 on-duty operators1			

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		2 Electricians 2 utility 2 mechanics	utility,1 mechanic 1 electrician, 1 utility			
<b>Plant Status</b>	ONLINE	ONLINE	ONLINE	OFFLINE	OFFLINE	OFFLINE

\*Indicates minimum staffing during regular business hours and at discretion of Project Manager

**Preparation (April-May of each year)**

Prior to the June 1 of each year, staff shall prepare for hurricane season. Specific duties and requirements are provided in the checklists near the end of this document.

Employees who will be on-site during the storm event are responsible for bringing at least five days worth of their own clothing, personal hygiene products, and consumable materials. Suggested items are included in a checklist near the end of this document. A variety of supplies will be provided by Veolia, but employees should not solely depend upon such supplies.

**Before Projected Effects are Anticipated**


This document focuses on three key times before a tropical storm or hurricane event as follows:

- 72 hours Before Anticipated Effects of Event
- 48 Hours Before Anticipated Effects of Event
- 24 Hours Before Anticipated Effects of Event

It is difficult to determine timeframes before anticipated effects of a tropical storm or hurricane as forecasts can change frequently. The Project Manager must determine which of the three times are applicable at any given time so a defined course of action may be implemented. In the absence of the Project Manager, the Operations Manager will determine which time is applicable. In the absence of both the Project Manager and Operations Manager, the Maintenance Manager will determine which time is applicable. Subsequently, the responsibility goes to the Lab Manager and Special Projects Manager, in that order.

**During the Event**

Our primary goal, under any circumstance, is to work safely and minimize the probability of injury to staff members. The safety of personnel on-site takes precedence over the protection of assets. Employees on-site during the event are expected to monitor the condition of the facility, record observations, and report observations as detailed on the checklist entitled “Employee Tropical Storm/Hurricane Preparedness Checklist (for Employee Scheduled to be On-Site

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During Event)”. It is also imperative that during flows in excess of 50 MGD, all staff are to remain out of the influent wet well area. Observations are to be made from hatchways above. Failed pumps during high flows may lead to rapid flooding of the area and restricted egress. Any material to be moved from the wet well area must be done prior to the hurricane watch news release.

### **After the Event**

Re-entry to the facility may be a substantial challenge in the aftermath of a severe storm. We may be subject to passing military or law enforcement blockades upon attempting to re-enter the New Bedford Wastewater Treatment Facility. The client has indicated that it will provide a list of Veolia personnel to the appropriate agencies, which will function as a list of persons allowed to re-enter the facility. Everyone attempting to re-enter the facility must have a valid photo identification to present to the parties inhibiting re-entry. Everyone should carry a common form of photo identification (e.g. driver’s license) and a Veolia photo identification card, which will be distributed to staff prior to an event. We will also distribute magnetic vehicle signs to some personnel.

Once the storm event has passed, staff will focus on the following:

- Addressing medical care needs
- Accounting for all personnel
- Establishing contact with client and other off-site staff members
- Assessing the condition of the facility
- Placing the facility back into operation without damaging equipment
- A Job Safety Analysis MUST be completed for every task after a severe weather event, regardless of prior completed JSA for the task. *ALWAYS assume an employee can be injured completing a task until a determination has been made that task completion is safe.*
- All contractors MUST complete the Health, Safety & Security Orientation when working on the premises (including all areas away from plant site, such as lift stations), following a severe weather event. Completion of the Orientation is mandatory; *prior completion of the Orientation does not waive this requirement.* New hazards could exist due to the storm event, such as debris, flood waters, conditions of equipment, slippery walkways, removal or change in location of first aid and fire extinguishing materials, etc.

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Safety of personnel will continue to be our primary concern. Specific activities to be executed after the event are shown on the checklists included in this document.

*Personnel not able to return to the facility after the storm event, and in accordance with their work schedule, must call the Veolia Water North America, Northeast LLC Emergency Response number(s) to advise the company of their status. The official company rule is published as follows:*

- 1) Call the Shared Services Center within 48 hours following disaster.*
- 2) Your message should include: a) your name, b) project name, c) 2 contact numbers for you, and d) the name and number of at least one other contact person*

*The number is: Shared Services Center 800-646-4601*

### **Communications**


The following means of communication are available at the facility

1. Telephones (land lines)
2. Cell phones
3. Gaitronics Intercomm system
4. 2-way radios (for in-plant communications; capable of transmitting over a distance of up to 6 miles, 250,000 square feet, or 20 floors)
5. Internet (storm radar and tracking information)
6. Satellite phone (in Project Manager’s possession; to be provided to remaining on-duty operators prior to Project Manager leaving facility)

On-site operators shall maintain contact with City of New Bedford DPI Commissioner Jamie Ponte or his delegate Justin Chicca in accordance with the checklist entitled “Employee Tropical Storm/Hurricane Preparedness Checklist (for Employee Scheduled to be On-Site During Event)”. All employees are responsible for maintaining contact with their respective Veolia Water supervisor during and after the storm in accordance with the applicable checklist.

Veolia may maintain a number of satellite phones for distribution to projects that appear to be in the path of a hurricane depending on availability and severity of the event. The phones will be sent via express delivery such that they arrive at the projects at least 48 hours before the storm is estimated to impact the project. The project will be responsible for maintenance and care of the satellite phone(s) throughout the duration of use at the project.



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## **Staging of Recovery Teams, Contractors, Equipment and Materials**

The Employee parking area on the north side of the administration building shall be used as the primary staging area for recovery personnel living quarters and vehicles (see “Recovery Staging Area Plan” for a graphic display of the area). The secondary area is the Conference Room in the Administration Building. The remaining adjacent clear spaces in the visitor parking area may be used as-needed. There is an additional area behind the garage of the Administration building that may also be used for staging of equipment and materials. If needed, the SMAST building Parking lot (which has access to the employee parking area) may be used in the event flood waters have reached facility periphery roadway areas.


### **Considerations**

#### *Tropical Storms and Hurricanes (Category 1)*

The primary concern during a tropical storm or Category 1 hurricane is loss of power. Upon loss of power, the back up generators will start provided the supply of natural gas has not been impeded. If natural gas is unavailable due to either a break in the line or a shut down by the utility company, and utility power is unavailable as well, plant will need to be shut down.

1. Secure the generators in the off position
2. If it is determined it is better advised to maintain the influent gate in the closed position, close the Influent Gate to the treatment facility: This can be done manually with the hydraulic pump at the Rodney Hunt gate panel. If more immediate gate closure is warranted, hydraulic valves can be isolated, hydraulic line disconnected, then hydraulic pressure relieved by opening the hydraulic valve. This will cause the gate to close by its own weight. It will also result in the gate resting in a closed position with an inability to reopen it until hydraulic pressure is restored. Provisions should be implemented that will allow operation of the gate with a portable gasoline powered hydraulic power pack. This will enable better ease re-opening of the gate once utility or generator power is restored.
3. If it is determined that it is better advised to maintain the influent gate in the open position, plant staff will isolate hydraulic valves in a closed position in the event of power loss and unavailable generator power.

Due to the automated nature of the facility, even momentary power interruptions have a detrimental effect on performance of the treatment process. The standard operating procedure for any power outage is first to ensure the generators start as designed. Follow manual starting SOP if automatic sequence is not initiated. Once generator power is established, the next priority

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is to make sure the influent pumps are pumping. The second priority is chlorination and de-chlorination. Equipment can then be restored as to the order in Standard Power Restoration SOP.

In cases when lightning is present, nearby lightning strikes can overload the surge protection systems and cause permanent damage to systems and equipment. Inserted below is the site specific Generator SOP.

### **Demand Response Program SOP**

Location:

Main Switch Gear Room


Middle of Main Switch Gear

1. Obtain a set of two-way radios, proceed to the switchgear
2. Turn Demand Response Control Key
- 3.. Turn black handle from normal to load shed.
4. Immediately step out of the switch gear room to eliminate the risk of arc flash.
5. Once generator starts up, emergency power is now powering the plant.  
\*\*\*\*DO NOT TURN BACK TO NORMAL\*\*\*\*  
NSTAR MUST RETURN BACK TO NORMAL POWER
6. Proceed with phone calls per Power Outage Procedures.

**\*\*\*THIS MUST BE DONE IMMEDIATELY ONCE CALL COMES IN TO PROCEED WITH THE “DEMAND RESPONSE PROGRAM”.**

#### **NOTIFICATION FOR THE ABOVE WILL BE AS FOLLOWS:**

1. There will be an automated phone call from Constellation or CRS stating that as of (time) **“ISO-NE has called a Real Time Demand Response (RTDR)- Action 2 curtailment event. Please curtail your load per the following....”** You will be asked to curtail your energy usage within 30 minutes of receiving this message. They will then call you back when you are able to ramp back up to normal usage when the event is over. The event could be 7am – 7pm, non-holiday weekdays and the request will be from an automated phone message. Past history indicates the audit or “test” events are between the hours of 8:00 AM and 5:00 PM.


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2. The request will be to curtail our usage within 30 minutes.
3. Notify Chief Operator immediately if you get this message. The Chief will then Notify:
  - ALL PLANT STAFF OVER THE INTERCOMM SYSTEM**
  - a. The Solids operator to shut down. If the chief is the solids operator notify the the operator to take your place.
  - b. Electricians (2) Mechanic (1) Maintenance Manager
  - c. Maintenance Manager
  - d. Plant Manager
  - e. Operations Manager

**NOTE:** The utility worker may be assigned this notification task while the Chief advises solids operator to **shut down solids operations** (1) shut down truck loading operations (2) Shut down Centrifuge feed pump to GBT (3) Shut down TPS pumps to holding tank. Once the above steps are completed, solids operator to proceed to aeration building and shut down aeration blowers, to allow them to shut down in proper sequence. Then proceed to the switchgear room with Chief Operator.

4. Chief will then proceed to Main Switch Gear Room with the solids operator (if none other) who will act as attendant to the Chief in the Switchgear room. The Chief will don the appropriate PPE, and go on generator power, by turning the key switch to activate generator power. The **Chief will then proceed to the generator room, to be available to start one manually if necessary while the operator will proceed to the influent pump room to start them manually if necessary:** **NOTE: All staff shall have portable radios prior to initiating the generator start sequence. See step #1 at the top of the page..**
5. Ensure critical equipment is running (Influent pumps, chlor – dechlorP then wait for assistance to get remaining plant on line. We do not want to bog down the generators if they are in trouble and or out of sequence.
6. Duration will be 2 – 4 hours but could be more.
7. Once on generator power, Contact EVERSOURCE (dispatch) to notify them we will eventually need a switch over back to utility power.
8. After 1 -2 hours on generator, a staff member shall be assigned to man the phones to receive the notice to go back to Utility power. Once this message is received, N-STAR shall be notified to turn us back to utility power.
9. Chief Operator will then wait for N-Star staff to arrive to switch back and then restart plant equipment as per restart.

**NOTE: The Aeration Blower is to remain off during a curtailment period. Only under extenuating circumstances may a blower**

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**be started and then only with Project Manager approval and an electrician present.**

Contact Numbers:

Kenneth Henrique:	508-202-3707	Maintenance Manager cell
	508-677-3773	(home)
Electricians:	774-425-4309	Dave Oliveira (home)
	508-998-8813	Mike Medeiros (home)
	508-991-0222	(cell)
John Caron:	508-802-7936	Project Manager cell
	774-849-5018	home
Lead Chief Operator	xxx-xxx-xxxx	Lead Chief cell
	xxx-xxx-xxxx	home

**EVERSOURCE Contacts”**

**Daniel Stansfield: Load Response Manager (413) 664-4900 x 27**  
[Daniel.stansfield@constellation.com](mailto:Daniel.stansfield@constellation.com)


**NSTAR contacts: Regular hours: 508-441-5111**

**FIRST: CONTACT BILL ECKLIN AT 339-987-7451 AND PUT HIM ON NOTICE THE PLANT IS ON GENERATOR POWER AND WILL NEED TO BE SWITCHED BACK.**

**SUPERVISOR: ALL HOURS: 508-732-4303 same desk different phone**  
**DISTPATCH; ALL HOURS: 617-541-7858 same desk different phone**  
**Kevin LaGault: Dispatch supervisor: 508-951-3750**  
**Cell: 508-441-5123**

**CHARLIE TAVARES: 781-441-3416 account executive**  
**339-987-7107 (cell)**  
**Diane (Admin) 781-441-8917**  
**781-441-3416 office page**



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Due to the probability of lightning strikes and power interruptions during a tropical storm or Category 1 hurricane, the New Bedford Facility is equipped with two emergency generators that can assume the full load of the facility. If there is loss of power to the New Bedford Facility, the back-up generators will automatically start and the generator tie breaker will automatically close, thereby providing power to the entire facility. Emergency power will remain engaged as long as 1) The generators continue to operate 2) there is no interruption to the natural gas supply providing fuel to the generators 3) Utility power remains unavailable and 4) Until EVERSOURCE has been notified to dispatch to the facility's transfer switch to re-engage utility tie-breakers and open the generator tie breaker. In the event utility power is unavailable and generators fail to operate, influent flow cannot be lifted and flow through the facility will cease. Wet wells will then fill to the height of the lowest elevation Combined Sewerage Overflow in the City. As long as power is available to the Wastewater Treatment Facility be it utility or generator power, treatment facilities will continue to operate. Under a Governor declared state of emergency and/ or an order of evacuation either from state or local officials, wastewater treatment staff will secure the generators in the off position, close the influent gate, and vacate the premises if safe to do so. Closure of the gate is a questionable option. If minimal damage would occur to the onsite facilities it would be best to isolate the hydraulic gate in the open position by locking the hydraulic line supply and return valves in the closed position with the gate open. Normal sea level is at the influent pump room grating level. To prevent property damage, in the event the gate were to be left open, all doors in the influent building including garage bay doors could be left in the open position prior to evacuation, to allow water to escape if it ever got above the ground floor level.

Once the storm event has passed, the plant should resume to normal operating capacity assuming that there has been no damage to the facility. The Project Manager in coordination with the maintenance manager will coordinate startup of the facility with notice to proceed from City or state officials.

*Hurricanes (Category 2 or higher)*

In the event of a Category 2 (and up to a Category 4) hurricane, minimum plant staffing shall be comprised of (2) Chief Operators (2) Electricians (2) operators and (2) utility workers 24-hours per day. The purpose of the redundant positions are in order for one crew of Chief, Electrician, Operator and Utility worker to man the plant while the other rests. Once a hurricane reaches Category 5 strength, however, no staff will required to be on site.

Hurricanes are capable of causing catastrophic damage and employee injury. The severity of a hurricane can change in a short amount of time; thus it is prudent to treat Category 2 and higher hurricanes with the same level of preparedness.

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Travel to and from the facility is generally restricted prior to and after a major hurricane, limiting assistance from relief crews. Therefore, the plant will be completely shutdown approximately three hours prior to the arrival of tropical storm force winds. In preparation for the shutdown, the City of New Bedford will direct the plant to completely shutdown one train 24 hours in advance of the storm. The second train will operate at a maximum of 28 mgd (or less as demand dictates). Once the plant is shutdown, the all the isolation valves to the bulk storage tanks will be closed, critical systems will be powered-down at the breaker, the polymer and lime slurry tanks will be pumped down, and the unsecured equipment will be moved inside or tied down in place.

Once the storm event has passed, the plant should be restarted and resume to normal operating capacity assuming that there has been no damage to the facility. All employees shall stay in contact with management in accordance with the applicable checklist. Employees who are regularly scheduled for the shift at the time of the hurricane shall report to the plant as soon as it is safe to do so. Employees have the option of staying at the facility during the hurricane.


### **Definitions of Terms**

*Advisory* – Information message from the National Weather Service or local emergency management agency. Identifies the storm location, intensity of winds, and direction of movement.

*Category 1 Hurricane* – Winds 74-95 mph. Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage.

*Category 2 Hurricane* - Winds 96-110 mph. Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings.

*Category 3 Hurricane* - Winds 111-130 mph. Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtain wall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Flooding near the coast destroys smaller structures with larger structures damaged by battering from floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles or more. Evacuation of low-lying residences with several blocks of the shoreline may be required.

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*Category 4 Hurricane* - Winds 131-155 mph. Storm surge generally 13-18 ft above normal. More extensive curtain wall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the center of the hurricane. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles.

*Category 5 Hurricane* - Winds greater than 155 mph. Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles of the shoreline may be required.

*Hurricane Watch* – Hurricane conditions (winds in excess of 74 miles per hour) are possible, within 26 to 36 hours.

*Hurricane* – A severe tropical system with sustained winds of 74 miles per hour or greater.

*Hurricane Warning* – Hurricane conditions are *expected* within 24 to 36 hours. Storm preparations should be completed and evacuations under way (as directed by local emergency managers).


*Management Team* – Consists of the Project Manager, Operations Manager, Maintenance Manager, and Administrative Assistant at the New Bedford Wastewater Treatment Facility.

*Saffir-Simpson Hurricane Scale* - A 1-5 rating based on the hurricane's present intensity. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as storm surge values are highly dependent on the slope of the continental shelf and the shape of the coastline in the landfall region.

*Storm* – In the context of this SOP, refers to a tropical storm or hurricane

*Tropical Depression* – An area of disturbed tropical weather, which given the proper conditions could organize into a tropical storm. Maximum sustained surface winds less than 39 miles per hour.

*Tropical Storm* – A tropical system with maximum sustained surface winds of 39-74 miles per hour.

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*Tropical Storm Watch* – Tropical storm conditions are possible within the specified area, within 36 hours.

*Tropical Storm Warning* – Tropical storm conditions are expected within the specified warning area, usually within 24 hours





## New Bedford Specific Plan

# Emergency Action Plan



# **New Bedford, MA WWTP**

## **EMERGENCY ACTION PLAN**

**Rev. 1/23/2020**

**EMERGENCY ACTION PLAN**

# New Bedford WWTP

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# EMERGENCY ACTION PLAN

New Bedord

## A. GENERAL PROVISIONS

### 1. AUTHORITY:

Title III, Emergency Planning and Community Right-To-Know, of the Superfund Amendments and Reauthorization Act of 1986 (SARA), U.S. Public Law 99-499, and 29CFR1910.38 Employee Evacuation Plans and Fire Prevention Plans Occupational Health and Safety Administration (OSHA) regulation.

### 1. PURPOSE

The purpose of this plan is to establish planning and operational action that will be taken prior to, during, or after an emergency situation occurs. The primary objectives are the prevention of injury or death, prevention or limitation of property damage, and the timely restoration of normal operations.

## B. BASIC PLAN

### 1. SITUATIONS AND ASSUMPTIONS

Water and wastewater treatment plants are susceptible to major emergencies and or disasters in the form of flood, fire, severe weather, hazardous material spills, and vandalism. Any of these situations can involve loss of life, personal injury, a disruption of the normal work routine resulting in lost productivity, or possible effect of Project persons or effect effluent quality. The degree of loss is dependent on the event, its severity, and the level of preparedness. The rapidness in which such an event can occur makes preplanning a requirement for utilization of personnel and resources to minimize loss.

VWNA's responsibility to the client, the employee, and the surrounding community necessitates the development and execution of emergency plans. These plans should include notification to local emergency response agencies, the in-house Emergency Action Team, and the coordination of all emergency activities.



## 1. MISSION

### CONCEPT:

Once it is determined that an emergency exists or has a high probability of occurring, the Emergency Action Plan should go into effect. The first step is notification of local agencies that assistance is needed; the second step is to begin the in-house emergency call out sequence.

The need or potential need for evacuation measures should be assessed at this time and 911 should be called to notify the police and fire departments if evacuation is required.

Plant personnel must take steps within their scope of ability to mitigate the emergency until more trained emergency responders arrive. They must know the limits of their abilities so the actual emergency is not further increased by their endangerment.

The arrival of emergency responders requires the cooperation of on Project personnel to assist them in conducting emergency operations in the most efficient manner.

The recovery period begins with a damage assessment, clean up, restoration of operations, notification that evacuation is over, and consideration of Local, State, or Federal assistance is needed.

## 3. ORGANIZATION AND RESPONSIBILITIES

The following is a listing of the key people given responsibilities in an emergency situation and a description of their major duties under the plan.

### EMERGENCY ACTION TEAM (EAT)

- Project Manager approves supplies needed to support the Emergency Action program, approves deletion or addition of personnel to the EAT, interfaces with Client officials and the news media, notifies the local Emergency Response Coordinator and National Response Hotline if it is a chemical emergency, and is chairman of the post-incident review board.
- The Project Manager assigns personnel to the EAT, utilizes the people and resources allocated to emergency action planning to put the plan into action and direct clean up activities. This position is responsible for up to date training in emergency procedures, attends the post-

incident conference, and corrects any findings of deficiencies in the existing methods of action.

- EAT Coordinator is the Project Safety Coordinator. This individual assists by providing technical assistance, personal protective equipment, and operation start-up or shut down, and assists the employees and Project Manager as needed. This position attends the post-incident review conference and works to implement findings of the post-incident review.
- Project Safety Coordinator works with outside agencies to set up training programs to facilitate the emergency action effort. This position reviews training and mock drills for improvement, participates in the post incident review, and makes written corrections to the plan as indicated by the review. This individual will update and verify the EAT call out personnel listing monthly in consultation with the Project Manager.
- Project Safety Coordinator deploys the EAT under the direction of the Project Manager. This individual coordinates materials and manpower in the field to insure that proper corrective action is being taken and observing correct safety precautions. He/ She works in the coordination of mock drills, other training, and attends the post-incident review.
- First Responders Awareness level (in house) are full time employees with sufficient training or experience to objectively demonstrate competency when dealing with hazardous substances who first determines the existence of an emergency or potential emergency situation. This individual instigates the emergency call-out procedure by notifying an operator or shift supervisor (if available) or most senior person to direct the immediate emergency effort. This individual attends the post review conference.
- First Responder Operations level are trained personnel with the necessary training to respond to releases of hazardous substances as part of the initial action or protecting nearby persons, property, and the environment from the effects of the release. This individual determines the existence of an emergency or potential emergency and is trained to shut valves, contain the spill at a safe distance, and initiates the emergency call out procedure. This individual attends the post-incident review conference.
- Hazardous materials technician are trained personnel to respond to releases or potential releases for the purpose of stopping the release by means of plugging patching or otherwise and can instigates the

emergency call out procedure if necessary. This individual is from the local HazMat Team and attends the post-incident review conference.

- Staff Support personnel are listed in the emergency call out procedure. The Project Manager, EAT Coordinator are each authorized to call out more personnel if the situation warrants. Persons noted in the call out must become the most highly trained personnel in the facility in emergency action procedures and are required to attend all training sessions.
- Base Operator is assigned to monitor all incoming phone or radio calls, make calls for more emergency personnel, equipment or services.
- Review Board meets after the incident to investigate the incident, its causes and prevention, the effectiveness of the plan, additional training requirements, personal protective equipment requirements, and corrections or modifications to the plan. Outside emergency response personnel should be invited to send a representative. A Client representative should be invited to attend.
- All other facility employees should be trained in the call out procedure and in basic emergency action techniques to mitigate the emergency until specialized help arrives.
- VVNA Corporate staff should be prepared to assist the Project Manager with potential litigation stemming from an emergency incident, coordinate events with insurance carriers, work with local, State, or Federal officials in requests for aid or assistance.

### 3. UPDATE

The plan should be reviewed no less than annually or in the event of any of the following:

- Addition of any potentially hazardous process, chemical, or other situation that might expose plant personnel or Project persons to risk.
- A post-incident review indicates that revision is necessary.
- Training or mock drills expose areas that are not addressed in the emergency action plan.
- Legislation requires that other areas be included or existing conditions be broadened.

### 4. MATERIAL SAFETY DATA SHEETS (MSDS)

Material Safety Data Sheets for the New Bedford are located at the main office in a 3" ring binder notebook. MSDS for chemicals used in the laboratory are kept in the plant's lab.

## 5. EMERGENCIES AND PROCEDURES

### SEVERE WEATHER

The potential for severe thunderstorms, tornadoes, ice storms, and snowstorms is normally seasonally dependent. The greatest danger of severe weather occurs in the spring months due to severe thunderstorms and tornado activity. However tornadoes can occur at any time of the year that weather conditions permit.

- Due to the remote location of the facility, weather updates will have to be made periodically to monitor the situation. During periods of severe weather, local radio and television stations make frequent weather updates.
- In the event of a severe weather watch, office personnel should monitor the weather and update plant personnel as needed. If the plant is staffed with shift personnel only, frequent calls to National Weather Service can provide up to date weather information.
- If a tornado warning is issued, all personnel should be notified to move to a safe area. If time is available and it can be safely done, vehicles should be driven through the plant warning persons to take cover by making long blasts on the horn. The project will notify field crews by radio.
- When it is necessary to seek shelter, persons should move away from windows and away from exterior walls, the smallest rooms are the most structurally strong, e.g. closets, restrooms, and so forth. Person should remain in the sheltered area until an all-clear signal is given. The Project Manager or most senior person should make the decision that the emergency is over on shift if the plant is not fully staffed at the time.
- All personnel must immediately be accounted for in case injury may have occurred to an employee.
  - ◊ The highest-ranking person for each department on the Project should meet all employees in that department at the main control room.



- ◇ In the event someone is missing; groups of at least two will be assigned areas of the facility to search. One or more group members should be CPR and First Aid trained.
- ◇ Upon finding a victim, the CPR trained searcher will stay to render assistance. One searcher will dispatch 911 to obtain emergency medical help. Remember never to hang up first when talking to an emergency dispatcher; they should be the one to end the conversation.
- ◇ In the event there is structural damage to the facility and someone may be trapped, it is still necessary to report to the Department Manager for a head count. Then it may be determined who and how many persons to be located.
- ◇ The Project Manager and other department manager should meet as soon as possible to coordinate restoration activities. This may include a Client representative who may be able to provide assistance from other Client services.
- ◇ The Project Manager or Area Manager should interface with Corporate and Client representatives for insurance, Federal assistance, regulatory agencies, and news media as required.
- ◇ The Project Safety Coordinator as head of the Emergency Action Team will meet with the Project Manager and Department Managers to direct all rescues and clean up activities.
- ◇ The Project Safety Coordinator should review the incident and prepare a report.
- ◇ The post-incident review board should meet to analyze the incident and make needed amendments to the plan.

## EMPLOYEE ACCIDENTS

Follow procedures in the VWNA Accident Procedures Manual.

## FLOOD

Flooding is a foreseeable event, so planning becomes easier.

1. The EAT Coordinator, Project Manager and other personnel as requested should meet at the earliest indication of severe flooding to coordinate personnel and possible supply needs.
1. In periods of heavy rainfall when flooding appears possible; contacting the National Weather Service or watching the Weather Channel can monitor flood stages. The Project Manager will designate a person to make these calls and will instruct the caller in the way the information should be relayed to the EAT.

1. The EAT or persons otherwise designated to remain on duty during the period of flooding should be notified in advance as much as possible.
  - They need to make personal arrangements for their own family or property during this time
  - They should be given a definite time to report to the facility and instruction of any items they should bring such as sleeping bags, etc.
  
1. The EAT Coordinator should assess certain needs of the plant during the flood period.
  - Food and drinking water should be stocked to last a minimum of 2 days. The possibility of loss of potable water is remote but possible, thus bottled water will be needed for drinking and washing.
  - Utensils for cooking, eating, and drinking are needed.
  - The staff should be instructed to test or set all valves that will be needed during high flow periods.
  - The radios and portable phones should be checked and assigned for communication with other employees.
  
1. The Project Manager will need to assess the needs of the plant during the flood period.
  - Determine the need for emergency generators, lighting, gas or diesel driven pumps, hose and clamps, sand and bags, shovels, batteries, and other items. Remember that in periods of disaster, many others will want these items as well and demand could easily outrun supply.
  - The mechanics should check the lift pumps and barscreens for operational status, sump pumps, roof drains, and tests the emergency generators.
  - Fuel tanks should be topped off.
  
1. Floodwaters typically carry much debris that may be dangerous or contains snakes or other animals.
  - All persons should avoid walking in floodwaters as much as possible. The buddy system should be used in areas of flooding.
  - Floodwaters are normally highly contaminated from runoff and other pollution sources. Persons should wear rubber boots and have several changes of clothing.
  
1. After floodwaters recede, the Project Manager and Project Safety Coordinator and other designated employees should tour the Project to review any damage.

A meeting of all managers and a Client official should be held as soon as possible to review damage and expedite expenditures or aid by other City services to return to normal operations. Federal assistance may be needed. The VVNA Corporate Office, Service Center Vice President, Area Manager, EHS&S Manager, and Client officials will need to coordinate this activity as soon as possible.

1. The individual department managers should meet to coordinate personnel for the cleanup effort. Since normal work routines are disrupted, personnel from another department may be temporarily assigned to maintenance or operations during the restoration period.
1. The Project Safety Coordinator will prepare an incident review.
1. The Review committee will meet to review the incident. Amendments to the plan will be made as necessary.

## FIRE

Firefighting necessitates special apparatus and skills to avoid personal injury and to effectively control or stop a fire. Ideally the EAT will respond to the fire. However a fire may occur at times when the plant is not heavily staffed and the EAT members are not present. For this reason plant personnel should all receive basic instructions in fire notification procedures.

1. At first indication of a fire, all nearby workers should be notified to evacuate the area immediately. The first responder must then evaluate the situation and decide on the appropriate course of action.
  - Notify the Fire department him/herself or send another to do so by dialing **911**. Notify the EAT according to the call out listing in Appendix A.
    - ◇ Notify the Fire Department of the following:
      - ◇ Name of Caller
      - ◇ Location of Fire
      - ◇ Type of fire (if known)
      - ◇ Number and nature if injuries (if known)
      - ◇ Do not hang up until the dispatcher ends the conversation.
  - Turn off any nearby power and/ or fuel supply that could aggravate the situation. (All EAT personnel and shift supervisors must be made aware of these locations and procedures)

- Begin incipient firefighting with fire extinguisher (one fire extinguisher limit) if the situation can be controlled by that method.
  - Begin an evacuation of the plant; notify 911 of the need to evacuate nearby residents.
2. The fire department will need to be updated by the EAT on the situation as soon as they arrive.
  3. If the situation, is beyond the control of the shift personnel, they may do the following to aid the EAT after notifying the fire department.
    - Make any operational changes such as basin changes equipment starts or stops, and so forth as needed to maintain treatment efficiency.
    - Shut off all electrical power to the effected area by the disconnects.

A. CHEMICAL FIRE

The Fire Department should be contacted to handle a chemical fire. MSDS's on the chemicals should be made available to the Fire Department.

B. ELECTRICAL FIRE

1. Immediately evacuate if the transformers are smoking or burning.
1. An electrical fire should trip the breaker. No water should be applied until this is known for sure since voltage will come back through the hose stream. Ideally halon extinguisher or those marked TYPE C should be used on electrical installations.
1. The breakers are found in the substations and are all labeled.

C. COMBUSTIBLE FIRE

This is wood, paper, rags, and so forth having a flash point above 100 F. Use water, dry chemical, foam or any extinguisher marked TYPE A.

D. FLAMMABLE FIRE



This would be any material having a flash point below 100 F such as gasoline. Use the extinguishing media listed above or any extinguisher marked TYPE B.

4. The EAT Coordinator will insure that all fire extinguishers are refilled at the earliest possible time.
5. The Project Manager, EAT Coordinator, other staff members that are needed, and a Client Representative if appropriate should tour the facility. There should be a meeting to assess restoration activities, the need for additional services, approval of expenditures and so forth.
6. The Project Manager will coordinate all restoration activities.
  - Need for additional staffing or equipment for the maintenance department should be ascertained.
  - Interim operating plans to maintain treatment efficiency should be formulated if necessary.
7. The EHS&S Manager and Area Manager should interface with the insurance carriers, regulatory agencies, and other parties with corporate assistance.
8. The Project Safety Coordinator will prepare an incident review.
9. The Review Committee will meet to investigate the incident. Any necessary amendments will be made to the plan.

## BOMB THREAT

The person receiving the call should attempt to obtain the following information:

1. The person receiving the call should attempt to obtain the following information:
  - ◇ Exact message
  - ◇ Voice and background information
  - ◇ Questions such as where, when, why and any other information that you are able to receive.
1. The First Responder calls the following.
  - ◇ 911
  - ◇ EAT per the call out list in Appendix A.
1. Evacuate all personnel from the danger area if it is known or to office building if it is not known.

1. EAT will interface with the police and fire department in a building search as needed.
1. EAT will make operational changes as needed to maximize treatment efficiency and minimize potential personnel exposure or losses.

## HAZARDOUS CHEMICAL SPILLS OR LEAK

Hazardous chemicals are defined as those compounds capable of causing degradation of health, loss of life, environmental damage, or damage to property due to toxic or reactive properties.

### Distribution & Collection System

- ◇ The local HazMat Team should notify the plant personnel with all pertinent data.
- ◇ The EAT Coordinator and Project Manager will meet to evaluate potential equipment or process damages.
  1. Determine the need and method of influent liquid or atmospheric monitoring.
  1. Determine if damage to plant equipment is possible.
  1. Determine if treatment modes must change. If so, determine the need to notify regulatory agencies.
  1. Determine if personal protective equipment is needed.
- ◇ The Project Manager will interface with the Client Representatives and regulatory agencies as the situation warrants.

### On Plant Grounds

- ◇ The first responder (awareness level) will have to determine the extent of the leak and spill and if it can be controlled with the personnel and equipment available.
- ◇ If there are victims, determine personal protective needs for the rescue and First Aid needs.
- ◇ Dialing 911 on a telephone should contact the fire department or HazMat team if there is a hazardous material spill or possible need for neighborhood evacuation.
  1. Notify them of the following:
    - ◇ Name of the caller
    - ◇ Name and location of the facility
    - ◇ Type and quantity of the chemical
    - ◇ Victims and their condition
  1. If emergency vehicles are called, a person should be sent to the front gate to direct them to the scene.
- ◇ Call the EAT according to the call out list in Appendix A. The MSDS should be retrieved by the person calling the EAT or other emergency help, or by the Shift Supervisor if outside help is not being sought for emergency information and contacts, personal protective equipment requirements, and other data.

- ◇ Methods of Containment.
  - 1. Initiate fire extinguisher firefighting procedures as discussed if necessary.
  - 1. Shut off source of leak if you are working on the equipment when the leak occurred and you have adequate training to stop the leak. If this cannot be done, alert the EAT.
  - 1. If the material is liquid and non-volatile, attempt to dike the material to a safe temporary storage area.
  - 1. Use an inert absorbent material such as sand, oil soak, or dirt to absorb the spill.
- ◇ Determine the proper means of disposal by consulting the MSDS. The Project Manager will assist in ultimate disposal methods if Local, State or Federal regulations apply.

**APPROVAL**



PROJECT MANAGER

**BOB DRAVDA**

Project Safety Coordinator

**REVIEW OF PROGRAM**

Reviewed by  \_\_\_\_\_

Date: 1/23/2017

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

## APPENDIX A

### EMERGENCY CALL OUT PROCEDURE

When an emergency occurs at the New Bedford WWTP that is beyond the control of the plant personnel, emergency personnel are to be notified.

The First Responder (Plant Personnel) or EAT determines the staging areas (meeting place) for the employees to gather.

Suggested areas are:

- ◇ Waste Water Treatment Plant (Office)
- ◇ Parking Lot at Plant
- ◇ City Hall/Fire Department

The First Responder (plant personnel) or EAT calls the following:

- 911

<b>Name</b>	<b>Position</b>	<b>Home</b>	<b>Mobile</b>	<b>Alt</b>
John Caron	Project Manager	(774)849-5018	(508)802-7936	508-982-9628
Ken Henrique	Maintenance Supervisor	(508)677-0938	(508)202-3707	
Collis Soares	Lead Chief Operator		(774) 992-4380	
Bob Arruda	Project Safety Coordinator	(508) 995-7734		
Darlene Domingos	VP or Operations	(508) 540-1308	(508) 889-1242	

The managers will call individuals in the most current VWNA Crisis Management Program.



**APPENDIX B**

**TELEPHONE NUMBERS - REGULATORY AGENCIES  
AND EMERGENCY SERVICES**

EMERGENCY SERVICES	911
CHEMTREC:	(800) 424-9300
STATE ENVIRONMENTAL PROTECTION(DEP)	
POLICE DEPARTMENT EMERGENCY NUMBER ON-EMERGENCY NUMBER	911
FIRE DEPARTMENT EMERGENCY NUMBER NON-EMERGENCY NUMBER	911
AMBULANCE EMERGENCY NUMBER NON-EMERGENCY NUMBER	911
HOSPITAL (ST. Luke's) Hospital (Emergency)	(508)961-5388
POISON CONTROL CENTER	(800)222-1222



**City of Taunton, MA**  
**Underground Asset Management Program**  
**Sample Pump Station Documents**  
**Standard Operations Procedures**



# **STANDARD OPERATING PROCEDURES**

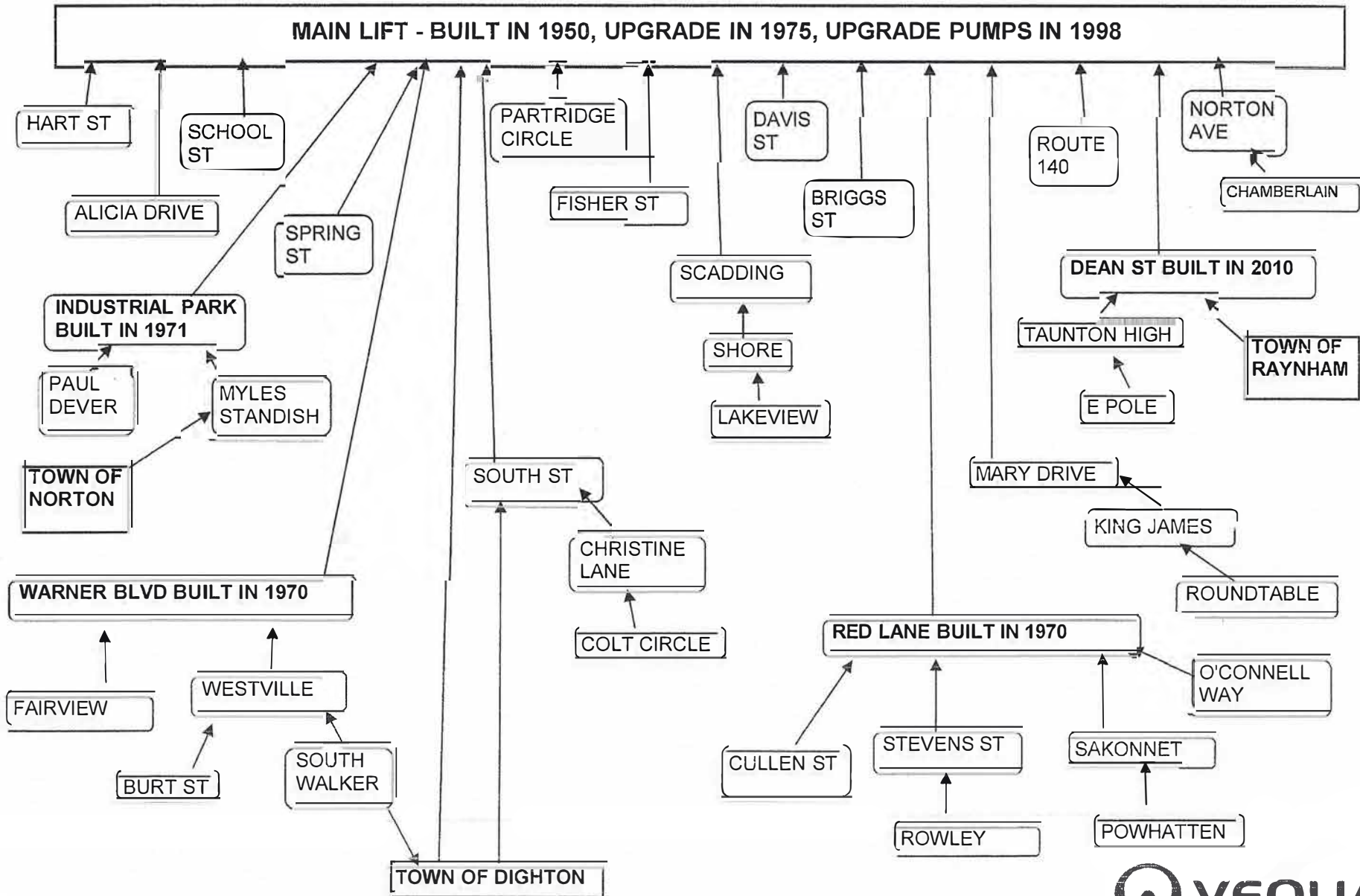
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## **Operate and Maintain City of Taunton Sewer Pumping Stations**

Updated 10/31/12

# City of Taunton Sanitary Sewer Pumping Stations

## FLOW MATRIX







## Table of Contents

- I. Pump Station Addresses
- II. Applicable Regulations
- III. General Information
- IV. Continuous Monitoring
- V. Operation and Maintenance
- VI. Operation and Maintenance Manuals
- VII. Standby Power
- VIII. Safety

Appendix A includes a one page data sheet for each station (alphabetical order)

Appendix B shows a mapping of the sewer lines discharging from each station (alphabetical)

Appendix C includes print outs of the SCADA screens for the remote stations.

## I. Pump Station Addresses

	Alarm Code	Pump Station Name	Actual Address	Phone No:
1	SCADA	Main Lift Station	690 West Water Street	880-2872
2	SCADA	Route 140 @ Mozzone Blvd.	140 County Street	822-5194
3	SCADA	Dean Street	127 Arlington Avenue	822-5194
4	SCADA	East Taunton (Red Lane)	20 Red Lane	822-1059
5	SCADA	Hart Street (Whispering Pines)	198 Hart Street	821-9723
6	SCADA	Industrial Park (Crane Ave)	385 John Hancock Blvd	822-1059
7	SCADA	Spring Street	17 Spring Street	822-0471
8	SCADA	Warner Boulevard (across from CVS)	25 Joseph E. Warner Blvd.	822-5194
9	SCADA	South Street	63 South Street	822-0471
10	SCADA	South Walker	212 South Walker Street	822-0471
11	SCADA	Westville	404 Winthrop Street	No Phone
12	SCADA	Sakonnet Avenue (East Taunton)	1 Sakonet Avenue	No Phone
13	SCADA	Colt Circle (Warner Blvd) <i>Formerly Clark</i>	9 Colt Circle	No Phone
14	SCADA	O'Connell	O'Connell Way, East Taunton	No Phone
15	SCADA	Taunton High School	Williams Street	No Phone
16	SCADA	E Pole Middle School	Harris Street	No Phone
17	SCADA	Burt Street	628 Winthrop St	No Phone
18	905	Scadding	175 Scadding Street	880-0567
19	910	Rowley Street (Carpenter's Glen)	Rowley Street	828-9643
20	912	Wellesley Circle @ Cullen Street	76 Wellesley Circle	821-4926
21	913	King James 1	440 King James Blvd.	821-4913
22	914	Lakeview	153 Lakeview Avenue	822-4872
23	915	Mary Drive	51 Mary Drive	821-4913
24	916	Roundtable (King James II)	Roundtable Lane	823-2643
25	920	School Street	School Street across from 275	821-3507
26	930	Shore	31 Shore Drive	823-2547
27	935	Myles Standish (Pepsi)	650 Myles Standish Blvd.	823-7450
28	940	Powhatten Estates (East Taunton)	242 Powhatten Drive	880-5126
29	945	Davis Street (Oakland Terrace)	32C Davis Street	821-4013
30	950	Fairview Avenue	45 Florence Street	822-0471
31	955	Fisher Street @ Highland	21 Fisher Street	822-0267
32	960	Briggs Street	71 Briggs Street	823-7450
33	965	Stevens St @ County Street	110 Stevens Street	822-1059
34	970	Norton Ave. (Taunton Nursing Home)	355 Norton Ave	823-7450
35	975	Alicia Drive (Harts Ridge)	11 Alicia Drive	822-8435
36	990	Partridge Circle (Pheasant Run)	150 Partridge Circle	821-3605
37	996	Christine Lane	58 Christine Lane	977-9297

## II. Applicable Regulations

Veolia Water inspects, operates and maintains sanitary sewer pumping stations for the City of Taunton in accordance with the requirements of MA DEP 314 CMR 12.00 “Operation and Maintenance of Sewer Systems and Wastewater Treatment Facilities.”

In accordance with MA DEP 314 CMR 12.04 (4)

“Any person operating a sewer system shall cause the daily inspection of all pumping, ejector or lift stations on intercepting, trunk or main sewers.”

The following sewer pumping stations are on intercepting, trunk or main sewers and are required to be inspected daily:

Scadding St.  
Stevens St.  
Red Lane  
Route 140  
Spring St.  
South Walker  
Christine Lane  
Davis Street  
Norton Ave  
King James  
Westville  
Warner Blvd.  
Mary Drive  
South Street  
Industrial park  
Dean Street  
Main Lift  
Myles Standish  
Sakonnet  
Colt Circle  
E. Pole  
Taunton High School

The pump stations listed below are on branch sewers and are checked four times per week. These stations shall be inspected every Monday, Wednesday, Friday and Sunday.

Roundtable  
Fairview Ave.  
Alicia Drive  
Harts Ridge / Whispering Pines  
Shore Drive  
Lakeview



Briggs Street  
 School Street  
 Fisher Street  
 Partridge Circle  
 Wellesley Circle / Cullen  
 Rowley Street / Carpenter's Glen  
 Powhatten Estates  
 O'Connell Way  
 Burt Street

**Note: Sewer line definitions come from "Operation and Maintenance of Wastewater Collection Systems" – 6<sup>th</sup> Edition. Prepared by Office of Water Programs, California State University, Sacramento for the U.S. Environmental Protection Agency.**

**Branch line-** a sewer that receives waste water from relatively small area and discharges into a main sewer serving more than a sewer area

**Main line-** a sewer line that receives wastewater from many tributary branches and sewer lines and serves as an outlet for a large territory or is used to feed an intercepting sewer

**Trunk line-** are the main sewer "arteries" of a waste water collection system: they convey the waste water from numerous main sewers either to a treatment plant or an interceptor line

**Interceptor line-** a sewer line that receives waste water from trunk sewer and conveys it to the treatment plant. Some of the trunk sewers may have routed waste water to now abandoned treatment plants.

Veolia Water has completed GIS mapping of the entire sewer system for the City of Taunton. At this time, the City has 167 miles of sanitary sewer line. See Appendix B for sewer maps.

### III. General Information

Each station has at least two pumps, one of which is the back-up pump in the event of a pump failure. The pump station specifications are listed below.

Station Name	Year Built/Upgrade	Pump AG or BG*	HP	Pumps	Design Flow GPM each	TDH in feet
Route 140	1971	BG	56	2	1600	82
Stevens Street		BG	7.5	2	350	39
Dean Street	2010	BG	60	3	1650	60
Red Lane		BG	66	2	1250	119
Mary Drive	1989	BG	10	2	620	30
Hart Street	1987	BG	2	2	100	85
King James	1989	BG	10	2	250	17
Wellesley Cir		AG	2	2	125	19
Industrial Park NW		BG	75	2	1800	110

Station Name	Year Built/Upgrade	Pump AG or BG*	HP	Pumps	Design Flow GPM each	TDH in feet
Roundtable	1996	BG	3	2	120	38
Spring Street	1985	BG	36	2	870	85
Warner Blvd.		BG	10	2	550	42
Myles Standish (Pepsi)	1981	BG	7.5	2	350	42
South Street	1985	BG	50	3	775	130
South Walker	2000	BG	3	2	150	38
Fairview Ave		BG	3	2	150	28
Fisher St		BG	4	2	100	28
Briggs St		BG	1.5	2	150	15
Norton Ave		BG	10	2	150	78
Alicia Dr	1991	BG	3	2	330	25
Partridge Circle		BG	2	2	25	160
Christine Ln		BG	2	2	100	
Rowley St		AG	4	2	120	
School St		BG	2.5	2	25	
Main Lift		BG	130	4	5200	78
Davis St (Oakland Terr)	1992	BG	7.5	2	200	50
Scadding St	2002	BG	4.5	2	50	104
Shore St.	2002	BG	2	2	26	57
Lakeview Ave	2002	BG	4.5	2	50	104
Westville	2006	AG	17	1	275	69
Powhattan	2002	BG	3	2	80	43
Sakonett	2002	BG	5	2	115	85
Colt Circle	2006	AG	5	2	80	
O'Connell Way	2007	BG	6.5	2	156	72
Taunton High School	2006	BG	7.5	2	150	
E. Pole School	2007	AG	7.5	2	200	43
Burt Street	2012	BG	7.5	2	75	120

\*Pump Above Ground (AG), Below Ground (BG)

Stations on SCADA

#### IV. Continuous Monitoring

All thirty-seven stations are monitored remotely on a continuous basis. The ten largest stations and the seven newest stations are tied into the SCADA system at the wastewater plant. See highlighted stations above. Appendix C includes print outs of the SCADA screens provided for each station. The remaining 20 stations are tied into the plant through the Ademco alarm system, which is run through telephone lines. All stations communicate the following information:

- High water in the wet well
- Low water in the wet well
- Loss of one or more phases in the electric power (Power Fail)
- Engine Running (Generator Test)
- High water level in the pump room sump
- Loss of the alarm transmission
- Loss of air pressure in the bubbler tube system/level sensing trouble or failure
- Pump malfunction
- Intrusion on All Hatches / Doors
- Flow for the larger pump stations (SCADA)

The wastewater plant is staffed 24 hours a day, 7 days a week. The maintenance staff is assigned to be on-call for the pump stations on a rotating basis, such that someone is available and on call at all times. Veolia utilizes a computerized utilities work and asset management program (Oracle) for the plant and all pump stations. The program captures comprehensive equipment cost, maintenance, and depreciation data and uses this detailed historical information to document the lifecycle of each asset. This real time view into the asset allows us to better judge whether to repair, upgrade or replace assets and enhances our ability to plan preventative maintenance, identify potential work, and correct failures. The Oracle program generates work orders for all pump stations on a daily, weekly, monthly, quarterly, semi-annual, and annual basis depending upon the preventative and predictive maintenance item. We also use the program to track work cost, inventory control, and purchasing.

## V. Operation and Maintenance

Work Orders are distributed at the beginning of each month for regularly scheduled duties as specified in the table below. In addition, a work order is generated in the event of an unexpected or unanticipated failure or problem.

Item	Operation and Maintenance Duty	
	Weekly	Monthly or other
1. Pump Chamber	<ul style="list-style-type: none"> <li>➤ Open hatches and inspect interior of pump chamber.</li> <li>➤ Check high water float switch for fouling. Clean if necessary</li> </ul>	<ul style="list-style-type: none"> <li>➤ Clean wet well of grease, grit, and debris on an as needed basis. Quarterly cleanouts are scheduled with the Veolia vector truck.</li> <li>➤ Clean submersible level sensor periodically</li> </ul>

Item	Operation and Maintenance Duty	
	Weekly	Monthly or other
2. Valve Vault	<ul style="list-style-type: none"> <li>➤ Open hatch and inspect interior of valve vault.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Exercise plug valves periodically</li> <li>➤ Inspect valves for leaks</li> <li>➤ Clean drain, trap and pipe that leads back to wet well</li> </ul>
3. Flow Meter Manhole	<ul style="list-style-type: none"> <li>➤ No maintenance</li> </ul>	<ul style="list-style-type: none"> <li>➤ Inspect sump pump monthly</li> <li>➤ Simulate sump pump function to ensure operation</li> </ul>
4. Influent Manhole	<ul style="list-style-type: none"> <li>➤ No maintenance</li> </ul>	<ul style="list-style-type: none"> <li>➤ Clean influent screen of debris monthly</li> </ul>
5. Davit Crane	<ul style="list-style-type: none"> <li>➤ No maintenance</li> </ul>	<ul style="list-style-type: none"> <li>➤ Lightly lubricate lifting chain</li> </ul>
6. By Pass Pumping	<ul style="list-style-type: none"> <li>➤ No maintenance</li> </ul>	<ul style="list-style-type: none"> <li>➤ Exercise valves periodically to ensure operability</li> <li>➤ Clean manholes of debris</li> </ul>
7. Electrical/Generator Building	<ul style="list-style-type: none"> <li>➤ Clean floors of debris as necessitated</li> </ul>	<ul style="list-style-type: none"> <li>➤ Clean air intake screen and exhaust fan every three to six months</li> <li>➤ Replace lights in building as needed</li> <li>➤ Check for normal operation of all controls and indicators</li> <li>➤ Check fuel oil vent cap on roof</li> <li>➤ Inspect HVAC rooftop unit</li> </ul>



Item	Operation and Maintenance Duty	
	Weekly	Monthly or other
8. Electrical Enclosures	<ul style="list-style-type: none"> <li>➤ Operate each Hand-Off-Auto (HOA) switch in Hand for each pump motor and check for pump start.</li> <li>➤ Check interiors for dust and debris accumulations. Remove accumulations.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Three Months - check electrical voltage on incoming lines with a hand held voltage meter</li> <li>➤ Three Months - Clean dust off of cooling fans</li> </ul>
9. Variable Frequency Drives	<ul style="list-style-type: none"> <li>➤ Monitor heat sink temperatures (readout on display)</li> <li>➤ Verify VFD drives function in manual mode</li> </ul>	<ul style="list-style-type: none"> <li>➤ Periodically blow air through the cooling fan to keep the components dust free</li> <li>➤ Check circulating fans for signs of bearing failure or foreign objects</li> <li>➤ Inspect DC bus capacitors for leakage</li> </ul>
10. Emergency Generator	<ul style="list-style-type: none"> <li>➤ Check that emergency generator has run/tested itself once a week.</li> <li>➤ Inspect emergency generator – open the housing and check the engine for oil, fuel or coolant leakage</li> <li>➤ Check coolant, fuel, and oil levels.</li> <li>➤ Check that block is warm indicating that the block heater is operating properly</li> <li>➤ Be sure batteries are in operable condition and battery charger is operating properly.</li> <li>➤ Note the reading on the elapsed time meter</li> </ul>	<ul style="list-style-type: none"> <li>➤ Monthly - Check the air filter for fouling. Change air filter if dirty.</li> <li>➤ Check exhaust system for any exhaust gas leakage</li> <li>➤ Periodically, as recommended in the generator operating manual, operate generator under station load</li> </ul>
11. Pump Chamber Vent and Inlet Manhole Vent	<ul style="list-style-type: none"> <li>➤ No maintenance</li> </ul>	<ul style="list-style-type: none"> <li>➤ Check for obstructions</li> <li>➤ Change carbon filter once a year</li> </ul>

Item	Operation and Maintenance Duty	
	Weekly	Monthly or other
12. Sewage Pumps	<ul style="list-style-type: none"> <li>➤ If seals are replaced, an inspection of the oil is recommended after one week of operation</li> <li>➤ Check for abnormal noise or vibration</li> </ul>	<ul style="list-style-type: none"> <li>➤ Inspect once a year</li> <li>➤ Pumps should have a major overhaul every third year</li> <li>➤ Check the lifting handle and chain regularly</li> </ul>
13. Yard	<ul style="list-style-type: none"> <li>➤ Check outside area for debris or graffiti. Remove debris; remove or cover graffiti.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Trim scrubs and bushes once a year</li> <li>➤ Mow lawn as needed</li> <li>➤ Remove snow and ice as required</li> <li>➤ Flush yard hydrant on a yearly basis</li> </ul>

## VI. Operation and Maintenance Manuals

All operation and maintenance manuals are kept at two locations. One set is located at the pump station and one set is kept on file at the wastewater treatment plant. These are located in the file cabinets located in the conference room.

## VII. Standby Power

All of the pump stations have a generator at the station with the exception of King James, Mary Drive and Warner Blvd. These stations are checked daily. In addition, a portable generator is stored at the King James station and is available for use at King James and Mary Drive.

The WWTP also has a vactor truck that is available to pump out a wet well if a pump fails and the generator is not available. In addition, Veolia Water has a service contract with Soares Sanitation to assist in scheduled and emergency pump outs. In the event that the power goes out at Warner Blvd, a pump out truck is immediately dispatched to the station to pump out the wet well if needed.

Veolia Water has a service contract with Baraby Electric to service all of the generators at the pump stations and at the wastewater plant. Baraby provides regular maintenance service as well as 24 hour on call emergency service.

## **VIII. Safety**

Veolia Water has a safety program that includes confined space entry, lockout / tagout, and task assessments for personal protective equipment. Veolia provides regular monthly safety training and all safety equipment needed to perform the task.

All pump station wet wells are confined spaces and the confined space entry procedure must be followed. The following applies to all stations. For more information, please refer to the Confined Space Entry Binder located in the Operations Control Room.

### **IDENTIFICATION OF PERMIT SPACES**

#### **1.1 LIST OF PERMIT SPACES FOR USE WITH PROCEDURE 4.1 - STANDARD ENTRY PROCEDURES**

- 1. ALL WET WELLS AT ALL PUMP STATIONS & ALL SEWER SYSTEM**

#### **1.2 LIST OF PERMIT SPACES FOR USE WITH PROCEDURE 4.2 - ALTERNATIVE ENTRY PROCEDURES**

- 1. MAIN LIFT VALVE PIT**
- 2. ALICIA DRIVE VALVE PIT**
- 3. RED LANE – Basement & Sub-Basement**
- 4. SCHOOL STREET VALVE PIT**
- 5. PHEASANT RUN VALVE PIT**
- 6. NORTON AVE VALVE PIT**
- 7. FISHER STREET VALVE PIT**
- 8. FAIRVIEW PUMP/VALVE PIT**
- 9. S. WALKER VALVE PIT**
- 10. CHRISTINE LANE VALVE PIT**
- 11. BRIGGS ST VALVE PIT**
- 12. LAKEVIEW DRIVE VALVE PIT**
- 13. SHORE DRIVE VALVE PIT**
- 14. SCADDING STREET VALVE PIT**
- 15. POWHATTAN VALVE PIT**
- 16. SAKONET VALVE PIT**
- 17. COLT CIRCLE VALVE PIT**
- 18. DEAN STREET VALVE PIT**
- 19. TAUNTON HIGH SCHOOL VALVE PIT**
- 20. BURT ST VALVE PIT**
- 21. BURT STREET METERING PIT**

#### **1.3 REFERENCE: LIST OF NON-CONFINED SPACES FOR USE WITH “NON-CONFINED SPACE POTENTIAL HAZARDOUS ATMOSPHERE ENTRY SOP”**

It was determined that the following spaces do not meet the definition of a confined space, per OSHA 29 CFR 1910.146. However these spaces have the potential to contain a hazardous atmosphere, and an entry SOP has been prepared.

1. Main Lift Station
2. Rt. 140 Pump Station
3. Red Lane Pump Station – Top Floor
4. King James Pump Station
5. Mary Drive Pump Station
6. Spring Street Pump Station – Basement
7. Dean Street Pump Station
8. Industrial Park Pump Station (not including building)
9. Myles Standish Pump Station
10. Warner Blvd Pump Station
11. South Street Pump Station

1.4 **REFERENCE: THE FOLLOWING PUMP STATION SPACES ARE CLASSIFIED AS NON-REGULATED SPACES**

1. Top portion of Roundtable
2. Carpenter's Glen - Pump House
3. Stevens St – Top portion
4. Cullen St – Flip top
5. Industrial Park – Building
6. Warner Blvd – Top portion
7. Westville – Enclosure
8. Powhattan – Enclosure
9. Sakonet – Enclosure
10. Colt Circle – Enclosure
11. O'Connell Way – Enclosure
12. O'Connell Way – Valve Pit
13. Taunton High School - Enclosure
14. E. Pole - Enclosure





**City of Taunton, MA**  
**Underground Asset Management Program**  
**Sample Pump Station Documents**  
**Daily Electric Readings Sheet**

Month \_\_\_\_\_

Daily

Pump Station Name \_\_\_\_\_

Year \_\_\_\_\_

Electric Readings

\_\_\_\_\_

Date	Current Reading	Daily Usage kWh	Time	Initials/Comments
31				
30				
29				
28				
27				
26				
25				
24				
23				
22				
21				
20				
19				
18				
17				
16				
15				
14				
13				
12				
11				
10				
9				
8				
7				
6				
5				
4				
3				
2				
1				



**City of Taunton, MA**  
**Underground Asset Management Program**  
**Sample Pump Station Documents**  
**Partridge Circle - Pump Station**  
**(Report Document)**

Partridge Circle  
Pump Station





Partridge  
Circle



## Pump Station Data

Station Name PARTRIDGE CIRCLE PUMPING STATION  
Address 150 PARTRIDGE CIRCLE  
TMLP address PARTRIDGE CIRCLE PMSTA  
Year Built if known 1987 (Pumps replaced in 2018)  
Structure Type (wood, concrete, brick, etc) METAL CONTROL CABINET  
Structure Condition GOOD  
HVAC Equip (where applicable: boiler/heater model # , fuel type, ventilation fan(s) type & model  
N/A  
Screenings Control? NONE Type? N/A  
Discharge Pipe Size 2"  
Are the pumps in drywell or submerged? SUBMERSIBLE  
Number of pumps 2 Size 25 GPM @ 1 @ 'HEAD Pump Age 2018  
Model # LIBERTY LSG202A Speed Control? NO  
Comments on Pump Condition (s) NEW  
Discharge flow measured? NO  
Meter Make & Model & Type N/A  
Back up Power YES  
Generator Make & Model & Size GENERAC 105, 87A01948  
Fuel Type NAT GAS Fuel Storage Size N/A  
Comments on Generator Condition GOOD  
Station Security Lock and chain  
Is Station Perimeter Fenced? YES  
Fence / Gate Condition FAIR (Gate Poor)  
Is Station Monitored? YES How? MISSION COMMUNICATIONS

## Pump station data (Cont)

### Pumps

LIBERTY LSG202A

Model #	LSG202A	Volts	208/230	HZ:	60
Amps	15	PH:	1	HP:	2
Serial #	B52-1114NX-090418				

### Generator

Model#	87A013948-5	Serial #	840614	Volts:	120/208
Amps:	52	KVA#	18.7	KV#	15
Hz:	60	Phase	3	RPM:	3600

Motor 51782

### ATS Switch

Generac	105 system				
Voltage:	120/240	Serial#	5338	Model#	87A01948-W
Switch Rating Amp	105	volts	250		

## Notes

2 brand new Liberty Pumps Model: LSG202A installed October 2018

really tough to derags pumps at this site

Gate on fence in poor shape. Able to open when locked if gate is quickly pulled



Grinders

5605000

THERMALLY PROTECTED

**Liberty Pumps®**

MODEL: **LSG202A**

VOLTS: **208/230**

AMPS: **15**

PH: **1**

HP: **2**

HZ: **60**

SER#: **B52-1114NX-090418**



C

US

5610000



PLEASE Submit to Mission Tech Support  
Fax to 770-685-7913 or email to setupforms@123mc.com email

RTUs will not be activated until MISSION receives this form and enters the data in our computers

Installer Name: \_\_\_\_\_ Contact Phone #: \_\_\_\_\_  
 Customer (Acct.) Name: Veolia Water - Taunton, MA  
 Unit Serial Number: 14MIS15092 - MID 14MIS15126 - MID Install Date: \_\_\_\_\_  
 Unit Site Name (What you want site called when we notify you): \_\_\_\_\_

Wet Well Module:  Y  N  Pulse Counting Board:  Y  N  Solar Power:  Y  N

Actual Installation Address (or nearest valid address - needed for mapping on website)  
 Street: 150 Partridge Circle City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 GFS Coordinates Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Indicate How Unit Was Actually Installed. Note Any Field Programming Changes.

Digital Input Number	Input Type (Factory Defaults) Choose Pump Run or Alarm	Is Relay Normally Open or Closed Circle One (Default N/O)	Input Description, 40 Character Max. (What this input is called during notification)
1	(Pump Run)	N/O	PI RUN
2	(Pump Run)	N/O	PI RUN
3	(Pump Run)	-	N/A
4	(Alarm)	N/O	(High Wet Well) HI W.W
5	(Alarm)	N/C	INTRUSION
6	(Alarm)	N/C	Power Etai Fail
7	(Alarm)		
8	(Alarm)		

Alarm Delay: Inputs 4-8 are set for the factor for a 60 sec. debounce time (default). Input contact must be opened or closed for this period before initiation of event. It can be changed through programming.

Analog Channel 1: Description \_\_\_\_\_ Input Type (4-20mA / 0-5V) \_\_\_\_\_  
 Minimum Value \_\_\_\_\_ Maximum Value \_\_\_\_\_ Units (FT, PSI, GPM) \_\_\_\_\_  
 Low Alarm \_\_\_\_\_ Low Alarm Restoral \_\_\_\_\_ High Alarm Restoral \_\_\_\_\_ High Alarm \_\_\_\_\_

Analog Channel 2: Description \_\_\_\_\_ Input Type (4-20mA / 0-5V) \_\_\_\_\_  
 Minimum Value \_\_\_\_\_ Maximum Value \_\_\_\_\_ Units (FT, PSI, GPM) \_\_\_\_\_  
 Low Alarm \_\_\_\_\_ Low Alarm Restoral \_\_\_\_\_ High Alarm Restoral \_\_\_\_\_ High Alarm \_\_\_\_\_

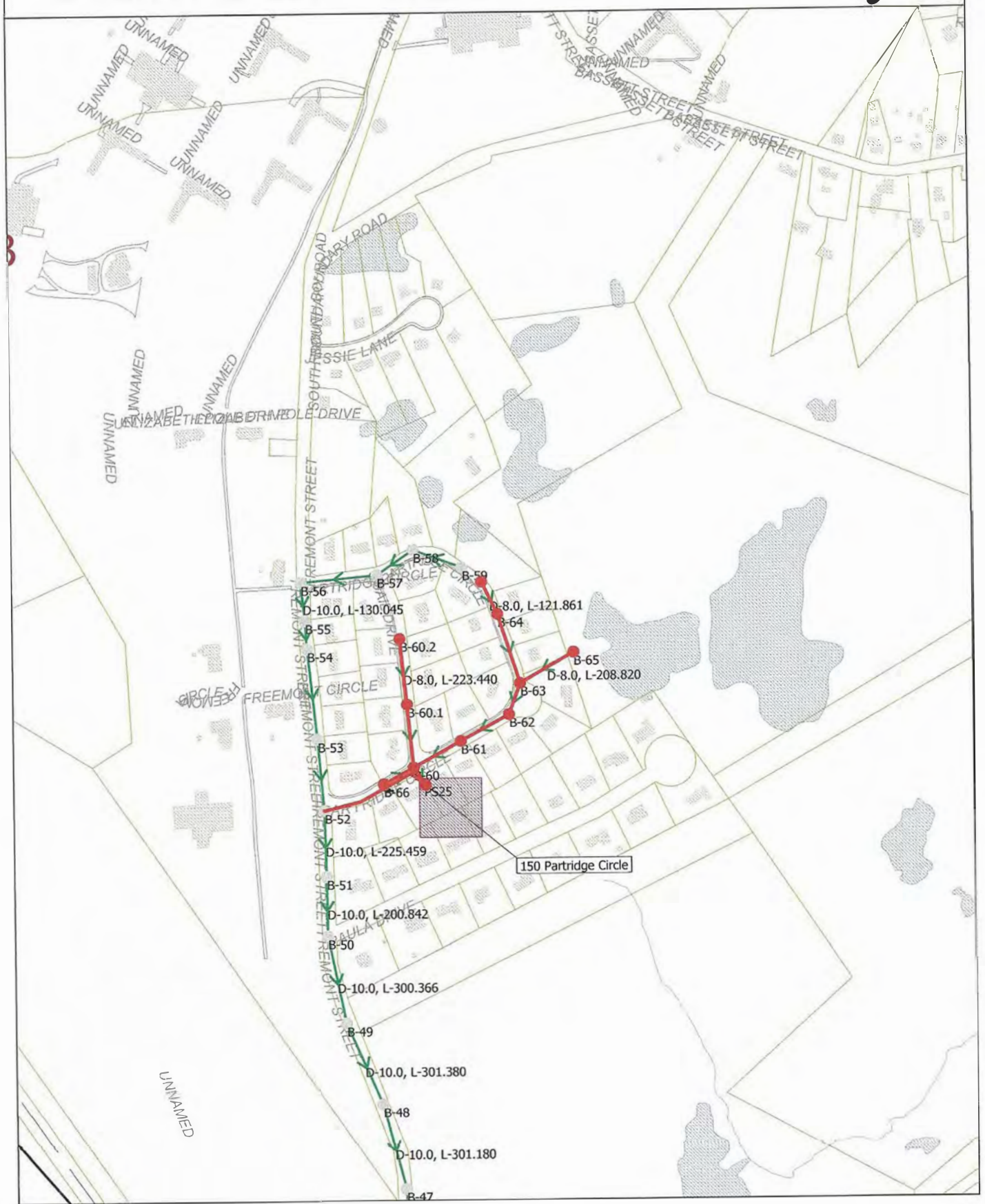
Pulse Setup	Label (e.g. Rainfall, Inflow, Discharge)	Scale rainfall (0.01); flow (10, 100, 1000)	Units (inches, gallons)
Channel 1:		Rainfall: _____ Flow: _____	
Channel 2:		Rainfall: _____ Flow: _____	
Pump 1 GPM		Relay Output 1: _____	
Pump 2 GPM		Relay Output 2: _____	
Pump 3 GPM		Relay Output 3: _____	

Wet Well Diameter (exact dimension) or Surface Area (in square feet) FOR M300 RTU IS ONLY

Installation Notes: \_\_\_\_\_



# Network - Taunton Sanitary





## **Section 6.0 – Supplemental Information**

### **Financial Statements**

**Veolia North America, Inc.**

**2018 – Draft – Financial Statement**

**2017 (with 2016) – Financial Statement**

**2016 (with 2015) – Financial Statement**



Draft—12/31/2019

SEPARATE COMPANY FINANCIAL STATEMENTS

Veolia North America, Inc.

Years Ended December 31, 2018 and 2017

**Unaudited / Draft of Audit In Process**

**PRELIMINARY AND TENTATIVE FOR DISCUSSION ONLY**

Company Confidential - Trade Secret and Proprietary Information - Veolia

Veolia North America, Inc.

Statements of Financial Position  
(In Thousands)

		December 31	
	Note	2018	2017
<b>Assets</b>			
Non-current assets:			
Investments in subsidiaries	3	\$ 947,760	\$ 962,640
Long-term loans due from affiliates	4	1,752,766	1,766,720
Deferred tax assets	9	152,502	152,095
		<u>2,853,028</u>	<u>2,881,455</u>
Current assets:			
Current amounts due from affiliates	5	388,805	304,263
Other receivables		16,846	15,100
Cash and cash equivalents		8,069	4,748
		<u>413,720</u>	<u>324,111</u>
Total assets		<u>\$ 3,266,748</u>	<u>\$ 3,205,566</u>
<b>Equity and liabilities</b>			
Equity:			
Share capital	2	\$ —	\$ —
Share premium		1,637,445	1,632,821
Retained earnings		344,525	266,927
		<u>1,981,970</u>	<u>1,899,748</u>
Non-current liabilities:			
Long-term debt due to affiliates	6	739,221	715,600
		<u>739,221</u>	<u>715,600</u>
Current liabilities:			
Payables due to affiliates	5	541,296	586,201
Accrued liabilities		4,261	4,017
		<u>545,557</u>	<u>590,218</u>
Total liabilities		<u>1,284,778</u>	<u>1,305,818</u>
Equity and liabilities		<u>\$ 3,266,748</u>	<u>\$ 3,205,566</u>

See accompanying notes to separate company financial statements.

PRELIMINARY AND TENTATIVE FOR DISCUSSION ONLY

Veolia North America, Inc.

Statements of Comprehensive Income (Loss)  
(In Thousands)

	Note	December 31	
		2018	2017
Dividend income	7	\$ 189,500	\$ 80,100
Management fees		(83,319)	(75,036)
Other operating income, net		455	120
Income before interest, taxes and other items		<u>106,636</u>	5,184
Net interest income	8	<u>46,727</u>	33,744
Net income before tax		<u>153,363</u>	38,928
Income tax benefit (expense)	9	<u>3,748</u>	(67,600)
Net income (loss)		<u>157,111</u>	(28,672)
Total comprehensive income (loss)		<u>\$ 157,111</u>	<u>\$ (28,672)</u>

*See accompanying notes to separate company financial statements.*

Veolia North America, Inc.

Statements of Changes in Equity  
(In Thousands)

	<b>Number of Shares Outstanding</b>	<b>Share Capital</b>	<b>Share Premium</b>	<b>Retained Earnings</b>	<b>Total Equity</b>
January 1, 2017	1,473.73	\$ —	\$ 1,632,821	\$ 384,299	\$ 2,017,120
Net loss for the period	—	—	—	(28,672)	(28,672)
Dividends paid	—	—	—	(88,700)	(88,700)
December 31, 2017	1,473.73	—	1,632,821	266,927	1,899,748
Net income for the period	—	—	—	<b>157,111</b>	<b>157,111</b>
Dividends paid	—	—	—	<b>(80,900)</b>	<b>(80,900)</b>
Merger of legacy holding subsidiary VENAC	—	—	<b>4,624</b>	<b>1,387</b>	<b>6,011</b>
December 31, 2018	<b>1,473.73</b>	<b>\$ —</b>	<b>\$ 1,637,445</b>	<b>\$ 344,525</b>	<b>\$ 1,981,970</b>

See accompanying notes to separate company financial statements.

**PRELIMINARY AND TENTATIVE FOR DISCUSSION ONLY**



Veolia North America, Inc.

Statements of Cash Flows  
(In Thousands)

		December 31	
	Note	2018	2017
<b>Operating activities</b>			
Net income (loss)		\$ 157,111	\$ (28,672)
Income tax (benefit) expense	9	(3,748)	67,600
Net income before tax		<u>153,363</u>	38,928
Adjustments to reconcile net income before tax to net cash flow from operating activities:			
Net change in other receivables		6,541	3,750
Net change in accrued liabilities		175	(545)
Income taxes paid	9	(4,955)	(3,062)
Income tax sharing payments received from subsidiaries	9, 12	<u>29,416</u>	22,115
Net cash flows from operating activities		<u>184,540</u>	61,186
<b>Investing activities</b>			
Loans issued to affiliates	4, 12	(23,621)	(33,392)
Loan repayments received from affiliates	4, 12	960	149,915
Net change in receivables due from affiliates	5	(83,458)	(131,505)
Net cash (used in) provided by investing activities		<u>(106,119)</u>	(14,982)
<b>Financing activities</b>			
Net change in payables due to affiliates	5	(20,882)	(3,056)
Borrowings from affiliate	6, 12	23,621	27,000
Dividends paid to affiliate	12	(80,900)	(88,700)
Effect of exchange rates on cash and cash equivalents		3,061	(2,946)
Net cash used in financing activities		<u>(75,100)</u>	(67,702)
Net increase in cash and cash equivalents		3,321	617
Cash and cash equivalents at January 1		4,748	4,131
Cash and cash equivalents at December 31		<u>\$ 8,069</u>	<u>\$ 4,748</u>

See accompanying notes to separate company financial statements.

PRELIMINARY AND TENTATIVE FOR DISCUSSION ONLY

# Veolia North America, Inc.

## Notes to Separate Company Financial Statements

*(In Thousands, Unless Otherwise Indicated)*

Years Ended December 31, 2018 and 2017

### **1. Organization and Basis of Presentation**

Veolia North America, Inc. (the Company or VNA) is a wholly owned subsidiary of Veolia Environment, S.A. (VE), the ultimate parent. VE is a global leader in providing environmental services and offers a wide range of solutions for managing water, waste, and energy. VE is publicly traded on the Euronext exchange, and its principal place of business is at 30, rue Madeleine Vionnet, 93300 Aubervilliers, France.

VNA is the legal and financial holding company of VE's principal businesses located in the U.S. In its capacity as a financial holding company, VNA also provides intercompany loans to its subsidiaries in the U.S., as well as other affiliate companies of Veolia in Canada. VNA was incorporated in the state of Delaware, and its registered office is located at The Nemours Building, 1007 Orange Street, Suite 1414, Wilmington, Delaware 19801. The Company's principal place of business is 53 State Street, Boston, Massachusetts 02109.

These separate company financial statements, which have been prepared in accordance with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), represent the financial position, operating activities, and cash flows of the VNA holding company.

In accordance with the limited exemption under IFRS 10, *Consolidated Financial Statements*, VNA is not required to and does not prepare consolidated financial statements because: (i) VNA is a wholly owned subsidiary of VE and VE has been informed about and does not object to VNA not presenting consolidated financial statements; (ii) VNA has no debt or equity instruments which are publicly traded; (iii) VNA has no intention to file these separate company financial statements with a securities commission or other regulatory organization for the purpose of issuing securities or debt to the public; and (iv) VE produces consolidated financial statements that comply with IFRS and are available for public use ([www.veolia.com/en/veolia-group/media/publications](http://www.veolia.com/en/veolia-group/media/publications)). Accordingly, these separate company financial statements, as defined in International Accounting Standards (IAS) 27, *Separate Financial Statements*, are unconsolidated financial statements or financial statements in which investments in subsidiaries are not consolidated in accordance with IFRS, do not purport to represent, and should not be read as, consolidated financial statements, including the assets, liabilities, revenues, expenses, and cash flows of VE's businesses in North America.

# Veolia North America, Inc.

## Notes to Separate Company Financial Statements (continued) *(In Thousands, Unless Otherwise Indicated)*

### **1. Organization and Basis of Presentation (continued)**

In connection with the preparation of these separate company financial statements, the Company evaluated subsequent events through \_\_\_\_\_, 2019, the date these separate company financial statements were approved by management of VNA and VE and, therefore, were available to be issued. See Note 13 for additional details.

### **2. Summary of Significant Accounting Policies**

#### **Significant Accounting Judgments, Estimates, and Assumptions**

The preparation of these separate company financial statements requires management to make judgments, estimates, and assumptions that affect the reported amounts of expenses, assets and liabilities, and the accompanying disclosures, and the disclosure of contingent liabilities. Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

#### **Investments in Subsidiaries**

Investments in direct wholly owned subsidiaries of VNA are carried at cost in these separate company financial statements. Dividends are recognized in the statements of comprehensive income (loss) when declared and authorized.

#### **Loans Issued to Affiliates**

Loans issued by VNA to its subsidiaries and affiliates are carried at amortized cost.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued) (In Thousands, Unless Otherwise Indicated)

#### 2. Summary of Significant Accounting Policies (continued)

##### Impairment of Assets

Annually, the Company performs a review of its investments in subsidiaries and loans due from affiliates to determine whether any indicator of impairment is present, in accordance with IAS 36, *Impairment of Assets*. In assessing whether there is any indication that an investment in subsidiary or loan due from affiliate is impaired, the Company considered external and internal sources of information. External sources of information considered included observable indications that the value of the underlying assets used by the subsidiary or affiliate have declined more than would be expected or significant changes in the market which have an adverse impact of the subsidiary or affiliate. Internal sources of information considered included internal management reporting and the long-term plans of the subsidiary or affiliate, which have also been approved by VE, and whether recent or projected financial performance or management's plans indicate that there may be a potential indicator of impairment. If there is an indication that an investment in subsidiary or loan receivable due from affiliate may be impaired, the Company is then required to make a formal estimate of the recoverable amount. The recoverable amount is defined as the higher of fair value less costs of disposal (FVLCD) and value in use (VIU). FVLCD is the amount for which the asset could be sold, having deducted costs of disposal (incrementally incurred direct selling costs). VIU is the present value of the cash flows expected from the future use and eventual sale of the asset at the end of its useful life. If the carrying amount exceeds the recoverable amount, an impairment loss is recognized in net income or loss for the period.

At December 31, 2018 and 2017, the Company performed a review and determined there were no indicators of impairment present relating to its investments in subsidiaries and loan receivables due from affiliates.

##### Current Amounts Due to and From Affiliates

The Company participates in a global cash management system which includes all of its subsidiaries (direct and indirect). Daily, the Company funds cash required by its operating subsidiaries necessary to satisfy payment of liabilities, and the Company sweeps excess cash at the operating subsidiaries.



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued) *(In Thousands, Unless Otherwise Indicated)*

#### **2. Summary of Significant Accounting Policies (continued)**

In the statement of financial position:

- Net excess cash sweeps from subsidiary are shown as payables due to affiliates and classified as current liabilities.
- Net short-term advances issued to a subsidiary are shown as current due from affiliates and classified as current assets.

The Company has a similar arrangement with VE, the ultimate parent.

#### **Cash and Cash Equivalents**

Cash and short-term deposits in the statements of financial position comprise cash at banks, which are subject to an insignificant risk of changes in value.

#### **Borrowings Due to Affiliates**

Borrowings due to affiliates are initially recognized at fair value and, in the case of loans and borrowings, include directly attributable transaction costs. After initial recognition, interest bearing loans and borrowings are subsequently measured at amortized cost using the effective interest rate method. Gains and losses are recognized in the statements of comprehensive income (loss) when the liabilities are derecognized.

A financial liability is derecognized when the obligation under the liability is discharged, canceled or expired. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognized in the net income or loss.

Borrowings are classified as noncurrent liabilities when the maturity date is at least 12 months after the balance sheet date. Borrowings due within the next year are considered current liabilities unless the Company has an unconditional right to defer settlement of the liability for at least 12 months after the reporting date.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued) (In Thousands, Unless Otherwise Indicated)

## 2. Summary of Significant Accounting Policies (continued)

### Offsetting of Financial Instruments

Financial assets and financial liabilities are offset and the net amount reported in the statements of financial position if, and only if, there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, or to realize the assets and settle the liabilities simultaneously.

### Foreign Currency-Denominated Transactions

Liabilities, receivables, and cash balances denominated in currencies other than the U.S. dollar (USD) are recorded in the balance sheet at their U.S. dollar equivalent determined using year-end exchange rates. Gains and losses resulting from the translation of foreign currency denominated liabilities and receivables measured using year-end exchange rates are recorded in “Other income (expense)” on the accompanying statements of comprehensive income (loss).

### Current versus Noncurrent Classification

The Company presents assets and liabilities in the statements of financial position based on its current or noncurrent classification. An asset is current when it is:

- Expected to be realized or intended to be sold or consumed in the normal operating cycle
- Expected to be realized within 12 months after the reporting period
- Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least 12 months after the reporting period.

All other assets are classified as noncurrent.

A liability is current when:

- It is expected to be settled in the normal operating cycle
- It is held primarily for the purpose of trading
- It is due to be settled within 12 months after the reporting period
- There is no unconditional right to defer the settlement of the liability for at least 12 months after the reporting period.

The Company classifies all other liabilities as noncurrent. Deferred tax assets and liabilities are classified, on a net basis, as noncurrent assets or liabilities.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

*(In Thousands, Unless Otherwise Indicated)*

#### **2. Summary of Significant Accounting Policies (continued)**

##### **Management Fee**

The Company is charged a management fee for various services provided by a wholly owned subsidiary, which manages shared services centers (SSC) in the United States. The SSC provides various services to the Company and its wholly owned operating subsidiaries in North America, including financing, tax, information technology, legal, and other administrative services. The Company is charged by the SSC for an allocated portion of the total direct costs incurred by the SSC in connection with providing these services.

The Company is also charged a management fee by VE that is associated with executive and other administrative management services that are provided by VE, as well as a branding and royalty fee. The branding and royalty charge represents an allocated portion of costs incurred by VE to provide various marketing services and costs linked to the Veolia brand.

In the opinion of management, these allocations and charges have been made on a reasonable basis; however, they are not necessarily indicative of the level of expenses which might have been incurred had the Company been operating as a separate stand-alone entity.

##### **Income Taxes**

VNA files as the parent corporation of the U.S. consolidated tax group, which includes VNA and all of its wholly owned subsidiaries. VNA is obligated to pay all federal taxes when due on behalf of the consolidated group. In addition, VNA is also responsible to pay state taxes due where VNA files tax returns on a combined, consolidated, or unitary basis. Income taxes payable due to taxing authorities are included within accrued liabilities on the accompanying statements of financial position.

Within the framework of a group tax sharing agreement, VNA receives tax sharing payments from its wholly owned subsidiaries. The subsidiaries comprise tax sharing groups that remit tax to VNA based on calculated tax as if each tax sharing group was filing on a stand-alone basis.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued) *(In Thousands, Unless Otherwise Indicated)*

#### **2. Summary of Significant Accounting Policies (continued)**

For purposes of these separate company financial statements, income tax expense is composed of current and deferred components determined based on the activities and tax attributes of VNA on a stand-alone basis, applying the enacted regulations under the U.S. Internal Revenue Code as of the reporting date.

Deferred tax assets are recognized for unused tax losses and tax credits of VNA to the extent that these amounts will be utilized and realized. VNA recovers the value of tax loss carryforwards through payments from subsidiaries that benefit from the utilization of the tax loss carryforwards. As such, the value of VNA's deferred tax assets on a separate company basis is dependent upon the tax attributes of its direct and indirect subsidiaries. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and the level of future taxable profits, together with future tax planning strategies. The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

#### **Share Capital**

At December 31, 2018 and 2017, the Company had 16,000 shares authorized for issuance, including 15,000 shares of common stock and 1,000 shares of preferred stock at par \$0.01 per share.

#### **Foreign Currency Risk**

Foreign currency risk is the risk that the future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The Company's exposure to the risk of changes in foreign exchange rates relates primarily to intercompany loans denominated in currencies other than the U.S. dollar.

#### **Market Risk**

Market risk is the risk that the future cash flows of a financial instrument will fluctuate because of changes in market prices. The Company's market risk is related to the interest rate risk, as interest on the entity's financial instruments depends on the interest rate per annum for the offering of deposits in U.S. dollars in the London Interbank Offered Rate (LIBOR) market for a



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued) (In Thousands, Unless Otherwise Indicated)

#### **2. Summary of Significant Accounting Policies (continued)**

three-month period comparable to the Interest Period (LIBOR 3M) of the financial instrument. Financial instruments affected by market risk include long-term loans received from and issued to affiliates, current amounts due to and from affiliates in the Company's cash pooling activities, and cash and cash equivalents.

#### **Liquidity Risk**

Liquidity risk is defined as the risk that an entity will encounter difficulty in meeting obligations associated with its financial liabilities.

#### **Changes in Accounting Standards**

Effective January 1, 2018, the standards and interpretations disclosed below are applied to these separate company financial statements.

#### **IFRS 9, Financial Instruments**

In July 2014, the IASB issued the final version of IFRS 9, *Financial Instruments*, which replaces IAS 39, *Financial Instruments: Recognition and Measurement*, and all previous versions of IFRS 9. IFRS 9 brings together all three aspects of the accounting for the financial instruments project: classification and measurement; impairment; and hedge accounting. IFRS 9 is effective for annual periods beginning on or after January 1, 2018, with early application permitted. Except for hedge accounting, retrospective application is required, but providing comparative information is not compulsory. For hedge accounting, the requirements are generally applied prospectively, with some limited exceptions. The Company has evaluated the impact of adopting IFRS 9 on these separate company financial statements, including: (a) the requirement to evaluate contractual cash flow characteristics of financial instruments in order to determine appropriate classification and measurement; and (b) whether the impairment review performed relative to outstanding loans will need to be supported by more detailed analyses, which considers reasonable and supportable information, including forward-looking elements, to determine potential indicators of impairment. The Company has completed this review and has not identified any evidence of impairment.

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
(In Thousands, Unless Otherwise Indicated)

**2. Summary of Significant Accounting Policies (continued)**

Borrowing due from affiliates are initially recognized at fair value and, in the case of loans and borrowings, include directly attributable transaction costs. All loans are clearly documented and priced according to published terms and conditions provided by the parent company. These terms and conditions are priced at market rates. After initial recognition, interest bearing loans and borrowings are subsequently measured at amortized cost using the effective interest rate method.

**IFRIC 23, Financial Instruments**

In June 2017, the IASB issued IFRIC Interpretation 23, *Uncertainty over Income Tax Treatments* (IFRIC 23), which clarifies application of recognition and measurement requirements of IAS 12, *Income Taxes*, when there is uncertainty over income tax treatments. This Interpretation addresses whether an entity considers uncertain tax treatments separately, the assumptions an entity makes about the examination of tax treatments by taxation authorities, how an entity determines taxable profit (tax loss), tax bases, unused tax losses, unused tax credits and tax rates, and how an entity considers changes in facts and circumstances.

On initial application of the amendment, entities are not required to provide comparative information for preceding periods. These amendments are effective for annual periods beginning on or after January 1, 2018 with early application permitted. Application of the amendments may result in additional disclosures to be provided in these separate company financial statements.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued) (In Thousands, Unless Otherwise Indicated)

#### 3. Investments in Subsidiaries

Investments in subsidiaries are represented by the following holding companies for various Veolia businesses in the United States:

Company Name	Country of Incorporation	Principal Activity	Cost		Ownership Interest Held	
			December 31 2018	December 31 2017	December 31 2018	December 31 2017
WASCO, LLC	United States	Design, build and operator of water treatment facilities	\$ 388,752	\$ 388,752	100%	100%
Veolia Energy North America Holdings, Inc. (VENAH)	United States	District heating and cooling; energy consulting services	200,000	200,000	100%	100%
Veolia Environmental Services North America LLC (VESNA)	United States	Hazardous waste disposal and industrial cleaning	262,008	262,008	100%	100%
Veolia North America, LLC	United States	Shared services center	–	–	100%	100%
Veolia North America Regeneration services, LLC (RGS)	United States	Sulfur acid treatment and regeneration services	97,000	97,000	100%	100%
Veolia Nuclear Solutions, Inc. (Kurion)	United States	Nuclear waste treatment services	–	–	100%	100%
Aqua Alliance, Inc.	United States	Holding company for certain non-operating Water legacy entities	–	–	100%	100%
Veolia Environment North America Company (VENAC)	United States	Legacy activity holding company	–	14,880	N/A	100%
Total			<u>\$ 947,760</u>	<u>\$ 962,640</u>		

VENAC, an inactive legacy holding company with no operating activities, merged into VNA Inc. as of December 6, 2018. The merger had no impact on the net results of VNA Inc.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued) (In Thousands, Unless Otherwise Indicated)

#### 4. Long-Term Loans Due From Affiliates

The Company has a portfolio of long-term loans due from affiliates as follows:

Borrower	Currency	Reference Rate for Variable Interest	Spread	Issuance	Maturity	December 31	
				Date	Date	2018	2017
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	2.50%	12-12-2007	31-12-2027	\$ 605,000	\$ 605,000
Veolia Nuclear Solutions, Inc.	USD	LIBOR 3M	3.75%	01-04-2016	01-04-2026	363,600	363,600
Veolia North America Regeneration Services, LLC	USD	LIBOR 3M	2.50%	29-07-2016	29-07-2026	228,000	228,000
WASCO, LLC	USD	LIBOR 3M	2.50%	13-12-2012	13-12-2022	85,000	85,000
WASCO, LLC	USD	LIBOR 3M	3.00%	13-12-2012	13-12-2027	85,000	85,000
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	2.50%	01-10-2010	30-09-2020	74,000	74,000
Veolia Water Technologies, Inc.	USD	LIBOR 3M	1.00%	01-01-2010	31-12-2020	50,000	50,000
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	2.50%	31-01-2014	31-01-2024	41,300	41,300
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	3.75%	09-01-2017	09-01-2027	27,000	27,000
Veolia Environmental Services North America, LLC	USD	LIBOR 3M	3.75%	01-11-2016	31-10-2026	36,593	36,593
Veolia ES Canada, Inc.	CAD	CDOR 3M	2.50%	16-07-2013	15-07-2023	31,549	34,291
Veolia Water Technologies, Inc.	USD	LIBOR 3M	1.00%	29-12-2008	27-03-2019	–	30,500
Veolia Energy Cambridge Holding, Inc.	USD	LIBOR 3M	3.75%	31-03-2015	31-03-2025	29,700	29,700
Veolia Water Technologies, Inc.	USD	LIBOR 3M	3.50%	10-01-2013	09-01-2023	23,900	23,900
Veolia ES Canada Industrial Services, Inc.	CAD	CDOR 3M	2.50%	27-04-2012	27-04-2022	22,011	23,924
Veolia Energy Atlantic Station, LLC	USD	Fixed interest rate	5.13%	01-09-2015	01-03-2026	9,690	10,650
Veolia Energy Canada, Inc.	CAD	CDOR 3M	3.75%	13-07-2015	13-07-2025	16,802	18,262
Veolia Water North America Operating Services, LLC	USD	LIBOR 3M	3.75%	13-07-2018	12-07-2028	23,621	–
Total						<u>\$1,752,766</u>	<u>\$1,766,720</u>



Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
*(In Thousands, Unless Otherwise Indicated)*

**4. Long-Term Loans Due From Affiliates (continued)**

All long-term loans due from affiliates are also charged a loan utilization fee of 0.35% in 2018, which is charged in addition to the interest rates referenced above.

For purposes of the loan summary disclosed above, the referenced rates are defined as follows:

**USD LIBOR 3M** is defined as:

- (i). The interest rate per annum for the offering of deposits in U.S. dollars in the LIBOR market for a three-month period comparable to the Interest Period, as shown on the Reuters screen (or such other page or pages as may replace that service from time-to-time) at 11:00 (London time) on the Quotation Day (the **LIBOR USD Screen Rate**),
- (ii). If the LIBOR Screen Rate is not available, the arithmetic mean (rounded upward to four decimal places) as calculated by the Lender of the interest rates supplied to the Lender by the Reference Banks for the offering of deposits in the currency of the Loan to leading banks in the LIBOR market for a period comparable to the relevant Interest Period and for an amount comparable to the Loan.

**CDOR 3M** is defined as:

- (i). The Canadian dollar (CAD) offered rate for the offering of deposits in CAD in the Canadian interbank market for a three-month period comparable to the Interest Period displayed (before any correction, recalculation, or republication by the administrator) on the “CDOR” page of the Thomson Reuters screen (or any replacement Thomson Reuters page, which displays that rate) at 11:00 (the **CDOR Screen Rate**),
- (ii). If the CDOR Screen Rate is not available, the arithmetic mean of the rates (rounded upward to four decimal places) as calculated by the Lender of the interest rates supplied to the Lender by the Reference Banks for the offering of deposits in CAD to leading banks in the interbank market on the Quotation Day for a period comparable to the Interest Period and for an amount comparable to the Loan.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued) *(In Thousands, Unless Otherwise Indicated)*

#### **4. Long-Term Loans Due From Affiliates (continued)**

Loans denominated in USD are issued to direct and indirect wholly owned subsidiaries of the Company in the U.S. Loans denominated in CAD are issued to affiliates of the Company located in Canada.

On December 31, 2018, the Company extended the maturity on one loan agreement:

- \$30.5 million loan due December 31, 2018 – maturity extended to March 27, 2019.

Accordingly, this loan is classified as a current asset.

#### **Acquisition of American Water Contracts.**

In July 2018, the Company established a 10 year, long-term loan agreement with Veolia Environment Finance for borrowings of up to \$26.0 million to finance the acquisition of certain American Water contracts by its indirect subsidiary Veolia Water North America Operating Services, LLC (VWNAOS). In turn, VNA established a 10 year, long-term loan agreement for the same amount and terms with VWNAOS. As of December 31, 2018, utilization of this loan, following draws in July and August of 2018, amount to \$23.6 million.

#### **5. Current Amounts Due to Subsidiaries and Current Amounts Due From Affiliates**

The Company participates in the Veolia cash pooling system. As a result, the Company sweeps excess cash from (or provides cash funding to) its operating subsidiaries on a daily basis. In addition, VE periodically sweeps excess cash from (or provides cash funding to) the Company.

As a result, the Company has current liabilities for amounts due to certain subsidiaries relating to cumulative net cash swept. In addition, the Company also has current assets for amounts due from affiliates and/or relating to the Company's excess cash, which is swept by VE.

Depending on the current balance, there may be interest expense and interest income recorded by the Company relating to net cash swept from subsidiaries and the net amounts of cash remitted to VE, respectively. During 2018, interest was charged based on amounts outstanding at the Federal Funds Rate plus 0.5% plus a 0.35% utilization fee for current account borrowings. Affiliate deposits with the Company are paid interest at the Federal Funds Rate plus 0.2% in 2018. Effective January 1, 2019, the utilization fee has been amended to 0.25% for current account borrowings.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued) (In Thousands, Unless Otherwise Indicated)

#### 6. Long-Term Loans Due to Affiliates

In July 2016, the Company received proceeds of \$325.0 million from a long-term loan with VE Finance (a wholly-owned subsidiary of VE), in connection with the acquisition of the sulfuric acid regenerations services business. The long-term loan matures in July 2026 and bears interest on the outstanding principal at a per annum rate of 2.5% plus LIBOR 3M plus a 0.35% utilization fee.

In December 2016, the Company refinanced \$363.6 million of short-term borrowings due to VE with a \$363.6 million long-term loan. This long-term financing is associated with the Company's acquisition of Kurion, Inc. The long-term loan matures in December 2026 and bears interest on the outstanding principal at a per annum rate of 3.75% plus LIBOR 3M plus a 0.35% utilization fee.

In January 2017, the Company received proceeds of \$27.0 million from a long-term loan with VE Finance (a wholly-owned subsidiary of VE), in connection with the acquisition of Enovity, Inc. The long-term loan matures in January 2027 and bears interest on the outstanding principal at a per annum rate of 3.75% plus LIBOR 3M plus a 0.35% utilization fee.

In July 2018 and August 2018, the Company received proceeds of \$23.6 million from a long-term loan with VE Finance (a wholly owned subsidiary of VE), in connection with the acquisition of American Water contract (see Note 4). The long-term loan matures in July 2028 and bears interest on the outstanding principal at a per annum rate of 3.75% plus LIBOR 3M plus a 0.35% utilization fee.

#### 7. Dividend Income

For the years ended December 31, 2018 and 2017, the components of dividend income received from the Company's operating subsidiaries were as follows:

Subsidiary	Division	2018	2017
WASCO	Water	\$ 49,500	\$ 55,600
VESNA	Environmental Services	17,700	10,700
RGS	Financial Group	8,700	900
VENAH	Energy	113,600	12,900
Total		<u>\$ 189,500</u>	<u>\$ 80,100</u>

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
*(In Thousands, Unless Otherwise Indicated)*

**8. Net Interest Income**

For the years ended December 31, 2018 and 2017, the following amounts of interest income and interest expense were recorded on long-term loans due from (to) affiliates and on outstanding current amounts due from (to) affiliates:

	<u>2018</u>	<u>2017</u>
Interest income on long-term loans due from affiliates	\$ 95,265	\$ 73,467
Interest income on current amounts due from affiliates	6,889	2,601
	<u>102,154</u>	<u>76,068</u>
Interest expense on long-term loans due to affiliates	(41,695)	(33,834)
Interest expense on current amounts due to affiliates	(13,732)	(8,490)
	<u>(55,427)</u>	<u>(42,324)</u>
Net interest income	<u>\$ 46,727</u>	<u>\$ 33,744</u>

**9. Income Taxes**

VNA files as the parent corporation of the U.S. consolidated tax group, which includes VNA and all of its wholly owned subsidiaries. VNA is obligated to pay all federal taxes when due on behalf of the consolidated group. In addition, VNA is also responsible to pay state taxes due where VNA files tax returns on a combined, consolidated, or unitary basis.

Within the framework of a group tax sharing agreement, VNA receives tax sharing payments from its wholly owned subsidiaries. The subsidiaries comprise tax sharing groups that remit tax to VNA based on calculated tax as if each tax sharing group was filing on a stand-alone basis.

For the years ended December 31, 2018 and 2017, the current and deferred components of the income tax benefit (expense) recorded were as follows:

	<u>2018</u>	<u>2017</u>
Current income tax benefit (expense)	\$ 3,341	\$ 35,105
Deferred income tax (expense)	407	(102,705)
Total tax benefit (expense)	<u>\$ 3,748</u>	<u>\$ (67,600)</u>



Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
*(In Thousands, Unless Otherwise Indicated)*

**9. Income Taxes (continued)**

For the years ended December 31, 2018 and 2017, the reconciliations of the federal statutory tax rate and the effective income tax rate for each year are as follows:

	<u>2018</u>	<u>2017</u>
Net income before tax	\$ 153,363	\$ 38,928
Income tax benefit (expense)	3,748	(67,600)
Effective tax rate	<u>(2.4%)</u>	173.7%
Federal statutory tax rate	21.0%	35.0%
Non-taxable dividend income	(25.9)	(71.9)
State and foreign taxes	2.2	12.7
Derecognition of deferred tax assets	7.2	–
Adjustment to prior period deferred taxes	(14.5)	–
Base erosion anti-abuse tax	2.8	–
Rate Change	–	203.3
Other	4.8	(5.4)
Effective tax rate	<u>(2.4%)</u>	173.7%

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
*(In Thousands, Unless Otherwise Indicated)*

**9. Income Taxes (continued)**

**Tax Reform**

On December 22, 2017, President Trump signed into law the Tax Cuts and Jobs Act (TCJA). The legislation significantly changes U.S. tax law by, among other things, lowering the U.S. corporate income tax rate from 35% to 21%, imposing significant additional limitations on the deductibility of interest, creating the base erosion minimum tax and anti-deferral provisions regarding certain foreign income, allowing for the immediate expensing of qualified capital expenditures, implementing a modified territorial tax system, and imposing a transition tax on deemed repatriated earnings of foreign subsidiaries. The Company recorded a reasonable estimate of its net tax expense of \$79,135, which includes the unfavorable impact from the one-time re-measurement of the deferred tax assets due to the U.S. statutory income tax rate change and subsequent decrease in value of the Company's net deferred tax assets.

As of December 31, 2018, the Company does not expect any material impacts to the Company's stand-alone financial statements from other aspects of the TCJA for the year ended December 31, 2019. However, due to the complexity of the new tax legislation, the Company is continuing to evaluate the TCJA and the application of IAS 12. Therefore, the recorded tax effects in the year ended December 31, 2018, are reasonable estimates that will be adjusted and disclosed, as necessary, in future reporting periods as new, more reliable information becomes available. The new information that could cause the Company to adjust the reasonable estimate in future periods is additional information and guidance provided by the Internal Revenue Service (IRS), the U.S. Treasury Department, and the IASB.

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
*(In Thousands, Unless Otherwise Indicated)*

**9. Income Taxes (continued)**

**Deferred Income Taxes**

Deferred income taxes are generally recognized for differences between book and tax, or for other tax attributes, such as net operating and capital losses, which may be carried forward and utilized in future periods.

At each period-end, the Company reviews the recoverable amount of deferred tax assets arising from deductible timing difference and from tax attributes which may be carried forward. Deferred tax assets relating to deductible timing differences and from tax attributes are not recognized, or may need to be reduced when required by the specific facts and circumstances, when:

- a) The forecast period and uncertainties regarding the economic environment no longer support realization
  - b) The utilization of tax attributes which may be carried forward becomes significantly uncertain
  - c) The forecast utilization period exceeds the carry forward period authorized by tax legislation
- or
- d) Future taxable net income is uncertain due to other risks

Deferred income taxes are adjusted for the effects of changes in prevailing tax laws and rates at year-end. Deferred income taxes are not discounted.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued) (In Thousands, Unless Otherwise Indicated)

#### 9. Income Taxes (continued)

At December 31, 2018 and 2017, the components of deferred tax assets were as follows:

	<u>2018</u>	<u>2017</u>
Tax losses carried forward for U.S. federal tax purposes	\$ 138,127	\$ 125,023
Tax losses carried forward for state tax purposes	13,253	26,204
Tax credits carried forward	—	—
Other Liabilities	1,122	868
Total	<u>\$ 152,502</u>	<u>\$ 152,095</u>

The Company's tax losses carried forward for U.S. federal tax purposes begin to expire in 2026. The Company's tax losses carried forward in certain state jurisdictions begin to expire in years 2020, 2021, 2022, and 2026. The tax credits may be carried forward and utilized indefinitely.

#### 10. Commitments and Contingencies

##### Legal Proceedings

From time to time and in the normal course of business, the Company may be involved in various litigation, as described below. Management has evaluated the litigation below and concluded that a loss is not probable or estimable.

##### United States – Water – Flint

In April 2014, the emergency manager (Emergency Manager) in charge of the City of Flint, Michigan, ordered that it switch its water supply source (previously provided from Detroit) and begin treating Flint River water for distribution to its residents. Soon after, Flint residents began to complain about the water's odor, taste, and appearance. Between August 2014 and December 2014, Flint experienced a number of water quality issues resulting in violations of National Primary Drinking Water Regulations, including Total Trihalomethanes (TTHM, which are disinfection byproducts) maximum contaminant level violations. In February 2015, Flint hired Veolia Water North America Operating Services, LLC (VWNAOS) for an analysis related to residual effects of the chlorination process (TTHM), discoloration, and taste and odor issues. The scope of this approximately four-week analysis did not include lead and copper tests.



Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

*(In Thousands, Unless Otherwise Indicated)*

**10. Commitments and Contingencies (continued)**

On February 18, 2015, VWNAOS issued an interim report, which included a statement that the drinking water was “safe” in that it complied “with state and federal standards and required testing.” During a public meeting that was organized by the Flint City Council Public Works Committee in relation to VWNAOS’s interim report, VWNAOS employees communicated to the public information from the report. The City had previously informed VWNAOS that the City, not VWNAOS, would be conducting lead testing.

On March 12, 2015, VWNAOS delivered its final report to Flint, which was then made available to the public. In its final report, VWNAOS included a broad set of recommendations to address TTHM compliance and improve water quality related to odor and discoloration. It would appear that many of these recommendations were ignored by the local authorities.

On June 24, 2015, the U.S. Environmental Protection Agency issued a memorandum summarizing the available information regarding activities conducted by the City of Flint and several governmental agencies in response to high-lead levels in City drinking water reported by a Flint resident.

On October 21, 2015, the office of the Governor of the State of Michigan commissioned the Flint Water Advisory Task Force, a consulting group made up of experts in a variety of disciplines, to conduct an independent review of the Flint water crisis, including lead contamination.

On March 21, 2016, the Flint Water Advisory Task Force issued its final report, drafted after interviewing numerous individuals and reviewing many documents. The Task Force reported in its conclusion that responsibility for the Flint water crisis rested largely with several governmental agencies and the City of Flint. Notably, the report highlighted that the Michigan Department of Environmental Quality and the City of Flint did not require and implement corrosion control at the time of the change of water supply source, contrary to what was required under the U.S. Environmental Protection Agency’s Lead & Copper Rule to avoid contamination of drinking water with those metals. A total of 15 current or former state and local officials and employees have been charged with criminal conduct for their parts in causing or exacerbating the Flint water crisis.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

*(In Thousands, Unless Otherwise Indicated)*

#### **10. Commitments and Contingencies (continued)**

Since February 2016, numerous individual complaints and putative class actions have been filed in state and federal courts in Michigan by Flint residents and companies against a number of defendants, including the State of Michigan, the Michigan Department of Environmental Quality, VWNAOS, Veolia North America, Inc. (VNA Inc.), and Veolia North America, LLC (VNA LLC). Flint residents allege injury and damages by exposure to toxins, including lead, contained in the Flint municipal water supply and have levied accusations of professional negligence and fraud against VWNAOS, VNA Inc., and VNA LLC. One or more of VWNAOS, VNA Inc., and VNA LLC have been named in about a dozen putative class actions and in many hundreds of individual cases. To date, none of the courts in which putative class actions have been filed has ruled on whether or not the case may properly proceed as a class action.

On June 22, 2016, the State of Michigan's Attorney General filed a civil action against several defendants, including VWNAOS, VNA Inc., and VNA LLC, for their alleged role in the Flint water crisis. The Attorney General subsequently dismissed that initial action and filed a new civil action on August 16, 2016. On May 1, 2019, the Attorney General filed an amended civil action. Among other allegations, the Attorney General refers to the interim report delivered by VWNAOS. The Attorney General alleges that the acts and omissions of VWNAOS, VNA Inc. and VNA LLC constituted negligence, professional negligence, public nuisance, unjust enrichment, and fraud. VWNAOS, VNA Inc. and VNA LLC will be moving to dismiss all of these claims.

VWNAOS, VNA Inc., and VNA LLC strongly contest the merits of all these legal proceedings. No amounts have been recorded relating to these matters based on current information available and management's evaluation that a contingent loss is neither probable, nor more likely than not, and estimable.

These lawsuits have been reported to the insurers, who have reserved their rights.

#### **U.S. Tax Audits and Worthless Stock Deduction**

In the normal course of business, the Company is subject to regular tax audits. The tax authorities have carried out various tax audits in respect of both the U.S. consolidated tax group and individual entities.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

*(In Thousands, Unless Otherwise Indicated)*

#### **10. Commitments and Contingencies (continued)**

As a result of an internal reorganization in 2006, VNA sought a tax deduction pursuant to the “Worthless Stock Deduction” (WSD) provisions under U.S. tax law. Related tax losses totaled \$4.5 billion (tax base) as of December 31, 2006. Following a long tax audit, the IRS issued a revenue agent’s report on November 6, 2018, rejecting the Worthless Stock Deduction and seeking penalties. VNA filed a detailed protest on December 21, 2018, in which it refuted the merits of the IRS’s arguments.

The IRS informed Veolia on April 2, 2019 that it will not continue its challenge of the Worthless Stock Deduction, and has provided a revised revenue agent’s report reflecting that decision on April 30, 2019. On May 2, 2019, Veolia signed the revised revenue agent’s report to close out the 2004 to 2006 IRS exam cycle. No adjustments related to the resolution of the 2004 to 2006 IRS exam have been recorded to the statements of financial position or comprehensive income (loss). Because the separate company financial statements are derived from the financial statements and accounting records of VE and this event occurred subsequent to the issuance of the VE group financial statements, no adjustment is recorded on the 2018 statement of financial position or the statement of comprehensive income or changes in equity for the year then ended.

Furthermore, three IRS examinations are ongoing in respect of the VNA consolidated tax returns filed for years 2007 and 2008, 2009 to 2011, as well as 2012 and 2013. These IRS examinations are ongoing, and no revised assessments or proposed adjustments have been received to date.

#### **Off-Balance Sheet Commitments**

Commitments given by the Company total approximately \$102.0 million as of December 31, 2018, and consist of performance or financial guarantees given on behalf of its subsidiaries as follows:

- a) Standby letter of credit provided as collateral for its general liability, workers compensation, and other insurance programs for its subsidiaries in the U.S.
- b) Company performance guarantees provided on behalf of one of its owned subsidiaries for the operations and maintenance services on contracts
- c) Other standby letters of credit on behalf of its owned subsidiaries

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
*(In Thousands, Unless Otherwise Indicated)*

**11. Financial Liabilities**

The tables below summarize the maturity profile of the Company's financial liabilities at December 31, 2018 and 2017, based on contractual undiscounted payments (including future interest payments).

	<b>On Demand or Less Than 1 Year</b>	<b>1 to 5 Years</b>	<b>Over 5 Years</b>	<b>Total</b>
<b>As of December 31, 2018</b>				
Long-term debt due to affiliates	\$ —	\$ —	\$ 739,221	\$ 739,221
Payables due to affiliates	541,296	—	—	541,296
Accrued liabilities	4,261	—	—	4,261
	<u>\$ 545,557</u>	<u>\$ —</u>	<u>\$ 739,221</u>	<u>\$ 1,284,778</u>

	<b>On Demand or Less Than 1 Year</b>	<b>1 to 5 Years</b>	<b>Over 5 Years</b>	<b>Total</b>
<b>As of December 31, 2017</b>				
Long-term debt due to affiliates	\$ —	\$ —	\$ 715,600	\$ 715,600
Payables due to affiliates	586,201	—	—	586,201
Accrued liabilities	4,017	—	—	4,017
	<u>\$ 590,218</u>	<u>\$ —</u>	<u>\$ 715,600</u>	<u>\$ 1,305,818</u>

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
*(In Thousands, Unless Otherwise Indicated)*

**12. Transactions With Related Parties**

Transactions between related parties may not be effected on the same terms, conditions, and amounts as transactions between unrelated parties. The management considers that VNA Inc. has appropriate policies and procedures in place to identify, account, and properly disclose transactions with related parties.

The nature of the related-party relationships for those related parties with whom the VNA Inc. entered into significant transactions during the years ended December 31, 2018 and 2017, or had significant balances outstanding at December 31, 2018 and 2017, are detailed below.

At December 31, 2018, the outstanding balances with related parties were as follows:

	<u>Subsidiaries</u>	<u>Other Affiliates</u>	<u>Total</u>
Long-term loans receivable due from affiliates	\$ 1,682,404	\$ 70,362	\$ 1,752,766
Current amounts due from affiliates	388,805	–	388,805
Long-term debt due to affiliate	–	(739,221)	(739,221)
Payables due to affiliates	(483,396)	(57,900)	(541,296)

At December 31, 2017, the outstanding balances with related parties were as follows:

	<u>Subsidiaries</u>	<u>Other Affiliates</u>	<u>Total</u>
Long-term loans receivable due from affiliates	\$ 1,690,243	\$ 76,477	\$ 1,766,720
Current amounts due from affiliates	304,263	–	304,263
Long-term debt due to affiliate	–	(715,600)	(715,600)
Payables due to affiliates	(477,736)	(108,465)	(586,201)



Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
*(In Thousands, Unless Otherwise Indicated)*

**12. Transactions With Related Parties (continued)**

For the year ended December 31, 2018, transactions with related parties recognized in the statements of comprehensive income (loss) were as follows:

	<b>Subsidiaries</b>	<b>Other Affiliates</b>	<b>Total</b>
Dividend income	\$ 189,500	\$ —	\$ 189,500
Management fee	(83,319)		(83,319)
Interest income	98,488	3,666	102,154
Interest expense	(9,248)	(46,179)	(55,427)

For the year ended December 31, 2017, transactions with related parties recognized in the statements of comprehensive income (loss) were as follows:

	<b>Subsidiaries</b>	<b>Other Affiliates</b>	<b>Total</b>
Dividend income	\$ 80,100	\$ —	\$ 80,100
Management fee	(75,036)	—	(75,036)
Interest income	72,641	3,427	76,068
Interest expense	(5,916)	(36,408)	(42,324)

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
*(In Thousands, Unless Otherwise Indicated)*

**12. Transactions With Related Parties (continued)**

For the year ended December 31, 2018, cash receipts from and cash payments to related parties were as follows:

	<b>Subsidiaries</b>	<b>Other Affiliates</b>	<b>Total</b>
Dividends received	\$ 189,500	\$ —	\$ 189,500
Dividends paid to VE and affiliates	—	(80,900)	(80,900)
Proceeds from long-term loans due to VE	—	23,621	23,621
Issuance of long-term loans	(23,621)	—	(23,621)
Receipts from long-term loans	960	—	960
Tax sharing receipts from subsidiaries	29,416	—	29,416
<b>Cash pooling</b>			
Total cash swept from subsidiaries	27,412	—	27,412
Total cash remitted to VE	—	47,512	47,512

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)  
*(In Thousands, Unless Otherwise Indicated)*

**12. Transactions With Related Parties (continued)**

For the year ended December 31, 2017, net cash receipts from and cash payments to related parties were as follows:

	<b>Subsidiaries</b>	<b>Other Affiliates</b>	<b>Total</b>
Dividends received	\$ 80,100	\$ –	\$ 80,100
Dividends paid to VE and affiliates	–	(88,700)	(88,700)
Proceeds from long-term loans due to VE	–	27,000	27,000
Issuance of long-term loans	(27,000)	(6,392)	(33,392)
Receipts from long-term loans	149,915	–	149,915
Tax sharing receipts from subsidiaries	22,115	–	22,115
<b>Cash pooling</b>			
Total cash swept from subsidiaries	251,788	–	251,788
Total cash remitted to VE	–	(140,347)	(140,347)

**13. Events After the Reporting Date**

On March 27, 2019, Veolia Water Technologies, Inc. (VWT) repaid its long-term loan in the amount of approximately \$30.5 million at its amended maturity date. In addition, on the same date, VWT repaid \$25.0 million of its \$50.0 million long-term loan maturing on December 31, 2020.

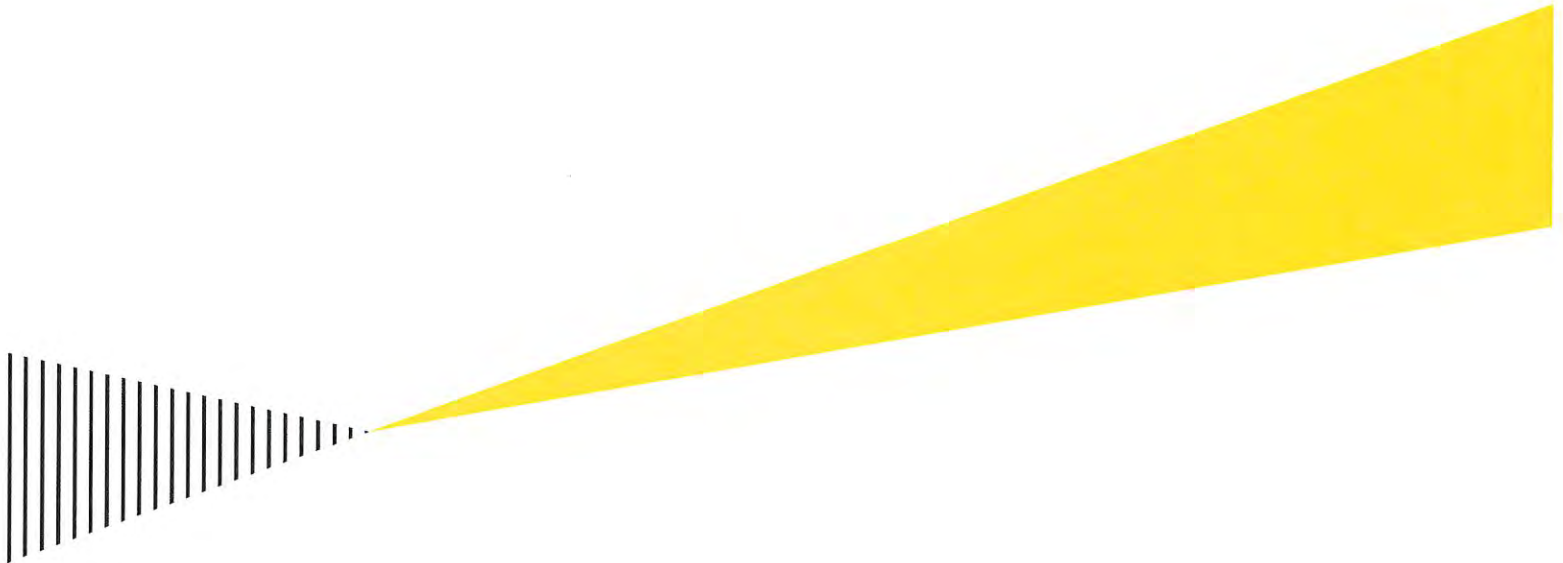
There were no other subsequent events required to be recognized or disclosed in these separate company financial statements.



SEPARATE COMPANY FINANCIAL STATEMENTS

Veolia North America, Inc.  
Years Ended December 31, 2017 and 2016  
With Report of Independent Auditors

Ernst & Young LLP



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working world**

Company Confidential - Trade Secret and Proprietary Information - Veolia



Veolia North America, Inc.

Separate Company Financial Statements

Years Ended December 31, 2017 and 2016

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## Report of Independent Auditors

To the Shareholder  
Veolia North America, Inc.

We have audited the accompanying separate company financial statements of Veolia North America, Inc., which comprise the statements of financial position as of December 31, 2017 and 2016, and the statements of comprehensive income, changes in equity, and cash flows for the years then ended, and the related notes to the separate company financial statements.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards, as issued by the International Accounting Standards Board; this includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### **Auditor's Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.



## Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Veolia North America, Inc. at December 31, 2017 and 2016, and the results of its operations and its cash flows for the years then ended, in conformity with International Financial Reporting Standards, as issued by the International Accounting Standards Board.

*Ernst & Young LLP*

June 28, 2018

Veolia North America, Inc.  
 Statements of Financial Position  
 (in thousands)

		December 31	
	Note	2017	2016
<b>Assets</b>			
Noncurrent assets:			
Investments in subsidiaries	3	\$ 962,640	\$ 962,640
Long-term loans due from affiliates	4	1,766,720	1,878,167
Deferred tax assets	9	152,095	254,800
		2,881,455	3,095,607
Current assets:			
Current amounts due from affiliates	5	293,867	186,607
Other receivables		31,077	18,775
Cash and cash equivalents		4,748	4,131
		329,692	209,513
Total assets		\$ 3,211,147	\$ 3,305,120
<b>Equity and liabilities</b>			
Equity:			
Share capital	2	\$ —	\$ —
Share premium		1,632,821	1,632,821
Retained earnings		266,927	384,299
		1,899,748	2,017,120
Noncurrent liabilities:			
Long-term debt due to affiliates	6	715,600	688,600
		715,600	688,600
Current liabilities:			
Payables due to affiliates	5	591,782	594,838
Accrued liabilities		4,017	4,562
		595,799	599,400
Total liabilities		1,311,399	1,288,000
Equity and liabilities		\$ 3,211,147	\$ 3,305,120

*See accompanying notes to separate company financial statements.*



Veolia North America, Inc.

Statements of Comprehensive Income

(in thousands)

		Year Ended December 31	
	Note	2017	2016
Dividend income	7	\$ 80,100	\$ 131,520
Management fees		(75,036)	(71,208)
Other operating income (expenses)		120	(7,163)
Income before interest, taxes, and other items		<u>5,184</u>	<u>53,149</u>
Net interest income	8	<u>33,744</u>	<u>40,580</u>
Profit before tax		<u>38,928</u>	<u>93,729</u>
Income tax (expense) benefit	9	<u>(67,600)</u>	<u>25,452</u>
(Loss) profit for the year		<u>(28,672)</u>	<u>119,181</u>
Total comprehensive (loss) income		<u>\$ (28,672)</u>	<u>\$ 119,181</u>

*See accompanying notes to separate company financial statements.*



Veolia North America, Inc.

Statements of Changes in Equity

(in thousands, except share amounts)

	<b>Number of Shares Outstanding</b>	<b>Share Capital</b>	<b>Share Premium</b>	<b>Retained Earnings</b>	<b>Total Equity</b>
January 1, 2016	1,473.73	\$ —	\$ 1,632,821	\$ 396,638	\$ 2,029,459
Profit for the year	—	—	—	119,181	119,181
Dividends paid	—	—	—	(131,520)	(131,520)
December 31, 2016	1,473.73	—	1,632,821	384,299	2,017,120
Profit for the year	—	—	—	<b>(28,672)</b>	<b>(28,672)</b>
Dividends paid	—	—	—	<b>(88,700)</b>	<b>(88,700)</b>
December 31, 2017	<b>1,473.73</b>	<b>\$ —</b>	<b>\$ 1,632,821</b>	<b>\$ 266,927</b>	<b>\$ 1,899,748</b>

See accompanying notes to separate company financial statements.

Veolia North America, Inc.

Statements of Cash Flows

(in thousands)

		Year Ended December 31	
	Note	2017	2016
<b>Operating activities</b>			
(Loss) profit for the year		\$ (28,672)	\$ 119,181
Income tax expense (benefit)	9	67,600	(25,452)
Profit before tax		38,928	93,729
Adjustments to reconcile profit before tax to net cash flow from operating activities:			
Net change in other receivables		804	12,782
Net change in other payables		(545)	(12,556)
Income taxes paid	9	(3,062)	(5,856)
Income tax sharing payments received from subsidiaries	9, 12	22,115	28,972
Net cash flows from operating activities		58,240	117,071
<b>Investing activities</b>			
Investment in subsidiary	3	—	(97,000)
Loans issued to affiliates	4, 12	(33,392)	(651,698)
Loan repayments received from affiliates	4, 12	149,915	32,870
Net change in receivables due from affiliates	5	(109,390)	(116,684)
Net cash provided by (used in) investing activities		7,133	(832,512)
<b>Financing activities</b>			
Net change in payables due to affiliates	5	(3,056)	161,257
Borrowings from affiliate	6, 12	27,000	688,600
Dividends paid to affiliate	12	(88,700)	(131,520)
Net cash (used in) provided by financing activities		(64,756)	718,337
Net increase in cash and cash equivalents		617	2,896
Cash and cash equivalents at January 1		4,131	1,235
Cash and cash equivalents at December 31		\$ 4,748	\$ 4,131

# Veolia North America, Inc.

## Notes to Separate Company Financial Statements

Years Ended December 31, 2017 and 2016  
(In Thousands, Unless Otherwise Indicated)

### 1. Organization and Basis of Presentation

Veolia North America, Inc. (the Company or VNA) is a wholly owned subsidiary of Veolia Environnement, S.A. (VE), the ultimate parent. VE is a global leader in providing environmental services and offers a wide range of solutions for managing water, waste, and energy. VE is publicly traded on the Euronext exchange, and its principal place of business is at 30, rue Madeleine Vionnet, 93300 Aubervilliers, France.

VNA is the legal and financial holding company of VE's principal businesses located in the United States. In its capacity as a financial holding company, VNA also provides intercompany loans to its subsidiaries in the United States as well as other affiliate companies of Veolia in Canada. VNA was incorporated in the state of Delaware, and its registered office is located at The Nemours Building, 1007 Orange Street, Suite 1414, Wilmington, Delaware 19801. The Company's principal place of business is 53 State Street, Boston, Massachusetts 02109.

These separate company financial statements, which have been prepared in accordance with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), represent the financial position, operating activities, and cash flows of the VNA holding company.

In accordance with the limited exemption under IFRS 10, *Consolidated Financial Statements*, VNA is not required to and does not prepare consolidated financial statements because (i) VNA is a wholly owned subsidiary of VE and VE has been informed about and does not object to VNA not presenting consolidated financial statements; (ii) VNA has no debt or equity instruments which are publicly traded; (iii) VNA has no intention to file these financial statements with a securities commission or other regulatory organization for the purpose of issuing securities or debt to the public; and (iv) VE produces consolidated financial statements that comply with IFRS and are available for public use ([www.veolia.com/en/veolia-group/media/publications](http://www.veolia.com/en/veolia-group/media/publications)). Accordingly, these separate company financial statements, as defined in International Accounting Standard (IAS) 27, *Separate Financial Statements*, are unconsolidated financial statements or financial statements in which investments in subsidiaries are not consolidated in accordance with IFRS, do not purport to represent, and should not be read as, consolidated financial statements including the assets, liabilities, revenues, expenses, and cash flows of VE's businesses in North America.



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### **1. Organization and Basis of Presentation (continued)**

In connection with the preparation of these separate company financial statements, the Company evaluated subsequent events through June 28, 2018, the date these financial statements were approved by management of VNA and VE and, therefore, were available to be issued. See Note 13 for additional details.

#### **2. Summary of Significant Accounting Policies**

##### **Significant Accounting Judgments, Estimates, and Assumptions**

The preparation of these separate company financial statements requires management to make judgments, estimates, and assumptions that affect the reported amounts of expenses, assets and liabilities, and the accompanying disclosures, and the disclosure of contingent liabilities. Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

##### **Investments in Subsidiaries**

Investments in direct wholly owned subsidiaries of VNA are carried at cost in these separate company financial statements. Dividends are recognized in profit or loss when declared and authorized.

##### **Loans Issued to Affiliates**

Loans issued by VNA to its subsidiaries and affiliates are carried at amortized cost.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 2. Summary of Significant Accounting Policies (continued)

##### Impairment of Assets

Annually, the Company performs a review of its investments in subsidiaries and loans due from affiliates to determine whether any indicator of impairment is present, in accordance with IAS 36, *Impairment of Assets*. In assessing whether there is any indication that an investment in subsidiary or loan due from affiliate is impaired, the Company considered external and internal sources of information. External sources of information considered included observable indications that the value of the underlying assets used by the subsidiary or affiliate have declined more than would be expected or significant changes in the market which have an adverse impact of the subsidiary or affiliate. Internal sources of information considered included internal management reporting and the long-term plans of the subsidiary or affiliate, which have also been approved by VE, and whether recent or projected financial performance or management's plans indicate that there may be a potential indicator of impairment. If there is an indication that an investment in subsidiary or loan receivable due from affiliate may be impaired, the Company is then required to make a formal estimate of the recoverable amount. The recoverable amount is defined as the higher of fair value less costs of disposal (FVLCD) and value in use (VIU). FVLCD is the amount for which the asset could be sold, having deducted costs of disposal (incrementally incurred direct selling costs). VIU is the present value of the cash flows expected from the future use and eventual sale of the asset at the end of its useful life. If the carrying amount exceeds the recoverable amount, an impairment loss is recognized in profit or loss for the period.

At December 31, 2017 and 2016, the Company performed a review and determined there were no indicators of impairment present relating to its investments in subsidiaries and loan receivables due from affiliates.

##### Current Amounts Due to and From Affiliates

The Company participates in a global cash management system which includes all of its subsidiaries (direct and indirect). Daily, the Company funds cash required by its operating subsidiaries necessary to satisfy payment of liabilities, and the Company sweeps excess cash at the operating subsidiaries.



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 2. Summary of Significant Accounting Policies (continued)

In a statement of financial position:

- Net excess cash sweeps from subsidiary are shown as amounts due to affiliates and classified as current liabilities.
- Net short-term advances issued to a subsidiary are shown as amounts due from affiliates and classified as current assets.

The Company has a similar arrangement with VE, the ultimate parent.

#### Cash and Cash Equivalents

Cash and short-term deposits in the statement of financial position comprise cash at banks, which are subject to an insignificant risk of changes in value.

#### Borrowings Due to Affiliates

Borrowings due to affiliates are initially recognized at fair value and, in the case of loans and borrowings, include directly attributable transaction costs. After initial recognition, interest bearing loans and borrowings are subsequently measured at amortized cost using the effective interest rate method. Gains and losses are recognized in profit or loss when the liabilities are derecognized.

A financial liability is derecognized when the obligation under the liability is discharged, canceled or expired. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognized in the profit or loss.

Borrowings are classified as noncurrent liabilities when the maturity date is at least 12 months after the balance sheet date. Borrowings due within the next year are considered current liabilities unless the Company has an unconditional right to defer settlement of the liability for at least 12 months after the reporting date.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 2. Summary of Significant Accounting Policies (continued)

##### Offsetting of Financial Instruments

Financial assets and financial liabilities are offset and the net amount reported in the statement of financial position if, and only if, there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, or to realize the assets and settle the liabilities simultaneously.

##### Foreign Currency-Denominated Transactions

Liabilities, receivables, and cash balances denominated in currencies other than the U.S. dollar are recorded in the balance sheet at their U.S. dollar equivalent determined using year-end exchange rates. Gains and losses resulting from the translation of foreign currency denominated liabilities and receivables measured using year-end exchange rates are recorded in "Other income (expense)" on the accompanying statement of comprehensive income.

##### Current Versus Noncurrent Classification

The Company presents assets and liabilities in the statement of financial position based on its current or noncurrent classification. An asset is current when it is:

- Expected to be realized or intended to be sold or consumed in the normal operating cycle
- Expected to be realized within 12 months after the reporting period
- Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least 12 months after the reporting period.

All other assets are classified as noncurrent.

A liability is current when:

- It is expected to be settled in the normal operating cycle
- It is held primarily for the purpose of trading
- It is due to be settled within 12 months after the reporting period
- There is no unconditional right to defer the settlement of the liability for at least 12 months after the reporting period.

The Company classifies all other liabilities as noncurrent. Deferred tax assets and liabilities are classified as noncurrent assets or liabilities.



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 2. Summary of Significant Accounting Policies (continued)

##### Management Fee

The Company is charged a management fee for various services provided by a wholly owned subsidiary, which manages shared services centers (SSC) in the United States. The SSC provides various services to the Company and its wholly owned operating subsidiaries in North America, including financing, tax, information technology, legal, and other administrative services. The Company is charged by the SSC for an allocated portion of the total direct costs incurred by the SSC in connection with providing these services.

The Company is also charged a management fee by VE that is associated with executive and other administrative management services that are provided by VE as well as a branding and royalty fee. The branding and royalty charge represents an allocated portion of costs incurred by VE to provide various marketing services and costs linked to the Veolia brand.

In the opinion of management, these allocations and charges have been made on a reasonable basis; however, they are not necessarily indicative of the level of expenses which might have been incurred had the Company been operating as a separate stand-alone entity.

##### Income Taxes

VNA files as the parent corporation of the U.S. consolidated tax group, which includes VNA and all of its wholly owned subsidiaries. VNA is obligated to pay all federal taxes when due on behalf of the consolidated group. In addition, VNA is also responsible to pay state taxes due where VNA files tax returns on a combined, consolidated, or unitary basis. Income taxes payable due to taxing authorities are included within accrued liabilities on the accompanying statement of financial position.

Within the framework of a group tax sharing agreement, VNA receives tax sharing payments from its wholly owned subsidiaries. The subsidiaries comprise tax sharing groups that remit tax to VNA based on calculated tax as if each tax sharing group was filing on a stand-alone basis.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### **2. Summary of Significant Accounting Policies (continued)**

For purposes of these separate company financial statements, income tax expense is composed of current and deferred components determined based on the activities and tax attributes of VNA on a stand-alone basis, applying the enacted regulations under the U.S. Internal Revenue Code as of the reporting date.

Deferred tax assets are recognized for unused tax losses and tax credits of VNA to the extent that these amounts will be utilized and realized. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and the level of future taxable profits, together with future tax planning strategies. The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

#### **Share Capital**

At December 31, 2017 and 2016, the Company had 16,000 shares authorized for issuance, including 15,000 shares of common stock and 1,000 shares of preferred stock at par \$0.01 per share.

#### **Foreign Currency Risk**

Foreign currency risk is the risk that the future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The Company's exposure to the risk of changes in foreign exchange rates relates primarily to intercompany loans denominated in currencies other than the U.S. dollar.

#### **Market Risk**

Market risk is the risk that the future cash flows of a financial instrument will fluctuate because of changes in market prices. The Company's market risk is related to the interest rate risk, as interest on the entity's financial instruments depends on the interest rate per annum for the offering of deposits in U.S. dollars in the London Interbank market for a three-month period comparable to the Interest Period (LIBOR 3M) of the financial instrument. Financial instruments affected by market risk include long-term loans received from and issued to affiliates, and cash and cash equivalents.



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 2. Summary of Significant Accounting Policies (continued)

##### Liquidity Risk

Liquidity risk is defined as the risk that an entity will encounter difficulty in meeting obligations associated with its financial liabilities.

##### Standards Issued Not Yet Effective

The standards and interpretations that are issued, but not yet effective, up to the date of issuance of these separate company financial statements are disclosed below. VNA intends to adopt these standards, as applicable, when they become effective.

##### IFRS 9, Financial Instruments

In July 2014, the IASB issued the final version of IFRS 9, *Financial Instruments*, which replaces IAS 39, *Financial Instruments: Recognition and Measurement*, and all previous versions of IFRS 9. IFRS 9 brings together all three aspects of the accounting for the financial instruments project: classification and measurement; impairment; and hedge accounting. IFRS 9 is effective for annual periods beginning on or after January 1, 2018, with early application permitted. Except for hedge accounting, retrospective application is required, but providing comparative information is not compulsory. For hedge accounting, the requirements are generally applied prospectively, with some limited exceptions. The Company is currently evaluating the impact of adopting IFRS 9 on these separate company financial statements, including (a) the requirement to evaluate contractual cash flow characteristics of financial instruments in order to determine appropriate classification and measurement; and (b) whether the impairment review performed relative to outstanding loans will need to be supported by more detailed analyses, which considers reasonable and supportable information, including forward-looking elements, to determine potential indicators of impairment.



Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**2. Summary of Significant Accounting Policies (continued)**

**IFRIC 23, Financial Instruments**

In June 2017, the IASB issued IFRIC Interpretation 23, *Uncertainty over Income Tax Treatments* (IFRIC 23), which clarifies application of recognition and measurement requirements of IAS 12, *Income Taxes*, when there is uncertainty over income tax treatments. This Interpretation addresses whether an entity considers uncertain tax treatments separately, the assumptions an entity makes about the examination of tax treatments by taxation authorities, how an entity determines taxable profit (tax loss), tax bases, unused tax losses, unused tax credits and tax rates, and how an entity considers changes in facts and circumstances.

On initial application of the amendment, entities are not required to provide comparative information for preceding periods. These amendments are effective for annual periods beginning on or after January 1, 2018, with early application permitted. Application of the amendments may result in additional disclosures to be provided in these separate company financial statements.

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**3. Investments in Subsidiaries**

Investments in subsidiaries are represented by the following holding companies for various Veolia businesses in the United States:

Company Name	Country of Incorporation	Principal Activity	Cost	Ownership Interest Held	
				December 31 2017	December 31 2016
WASCO, LLC	United States	Design, build, and operator of water treatment facilities	\$ 388,752	100%	100%
Veolia Energy North America Holdings, Inc. (VENAH)	United States	District heating and cooling; energy consulting services	200,000	100	100
Veolia Environmental Services North America LLC (VESNA)	United States	Hazardous waste disposal and other industrial waste activities	262,008	100	100
Veolia North America, LLC	United States	Shared services center	–	100	100
Veolia North America Regeneration Services, LLC (RGS)	United States	Sulfur acid treatment and regeneration services	97,000	100	100
Veolia Nuclear Solutions, Inc. (Kurion)	United States	Nuclear waste treatment services	–	100	100
Aqua Alliance, Inc.	United States	Holding company for certain nonoperating Water legacy entities	–	100	100
Veolia Environnement North America Company (VENAC)	United States	Legacy activity holding company	14,880	100	100
Total			<u>\$ 962,640</u>		

**Acquisition of Sulfuric Acid Regeneration Services Business**

In connection with the Company’s acquisition of the sulfuric acid regeneration services business from Chemours in July 2016, VE issued a loan to the Company in the amount of \$325 million. In turn, VNA established Veolia North America Regeneration Services, LLC (RGS), a wholly owned subsidiary incorporated in Delaware, with an investment of \$97 million. In addition, the Company issued a loan to RGS in the amount of \$228 million during June 2016 (see Note 4 for additional information).

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 4. Long-Term Loans Due From Affiliates

The Company has a portfolio of long-term loans due from affiliates as follows:

Borrower	Currency	Reference Rate for Variable Interest	Spread	Issuance Date	Maturity Date	December 31	
						2017	2016
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	2.50%	12/12/2007	12/31/2027	\$ 605,000	\$ 605,000
Veolia Nuclear Solutions, Inc.	USD	LIBOR 3M	3.75%	4/1/2016	4/1/2026	363,600	363,600
Veolia North America Regeneration Services, LLC	USD	LIBOR 3M	2.50%	7/29/2016	7/29/2026	228,000	228,000
WASCO, LLC	USD	LIBOR 3M	2.50%	12/13/2012	12/13/2022	85,000	85,000
WASCO, LLC	USD	LIBOR 3M	3.00%	12/13/2012	12/13/2027	85,000	85,000
WASCO, LLC	USD	LIBOR 3M	2.00%	12/13/2012	12/13/2017	-	79,000
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	2.50%	10/1/2010	9/30/2020	74,000	74,000
Veolia ES Industrial Services, Inc.	USD	LIBOR 3M	2.00%	12/12/2013	12/13/2023	-	55,000
Veolia Water Technologies, Inc.	USD	LIBOR 3M	1.00%	1/1/2010	12/31/2020	50,000	50,000
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	2.50%	1/31/2014	1/31/2024	41,300	41,300
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	3.75%	1/9/2017	1/9/2027	27,000	-
Veolia Environmental Services North America, LLC	USD	LIBOR 3M	3.75%	1/11/2016	10/31/2026	36,593	36,593
Veolia ES Canada, Inc.	CAD	CDOR 3M	2.50%	7/16/2013	7/15/2023	34,291	31,742
Veolia Water Technologies, Inc.	USD	LIBOR 3M	1.00%	12/29/2008	12/31/2018	30,500	30,500
Veolia Energy Cambridge Holding, Inc.	USD	LIBOR 3M	3.75%	3/31/2015	3/31/2025	29,700	29,700
Veolia Water Technologies, Inc.	USD	LIBOR 3M	3.50%	1/10/2013	1/9/2023	23,900	23,900
Veolia ES Canada Industrial Services, Inc.	CAD	CDOR 3M	2.50%	4/27/2012	4/27/2022	23,924	22,478
Veolia ES Industrial Services, Inc.	USD	LIBOR 3M	2.50%	12/12/2013	12/13/2018	-	15,000
Veolia Energy Atlantic Station, LLC	USD	Fixed interest rate	5.13%	9/1/2015	3/1/2026	10,650	11,565
Veolia Energy Canada, Inc.	CAD	CDOR 3M	3.75%	7/13/2015	7/13/2025	18,262	10,789
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	2.50%	7/27/2012	7/27/2022	-	-
Total						<u>\$ 1,766,720</u>	<u>\$ 1,878,167</u>



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 4. Long-Term Loans Due From Affiliates (continued)

All long-term loans due from affiliates are also charged a loan utilization fee of 0.35%, which is charged in addition to the interest rates referenced above.

For purposes of the loan summary disclosed above, the referenced rates are defined as follows:

USD Libor 3M is defined as:

- (i). The interest rate per annum for the offering of deposits in U.S. dollars in the London Interbank market for a three-month period comparable to the Interest Period, as shown on the Reuters screen (or such other page or pages as may replace that service from time to time) at 11:00 (London time) on the Quotation Day (the **LIBOR USD Screen Rate**),
- (ii). If the LIBOR Screen Rate is not available, the arithmetic mean (rounded upward to four decimal places) as calculated by the Lender of the interest rates supplied to the Lender by the Reference Banks for the offering of deposits in the currency of the Loan to leading banks in the London Interbank market for a period comparable to the relevant Interest Period and for an amount comparable to the Loan.

CDOR 3M is defined as:

- (i). The Canadian dollar offered rate for the offering of deposits in CAD in the Canadian interbank market for a three-month period comparable to the Interest Period displayed (before any correction, recalculation, or republication by the administrator) on the "CDOR" page of the Thomson Reuters screen (or any replacement Thomson Reuters page, which displays that rate) at 11:00 (the CDOR Screen Rate),
- (ii). If the CDOR Screen Rate is not available, the arithmetic mean of the rates (rounded upward to four decimal places) as calculated by the Lender of the interest rates supplied to the Lender by the Reference Banks for the offering of deposits in CAD to leading banks in the interbank market on the Quotation Day for a period comparable to the Interest Period and for an amount comparable to the Loan.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 4. Long-Term Loans Due From Affiliates (continued)

Loans denominated in U.S. dollars (USD) are issued to direct and indirect wholly owned subsidiaries of the Company in the United States. Loans denominated in Canadian dollars (CAD) are issued to affiliates of the Company located in Canada.

During 2017, the following loan transactions occurred:

- In May 2017, the \$605 million loan due December 31, 2017 from Veolia Energy North America Holdings, Inc. was renewed for an additional ten-year period.
- The \$79 million loan due from WASCO, LLC was repaid at its maturity on December 13, 2017.
- In November 2017, the amounts due from Veolia ES Industrial Services, Inc. were repaid.

During May 2018, the Company committed to renew one loan agreement:

- \$30.5 million loan due December 31, 2018 – renewed for an additional ten-year period

Accordingly, this loan is classified as a noncurrent asset.

#### Acquisition of Kurion, Inc. Nuclear Waste Services Business

During 2016, VE provided short-term borrowings of \$363.6 million to the Company (see Note 6). In turn, VNA established Veolia Acquisition Sub, Inc. (VAS), a wholly owned subsidiary incorporated in Delaware with a nominal investment. In addition, the Company provided short-term borrowings of approximately \$363.6 million to VAS, in order to finance the acquisition of all outstanding shares in Kurion, Inc. (Kurion). The acquisition was accounted for as a reverse-merger, resulting in the dissolution of VAS and no investment being recorded by the Company.

In December 2016, the short-term borrowing due from Kurion was refinanced by the Company with a ten-year loan in the amount of \$363.6 million and due in December 2026.



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### **4. Long-Term Loans Due From Affiliates (continued)**

##### **Acquisition of Sulfuric Acid Regeneration Services Business**

In July 2016, the Company provided a ten-year loan in the amount of \$228.0 million to its wholly owned subsidiary, RGS, to finance the acquisition of the sulfuric acid regeneration services business.

##### **Acquisition of Enovity, Inc.**

In January 2017, the Company borrowed \$27.0 million from VE under a ten-year long-term loan and, in turn, loaned \$27.0 million to Veolia Energy North America Holdings, Inc. (VENAH) under a ten-year long-term loan with the same terms. The \$27.0 million borrowing was used to finance the acquisition by VENAH of Enovity, Inc.

#### **5. Current Amounts Due to Subsidiaries and Current Amounts Due From Affiliates**

The Company participates in the Veolia cash pooling system. As a result, the Company sweeps excess cash from (or provides cash funding to) its operating subsidiaries on a daily basis. In addition, VE periodically sweeps excess cash from (or provides cash funding to) the Company.

As a result, the Company has current liabilities for amounts due to certain subsidiaries relating to cumulative net cash swept. In addition, the Company also has current assets for amounts due from affiliates and/or relating to the Company's excess cash, which is swept by VE.

Depending on the current balance, there may be interest expense and interest income recorded by the Company relating to net cash swept from subsidiaries and the net amounts of cash remitted to VE, respectively. During 2017, interest was charged based on amounts outstanding at the Federal Funds Rate plus 0.50% plus a 0.35% utilization fee. Affiliate deposits with the Company are paid interest at the Federal Funds Rate plus 0.20% to 0.85% in 2017.

#### **6. Long-Term Loans Due to Affiliates**

In July 2016, the Company received proceeds of \$325.0 million from a long-term loan with VE Finance (a wholly owned subsidiary of VE), in connection with the acquisition of the sulfuric acid regenerations services business (see Note 3). The long-term loan matures in July 2026 and bears interest on the outstanding principal at a per annum rate of 2.5% plus LIBOR 3M plus a 0.35% utilization fee.

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**6. Long-Term Loans Due to Affiliates (continued)**

In December 2016, the Company refinanced \$363.6 million of short-term borrowings due to VE (see Note 4) with a \$363.6 million long-term loan. This long-term financing is associated with the Company's acquisition of Kurion, Inc. The long-term loan matures in December 2026 and bears interest on the outstanding principal at a per annum rate of 3.75% plus LIBOR 3M plus a 0.35% utilization fee.

In January 2017, the Company received proceeds of \$27.0 million from a long-term loan with VE Finance (a wholly owned subsidiary of VE), in connection with the acquisition of Enovity, Inc. (see Note 4). The long-term loan matures in January 2027 and bears interest on the outstanding principal at a per annum rate of 3.75% plus LIBOR 3M plus a 0.35% utilization fee.

**7. Dividend Income**

For the years ended December 31, 2017 and 2016, the components of dividend income received from the Company's operating subsidiaries were as follows:

<b>Subsidiary</b>	<b>Division</b>	<b>2017</b>	<b>2016</b>
WASCO	Water	\$ 55,600	\$ 62,600
VESNA	Environmental Services	10,700	42,670
RGS	Financial Group	900	—
VENAH	Energy	12,900	26,250
Total		\$ 80,100	\$ 131,520



Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**8. Net Interest Income**

For the years ended December 31, 2017 and 2016, the following amounts of interest income and interest expense were recorded on long-term loans due from (to) affiliates and on outstanding current amounts due from (to) affiliates:

	<u>2017</u>	<u>2016</u>
Interest income on long-term loans due from affiliates	\$ 73,467	\$ 45,193
Interest income on current amounts due from affiliates	2,601	8,733
	<u>76,068</u>	53,926
Interest expense on long-term loans due to affiliates	(33,834)	(6,115)
Interest expense on current amounts due to affiliates	(8,490)	(7,231)
	<u>(42,324)</u>	(13,346)
Net interest income	\$ 33,744	\$ 40,580

**9. Income Taxes**

VNA files as the parent corporation of the U.S. consolidated tax group, which includes VNA and all of its wholly owned subsidiaries. VNA is obligated to pay all federal taxes when due on behalf of the consolidated group. In addition, VNA is also responsible to pay state taxes due where VNA files tax returns on a combined, consolidated, or unitary basis.

Within the framework of a group tax sharing agreement, VNA receives tax sharing payments from its wholly owned subsidiaries. The subsidiaries comprise tax sharing groups that remit tax to VNA based on calculated tax as if each tax sharing group was filing on a stand-alone basis.

For the years ended December 31, 2017 and 2016, the current and deferred components of the income tax benefit (expense) recorded were as follows:

	<u>2017</u>	<u>2016</u>
Current income tax benefit	\$ 35,105	\$ 46,352
Deferred income tax expense	(102,705)	(20,900)
	<u>\$ (67,600)</u>	<u>\$ 25,452</u>

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**9. Income Taxes (continued)**

For the years ended December 31, 2017 and 2016, the reconciliations of the federal statutory tax rate and the effective income tax rate for each year are as follows:

	<u>2017</u>	<u>2016</u>
Profit before tax	\$ 38,928	\$ 93,729
Income tax (expense) benefit	<b>(67,600)</b>	25,452
Effective tax rate	<b>(173.7)%</b>	27.2%
Federal statutory tax rate	<b>(35.0)%</b>	(35.0)%
Non-taxable dividend income	<b>71.9</b>	49.1
State and foreign taxes	<b>(12.7)</b>	(1.7)
Reversal of excess income tax payable	-	13.5
Rate change	<b>(203.3)</b>	-
Other	<b>5.4</b>	1.3
Effective tax rate	<b>(173.7)%</b>	27.2%

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 9. Income Taxes (continued)

##### Tax Reform

On December 22, 2017, President Trump signed into law the Tax Cuts and Jobs Act (TCJA). The legislation significantly changes U.S. tax law by, among other things, lowering the U.S. corporate income tax rate from 35% to 21%, imposing significant additional limitations on the deductibility of interest, creating the base erosion minimum tax and anti-deferral provisions regarding certain foreign income, allowing for the immediate expensing of qualified capital expenditures, implementing a modified territorial tax system, and imposing a transition tax on deemed repatriated earnings of foreign subsidiaries. The Company recorded a reasonable estimate of its net tax expense of \$79,135, which includes the unfavorable impact from the one-time remeasurement of the deferred tax assets due to the U.S. statutory income tax rate change and subsequent decrease in value of the Company's net deferred tax assets.

While the Company's analysis of the final impact from the TCJA has not been completed, the Company recorded reasonable estimates within the stand-alone financial statements based on reliable information available as of December 31, 2017, in accordance with IAS 8. Changes in accounting estimates will be made as more reliable information is made available for all parts of the TCJA and future changes will be appropriately included in adjusting or non-adjusting periods as required by IAS 10.

As of December 31, 2017, the Company does not expect any material impacts to the Company's stand-alone financial statements from other aspects of the TCJA for the year ended December 31, 2018. However, due to the complexity of the new tax legislation, the Company is continuing to evaluate the TCJA and the application of IAS 12. Therefore, the recorded tax effects in the year ended December 31, 2017, are reasonable estimates that will be adjusted and disclosed, as necessary, in future reporting periods as new, more reliable information becomes available. The new information that could cause the Company to adjust the reasonable estimate in future periods is additional information and guidance provided by the Internal Revenue Service, the U.S. Treasury Department, and the IASB.



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 9. Income Taxes (continued)

##### Deferred Income Taxes

Deferred income taxes are generally recognized for differences between book and tax, or for other tax attributes such as net operating and capital losses, which may be carried forward and utilized in future periods.

At each period-end, the Company reviews the recoverable amount of deferred tax assets arising from deductible timing difference and from tax attributes which may be carried forward. Deferred tax assets relating to deductible timing differences and from tax attributes are not recognized, or may need to be reduced when required by the specific facts and circumstances, when:

- a) The forecast period and uncertainties regarding the economic environment no longer support realization
  - b) The utilization of tax attributes which may be carried forward becomes significantly uncertain
  - c) The forecast utilization period exceeds the carry forward period authorized by tax legislation
- or
- d) Future taxable profits are uncertain due to other risks

Deferred income taxes are adjusted for the effects of changes in prevailing tax laws and rates at year-end. Deferred income taxes are not discounted.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 9. Income Taxes (continued)

At December 31, 2017 and 2016, the components of deferred tax assets were as follows:

	<u>2017</u>	<u>2016</u>
Tax losses carried forward for U.S. federal tax purposes	\$ 125,891	\$ 212,900
Tax losses carried forward for state tax purposes	26,204	26,600
Tax credits carried forward	–	15,300
Total	<u>\$ 152,095</u>	<u>\$ 254,800</u>

The Company's tax losses carried forward for U.S. federal tax purposes begin to expire in 2026. The Company's tax losses carried forward in certain state jurisdictions begin to expire in years 2020, 2021, 2022, and 2026. The tax credits may be carried forward and utilized indefinitely.

#### 10. Commitments and Contingencies

##### Legal Proceedings

From time to time and in the normal course of business, the Company may be involved in various litigation, as described below. Management has evaluated the litigation below and concluded that a loss is not probable or estimable.

##### United States – Water – Flint

In April 2014, the emergency manager (Emergency Manager) in charge of the City of Flint, Michigan, ordered that it switch its water supply source (previously provided from Detroit) and begin treating Flint River water for distribution to its residents. Soon after, Flint residents began to complain about the water's odor, taste, and appearance. Between August 2014 and December 2014, Flint experienced a number of water quality issues resulting in violations of National Primary Drinking Water Regulations, including Total Trihalomethanes (TTHM, which are disinfection byproducts) maximum contaminant level violations. In February 2015, Flint hired Veolia Water North America Operating Services, LLC (VWNAOS) for an analysis related to residual effects of the chlorination process (TTHM), discoloration, and taste and odor issues. The scope of this approximately four-week analysis did not include lead and copper tests.



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### **10. Commitments and Contingencies (continued)**

On February 18, 2015, VWNAOS issued an interim report, which included a statement that the drinking water was “safe” in that it complied “with state and federal standards and required testing.” During a public meeting that was organized by the Flint City Council Public Works Committee in relation to VWNAOS’s interim report, VWNAOS employees communicated to the public information from the report. The City had previously informed VWNAOS that the City, not VWNAOS, would be conducting lead testing.

On March 12, 2015, VWNAOS delivered its final report to Flint, which was then made available to the public. In its final report, VWNAOS included a broad set of recommendations to address TTHM compliance and improve water quality related to odor and discoloration. It would appear that many of these recommendations were ignored by the local authorities.

On June 24, 2015, the U.S. Environmental Protection Agency issued a memorandum summarizing the available information regarding activities conducted by the City of Flint and several governmental agencies in response to high lead levels in City drinking water reported by a Flint resident.

On October 21, 2015, the office of the Governor of the State of Michigan commissioned the Flint Water Advisory Task Force, a consulting group made up of experts in a variety of disciplines, to conduct an independent review of the Flint water crisis, including lead contamination.

On March 21, 2016, the Flint Water Advisory Task Force issued its final report, drafted after interviewing numerous individuals and reviewing many documents. The Task Force reported in its conclusion that responsibility for the Flint water crisis rested largely with several governmental agencies and the City of Flint. Notably, the report highlighted that the Michigan Department of Environmental Quality and the City of Flint did not require and implement corrosion control at the time of the change of water supply source, contrary to what was required under the U.S. Environmental Protection Agency’s Lead & Copper Rule to avoid contamination of drinking water with those metals. A total of 15 current or former state and local officials and employees have been charged with criminal conduct for their parts in causing or exacerbating the Flint water crisis.

## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### **10. Commitments and Contingencies (continued)**

Since February 2016, numerous individual complaints and putative class actions have been filed in state and federal courts in Michigan by Flint residents and companies against a number of defendants, including the State of Michigan, the Michigan Department of Environmental Quality, VWNAOS, Veolia North America, Inc. (VNA Inc.), and Veolia North America, LLC (VNA LLC). Flint residents allege injury and damages by exposure to toxins, including lead, contained in the Flint municipal water supply and have levied accusations of professional negligence and fraud against VWNAOS, VNA Inc., and VNA LLC. One or more of VWNAOS, VNA Inc., and VNA LLC have been named in about a dozen putative class actions and in many hundreds of individual cases. To date, none of the courts in which putative class actions have been filed has ruled on whether or not the case may properly proceed as a class action.

On June 22, 2016, the State of Michigan's Attorney General filed a civil action against several defendants, including VWNAOS, VNA Inc., and VNA LLC, for their alleged role in the Flint water crisis. The Attorney General subsequently dismissed that initial action and filed a new civil action on August 16, 2016. Among other allegations, the Attorney General refers to the interim report delivered by VWNAOS. The Attorney General alleges that the acts and omissions of VWNAOS, VNA Inc. and VNA LLC constituted professional negligence and fraud. VWNAOS, VNA Inc. and VNA LLC have not yet been required to respond to the Attorney General's action.

VWNAOS, VNA Inc., and VNA LLC strongly contest the merits of all these legal proceedings. No amounts have been recorded relating to these matters based on current information available and management's evaluation that a contingent loss is neither probable, nor more likely than not, and estimable.

These lawsuits have been reported to the insurers, who have reserved their rights.

#### **U.S. Tax Audits and Worthless Stock Deduction**

In the normal course of business, the Company is subject to regular tax audits. The tax authorities have carried out various tax audits in respect of both the U.S. consolidated tax group and individual entities.



## Veolia North America, Inc.

### Notes to Separate Company Financial Statements (continued)

#### 10. Commitments and Contingencies (continued)

As a result of an internal reorganization in 2006, VNA sought a tax deduction pursuant to the “Worthless Stock Deduction” (WSD) provisions under U.S. tax law. Related tax losses totaled \$4.5 billion (tax base) as of December 31, 2006. VNA submitted a pre-filing agreement request in 2007 to validate this amount as of December 31, 2006, which led to a tax audit by the U.S. Internal Revenue Service (IRS) that is still ongoing.

On October 24, 2017, VNA received a Notice of Proposed Adjustment (NOPA) rejecting all the losses and challenging, in particular, the insolvency of the U.S. subsidiary at the end of 2006 (condition precedent to application of the WSD). This is a preliminary assessment, and no payments are currently required.

VNA continues its discussions with the IRS with a view to resolving or narrowing the issues and replied to this NOPA on January 22, 2018, refuting the merits of the IRS’s arguments.

The NOPA of October 24, 2017, will be followed by a revenue agent’s report, which can be appealed to an Appeals Committee, the IRS administrative body tasked with resolving disputes before they go to court by reaching a settlement agreement. In most cases, this procedure reaches a compromise between the IRS’s and the Company’s positions. Where disagreement remains, an appeal can be filed with the courts.

VNA and its parent, VE, along with its legal advisors, continue to view the tax positions taken as sustainable. VNA’s total exposure in the event the NOPA is confirmed is approximately \$795 million taking into consideration losses utilized since 2006 and losses recognized in deferred net tax assets (excluding interest and penalties). Conversely, a favorable outcome would allow the recognition of additional deferred tax assets, based on VNA’s ability to utilize these losses before expiration in 2026.

Based on information currently available, the Company has not recorded any liabilities in respect of the NOPA but has recorded a deferred tax asset, which is being utilized against the taxable income of the U.S. consolidated tax group. At December 31, 2017, the deferred tax assets recorded in the statement of financial position include a portion of these tax losses, which may be carried forward and have been determined by management to be realizable prior to expiration.

Furthermore, three IRS examinations are ongoing in respect of the U.S. consolidated tax returns filed for years 2007 and 2008, 2009 to 2011, as well as 2012 and 2013. These IRS examinations are ongoing, and no revised assessments or proposed adjustments have been received to date.

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**10. Commitments and Contingencies (continued)**

**Off-Balance Sheet Commitments**

Commitments given by the Company total approximately \$100 million as of December 31, 2017, and consist of performance or financial guarantees given on behalf of its subsidiaries as follows:

- a) Standby letter of credit provided as collateral for its general liability, workers compensation, and other insurance programs for its subsidiaries in the United States
- b) Company performance guarantees provided on behalf of one of its owned subsidiaries for the operations and maintenance services on contracts
- c) Other standby letters of credit on behalf of its owned subsidiaries

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**11. Financial Liabilities**

The tables below summarize the maturity profile of the Company's financial liabilities at December 31, 2017 and 2016, based on contractual undiscounted payments (including future interest payments).

	<b>On Demand or Less Than 1 Year</b>	<b>1 to 5 Years</b>	<b>Over 5 Years</b>	<b>Total</b>
<b>As of December 31, 2017</b>				
Long-term debt due to affiliates	\$ —	\$ —	\$ 715,600	\$ 715,600
Payables due to affiliates	591,782	—	—	591,782
Accrued liabilities	4,017	—	—	4,017
	<u>\$ 595,799</u>	<u>\$ —</u>	<u>\$ 715,600</u>	<u>\$ 1,311,399</u>

	<b>On Demand or Less Than 1 Year</b>	<b>1 to 5 Years</b>	<b>Over 5 Years</b>	<b>Total</b>
<b>As of December 31, 2016</b>				
Long-term debt due to affiliates	\$ —	\$ —	\$ 688,600	\$ 688,600
Payables due to affiliates	594,838	—	—	594,838
Accrued liabilities	4,562	—	—	4,562
	<u>\$ 599,400</u>	<u>\$ —</u>	<u>\$ 688,600</u>	<u>\$ 1,288,000</u>



Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**12. Transactions With Related Parties**

Transactions between related parties may not be effected on the same terms, conditions, and amounts as transactions between unrelated parties. The management considers that VNA Inc. has appropriate policies and procedures in place to identify, account, and properly disclose transactions with related parties.

The nature of the related-party relationships for those related parties with whom the VNA Inc. entered into significant transactions during the years ended December 31, 2017 and 2016, or had significant balances outstanding at December 31, 2017 and 2016, are detailed below.

At December 31, 2017, the outstanding balances with related parties were as follows:

	<u>Subsidiaries</u>	<u>Other Affiliates</u>	<u>Total</u>
Long-term loans receivable due from affiliates	\$ 1,690,243	\$ 76,477	\$ 1,766,720
Current amounts due from affiliates	293,867	-	293,867
Income tax receivable due from affiliates	15,977	-	15,977
Long-term debt due to affiliate	-	(715,600)	(715,600)
Payables due to affiliates	(483,317)	(108,465)	(591,782)
Income tax payable due to affiliates	-	-	-



Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**12. Transactions With Related Parties (continued)**

At December 31, 2016, the outstanding balances with related parties were as follows:

	<u>Subsidiaries</u>	<u>Other Affiliates</u>	<u>Total</u>
Long-term loans receivable due from affiliates	\$ 1,813,158	\$ 65,009	\$ 1,878,167
Current amounts due from affiliates	146,481	40,126	186,607
Income tax receivable due from affiliates	17,747	-	17,747
Long-term debt due to affiliate	-	(688,600)	(688,600)
Payables due to affiliates	(588,723)	(6,115)	(594,838)
Income tax payable due to affiliates	(765)	-	(765)

For the year ended December 31, 2017, transactions with related parties recognized in the statement of comprehensive income were as follows:

	<u>Subsidiaries</u>	<u>Other Affiliates</u>	<u>Total</u>
Dividend income	\$ 80,100	\$	\$ 80,100
Management fee	(75,036)	-	(75,036)
Interest income	(72,641)	(3,427)	(76,068)
Interest expense	5,916	36,408	42,324

For the year ended December 31, 2016, transactions with related parties recognized in the statement of comprehensive income were as follows:

	<u>Subsidiaries</u>	<u>Other Affiliates</u>	<u>Total</u>
Dividend income	\$ 131,520	\$ -	\$ 131,520
Management fee	(71,208)	-	(71,208)
Interest income	51,326	2,600	53,926
Interest expense	(2,858)	(10,488)	(13,346)

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**12. Transactions With Related Parties (continued)**

For the year ended December 31, 2017, cash receipts from and cash payments to related parties were as follows:

	<u>Subsidiaries</u>	<u>Other Affiliates</u>	<u>Total</u>
Dividends received	\$ 80,100	\$ —	\$ 80,100
Dividends paid to VE and affiliates	—	(88,700)	(88,700)
Proceeds from long-term loans due to VE	—	27,000	27,000
Issuance of long-term loans	(27,000)	(6,392)	(33,392)
Receipts from long-term loans	149,915	—	149,915
Tax sharing receipts from subsidiaries	22,115	—	22,115
<b>Cash pooling</b>			
Total cash swept from subsidiaries	252,792	—	252,792
Total cash remitted to VE	—	(140,347)	(140,347)

Veolia North America, Inc.

Notes to Separate Company Financial Statements (continued)

**12. Transactions With Related Parties (continued)**

For the year ended December 31, 2016, cash receipts from and cash payments to related parties were as follows:

	<u>Subsidiaries</u>	<u>Other Affiliates</u>	<u>Total</u>
Dividends received	\$ 131,520	\$ –	\$ 131,520
Dividends paid to VE and affiliates	–	(131,520)	(131,520)
Proceeds from long-term loans due to VE	–	688,600	688,600
Issuance of long-term loans	(643,494)	(8,204)	(651,698)
Receipts from long-term loans	32,870	–	32,870
Tax sharing receipts from subsidiaries	28,972	–	28,972
<b>Cash pooling</b>			
Total cash swept from subsidiaries	82,130	–	82,130
Total cash remitted to VE	–	(37,557)	(37,557)

**13. Events After the Reporting Date**

On February 23, 2018, the shares of Veolia ES Industrial Services, Inc., a wholly owned subsidiary of Veolia Environmental Services North America LLC, were sold to Clean Harbors, Inc.

There were no other subsequent events required to be recognized or disclosed in these separate company financial statements.

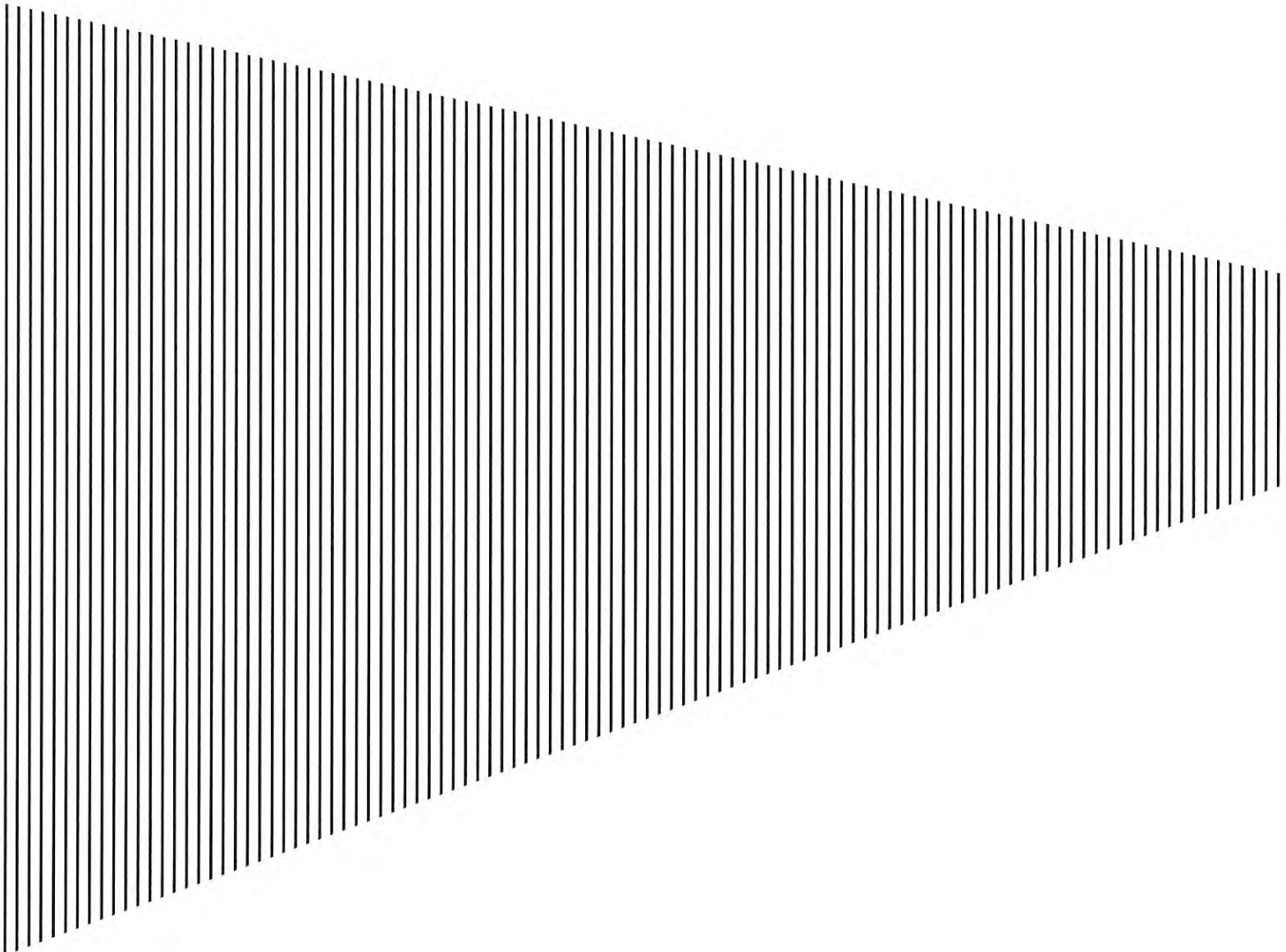
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SEPARATE COMPANY FINANCIAL STATEMENTS

Veolia North America, Inc.  
Years Ended December 31, 2016 and 2015  
With Report of Independent Auditors

Ernst & Young LLP



Veolia North America, Inc.  
Separate Company Financial Statements  
Years Ended December 31, 2016 and 2015

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## Report of Independent Auditors

To the Shareholder  
Veolia North America, Inc.

We have audited the accompanying separate company financial statements of Veolia North America, Inc., which comprise the statement of financial position as of December 31, 2016, and the statements of comprehensive income, changes in equity and cash flows for the year then ended, and the related notes to the separate company financial statements.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards, as issued by the International Accounting Standards Board; this includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### **Auditor's Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.



## **Opinion**

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Veolia North America, Inc. at December 31, 2016 and the results of its operations and its cash flows for the year then ended in conformity with International Financial Reporting Standards, as issued by the International Accounting Standards Board.

## **Report on comparative information**

We have not audited, reviewed or compiled the comparative information presented herein as of December 31, 2015 and January 1, 2015, and for the year ended December 31, 2015, and, accordingly, we express no opinion on it.

*Ernst + Young LLP*

September 21, 2017



Veolia North America, Inc.  
Statement of Financial Position  
December 31, 2016 and 2015

*(in thousands, unless otherwise indicated)*

	Note	December 31, 2016	December 31, 2015	January 1, 2015
<b>Assets</b>				
<b>Non-current assets</b>				
Investments in subsidiaries	3	\$ 962,640	\$ 865,640	\$ 865,640
Loans receivable due from affiliates	4	1,878,167	1,257,575	1,240,690
Deferred tax assets	9	254,800	275,700	293,000
		<u>3,095,607</u>	<u>2,398,915</u>	<u>2,399,330</u>
<b>Current assets</b>				
Receivables due from affiliates	5	186,607	71,939	111,424
Other receivables		18,775	8,069	14,539
Cash and cash equivalents		4,131	1,235	8,395
		<u>209,513</u>	<u>81,243</u>	<u>134,358</u>
<b>Total assets</b>		<u><u>\$3,305,120</u></u>	<u><u>\$2,480,158</u></u>	<u><u>\$2,533,688</u></u>
<b>Equity and liabilities</b>				
<b>Equity</b>				
Share capital	2	\$ -	\$ -	\$ -
Share premium		1,632,821	1,632,821	1,632,821
Retained earnings		384,299	396,638	428,875
		<u>2,017,120</u>	<u>2,029,459</u>	<u>2,061,696</u>
<b>Non-current liabilities</b>				
Debt due to affiliates	6	688,600	-	-
		<u>688,600</u>	<u>-</u>	<u>-</u>
<b>Current liabilities</b>				
Payables due to affiliates	5	594,838	433,581	456,766
Accrued liabilities		4,562	17,118	15,226
		<u>599,400</u>	<u>450,699</u>	<u>471,992</u>
<b>Total liabilities</b>		<u><u>1,288,000</u></u>	<u><u>450,699</u></u>	<u><u>471,992</u></u>
<b>Equity and liabilities</b>		<u><u>\$3,305,120</u></u>	<u><u>\$2,480,158</u></u>	<u><u>\$2,533,688</u></u>

*See accompanying notes to separate company financial statements.*

Veolia North America, Inc.  
Statement of Comprehensive Income  
Years Ended December 31, 2016 and 2015

*(in thousands, unless otherwise indicated)*

	Note	Year ended December 31, 2016	Year ended December 31, 2015 <i>(Unaudited)</i>
Dividend income	7	<b>\$131,520</b>	\$153,600
Management fees		<b>(71,208)</b>	(71,384)
Other operating expenses		<b>(7,163)</b>	(334)
<b>Income before interest, taxes and other items</b>		<b>53,149</b>	81,882
Net interest income	8	<b>40,580</b>	28,446
<b>Profit before tax</b>		<b>93,729</b>	110,328
Income tax benefit	9	<b>25,452</b>	11,035
<b>Profit for the year</b>		<b>119,181</b>	121,363
<b>Total comprehensive income</b>		<b>\$119,181</b>	\$121,363

*See accompanying notes to separate company financial statements.*

Veolia North America, Inc.  
Statement of Changes in Equity  
Years ended December 31, 2016 and 2015  
*(in thousands, unless otherwise indicated)*

	<b>Number of shares outstanding</b>	<b>Share capital</b>	<b>Share premium</b>	<b>Retained earnings</b>	<b>Total equity</b>
January 1, 2015 <i>(unaudited)</i>	1473.73	\$ -	\$1,632,821	\$ 428,875	\$2,061,696
Profit for the year <i>(unaudited)</i>	-	-	-	121,363	121,363
Dividends paid <i>(unaudited)</i>	-	-	-	(153,600)	(153,600)
December 31, 2015 <i>(unaudited)</i>	1473.73	-	1,632,821	396,638	2,029,459
<b>Profit for the year</b>	-	-	-	<b>119,181</b>	<b>119,181</b>
<b>Dividends paid</b>	-	-	-	<b>(131,520)</b>	<b>(131,520)</b>
<b>December 31, 2016</b>	<b>1473.73</b>	<b>\$ -</b>	<b>\$1,632,821</b>	<b>\$ 384,299</b>	<b>\$2,017,120</b>

*See accompanying notes to separate company financial statements.*

Veolia North America, Inc.  
Statement of Cash Flows  
Years ended December 31, 2016 and 2015  
*(in thousands, unless otherwise indicated)*

	Note	Year ended December 31, 2016	Year ended December 31, 2015 <i>(Unaudited)</i>
<b>Operating activities</b>			
Profit for the year		\$119,181	\$121,363
Income tax (benefit)	9	(25,452)	(11,035)
Profit before tax		93,729	110,328
<i>Adjustments to reconcile profit before tax to net cash flow from operating activities</i>			
Net change in other receivables		12,782	(1,027)
Net change in other payables		(12,556)	2,090
Income taxes paid	9	(5,856)	(3,941)
Income tax sharing payments received from subsidiaries	9, 12	28,972	41,224
<b>Net cash flows from operating activities</b>		<b>117,071</b>	<b>148,674</b>
<b>Investing activities</b>			
Investment in subsidiary	3	(97,000)	-
Loans issued to affiliates	4, 12	(651,698)	(62,735)
Loan repayments received from affiliates	4, 12	32,870	34,091
Net change in receivables due from affiliates	5	(116,684)	49,595
<b>Net cash (used in) provided by investing activities</b>		<b>(832,512)</b>	<b>20,951</b>
<b>Financing activities</b>			
Net change in payables due to affiliates	5	161,257	(23,185)
Borrowings from affiliate	6, 12	688,600	-
Dividends paid to affiliate	12	(131,520)	(153,600)
<b>Net cash provided by (used in) financing activities</b>		<b>718,337</b>	<b>(176,785)</b>
<b>Net increase (decrease) in cash and cash equivalents</b>		<b>2,896</b>	<b>(7,160)</b>
Cash and cash equivalents at January 1		1,235	8,395
<b>Cash and cash equivalents at December 31</b>		<b>\$ 4,131</b>	<b>\$ 1,235</b>

*See accompanying notes to separate company financial statements.*



Veolia North America, Inc.  
Notes to Separate Company Financial Statements  
Years ended December 31, 2016 and 2015  
(in thousands, unless otherwise indicated)

## 1. Organization and Basis of Presentation

Veolia North America, Inc. (Company or VNA) is a wholly owned subsidiary of Veolia Environnement, S.A. (VE), the ultimate parent. VE is a global leader in providing environmental services and offers a wide range of solutions for managing water, waste and energy. VE is publicly traded on the Euronext exchange and its principal place of business is at 30, rue Madeleine Vionnet, 93300 Aubervilliers, France.

VNA is the legal and financial holding company of VE's principal businesses located in the United States. In its capacity as a financial holding company, VNA also provides intercompany loans to its subsidiaries in the United States as well as other affiliate companies of Veolia in Canada. VNA was incorporated in the state of Delaware and its registered office is located at The Nemours Building, 1007 Orange Street, Suite 1414, Wilmington, Delaware 19801. The Company's principal place of business is 53 State Street, Boston, Massachusetts 02109.

These separate company financial statements, which have been prepared in accordance with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), represent the financial position, operating activities, and cash flows of the VNA holding company.

In accordance with the limited exemption under IFRS 10, *Consolidated Financial Statements*, VNA is not required to and does not prepare consolidated financial statements because (i) VNA is a wholly owned subsidiary of VE and VE has been informed about and does not object to VNA not presenting consolidated financial statements; (ii) VNA has no debt or equity instruments which are publicly traded; (iii) VNA has no intention to file these financial statements with a securities commission or other regulatory organization for the purpose of issuing securities or debt to the public; and (iv) VE produces consolidated financial statements that comply with IFRS and are available for public use ([www.veolia.com/en/veolia-group/media/publications](http://www.veolia.com/en/veolia-group/media/publications)). Accordingly, these separate company financial statements, as defined in International Accounting Standard ("IAS") 27, *Separate Financial Statements*, are unconsolidated financial statements or financial statements in which investments in subsidiaries are not consolidated in accordance with IFRS, do not purport to represent, and should not be read as, consolidated financial statements including the assets, liabilities, revenues, expenses, and cash flows of VE's businesses in North America.

These separate company financial statements as of and for the year ended December 31, 2016, are the initial financial statements prepared and issued by the Company. Accordingly, the Company has prepared these separate company financial statements in compliance with applicable IFRS as at the reporting date of December 31, 2016, together with the comparative period data as of and for the year ended December 31, 2015, as described in Note 2, *Summary of Significant Accounting Policies*. In preparing the IFRS compliant financial statements for the first time, the Company has also presented the statement of financial position as of the transition date, or January 1, 2015.

In connection with the preparation of these separate company financial statements, the Company evaluated subsequent events through September 21, 2017, the date these financial statements were approved by management of VNA and VE and, therefore, were available to be issued. See Note 14 for additional details.

Veolia North America, Inc.  
Notes to Separate Company Financial Statements  
Years ended December 31, 2016 and 2015  
*(in thousands, unless otherwise indicated)*

## 2. Summary of Significant Accounting Policies

### *Significant accounting judgments, estimates and assumptions*

The preparation of these separate company financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of expenses, assets and liabilities, and the accompanying disclosures, and the disclosure of contingent liabilities. Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

### *Investments in subsidiaries*

Investments in direct wholly owned subsidiaries of VNA are carried at cost in these separate company financial statements. Dividends are recognized in profit or loss when declared and authorized.

### *Loans issued to affiliates*

Loans issued by VNA to its subsidiaries and affiliates are carried at amortized cost.

### *Impairment of assets*

Annually, the Company performs a review of its investments in subsidiaries and loans due from affiliates to determine whether there is any indicator of impairment is present, in accordance with IAS 36, *Impairment of Assets*. In assessing whether there is any indication that an investment in subsidiary or loan due from affiliate is impaired, the Company considered external and internal sources of information. External sources of information considered included observable indications that the value of the underlying assets used by the subsidiary or affiliate have declined more than would be expected or significant changes in the market which have an adverse impact of the subsidiary or affiliate. Internal sources of information considered included internal management reporting and the long-term plans of the subsidiary or affiliate, which have also been approved by VE, and whether recent or projected financial performance or management's plans indicate that there may be a potential indicator of impairment. If there is an indication that an investment in subsidiary or loan receivable due from affiliate may be impaired, the Company is then required to make a formal estimate of the recoverable amount. The recoverable amount is defined as the higher of fair value less costs of disposal (FVLCD) and value in use (VIU). FVLCD is the amount for which the asset could be sold for, having deducted costs of disposal (incrementally incurred direct selling costs). VIU is the present value of the cash flows expected from the future use and eventual sale of the asset at the end of its useful life. If the carrying amount exceeds the recoverable amount, an impairment loss is recognized in profit or loss for the period.

At December 31, 2016 and 2015, the Company performed a review and determined there were no indicators of impairment present relating to its investments in subsidiaries and loan receivables due from affiliates.

Veolia North America, Inc.  
Notes to Separate Company Financial Statements  
Years ended December 31, 2016 and 2015  
*(in thousands, unless otherwise indicated)*

## 2. Summary of Significant Accounting Policies (continued)

### *Current amounts due to and from affiliates*

The Company participates in a global cash management system which includes all of its subsidiaries (direct and indirect). Daily, the Company funds cash required by its operating subsidiaries necessary to satisfy payment of liabilities, and the Company sweeps excess cash at the operating subsidiaries.

In a statement of financial position:

- Net excess cash sweeps from subsidiary are shown as amounts due to affiliates and classified as current liabilities
- Net short-term advances issued to a subsidiary are shown as amounts due from affiliates and classified as current assets.

The Company has a similar arrangement with VE, the ultimate parent.

### *Cash and cash equivalents*

Cash and short-term deposits in the statement of financial position comprise cash at banks, which are subject to an insignificant risk of changes in value.

### *Borrowings due to affiliates*

Borrowings due to affiliates are initially recognized at fair value and, in the case of loans and borrowings, include directly attributable transaction costs. After initial recognition, interest bearing loans and borrowings are subsequently measured at amortized cost using the effective interest rate method. Gains and losses are recognized in profit or loss when the liabilities are derecognized.

A financial liability is derecognized when the obligation under the liability is discharged, cancelled or expired. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognized in the profit or loss.

Borrowings are classified as noncurrent liabilities when the maturity date is at least 12 months after the balance sheet date. Borrowings due within the next year are considered current liabilities unless the Company has an unconditional right to defer settlement of the liability for at least 12 months after the reporting date.

### *Offsetting of financial instruments*

Financial assets and financial liabilities are offset and the net amount reported in the statement of financial position if, and only if, there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, or to realize the assets and settle the liabilities simultaneously.

Veolia North America, Inc.  
Notes to Separate Company Financial Statements  
Years ended December 31, 2016 and 2015  
*(in thousands, unless otherwise indicated)*

## 2. Summary of Significant Accounting Policies (continued)

### *Foreign currency-denominated transactions*

Liabilities, receivables and cash balances denominated in currencies other than the U.S. Dollar are recorded in the balance sheet at their U.S. Dollar equivalent determined using year-end exchange rates. Gains and losses resulting from the translation of foreign currency denominated liabilities and receivables measured using year-end exchange rates are recorded in “Other income (expense)” on the accompanying statement of comprehensive income.

### *Current versus non-current classification*

The Company presents assets and liabilities in the statement of financial position based on current/non-current classification. An asset is current when it is:

- Expected to be realized or intended to be sold or consumed in the normal operating cycle
- Expected to be realized within twelve months after the reporting period, or
- Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period.

All other assets are classified as non-current.

A liability is current when:

- It is expected to be settled in the normal operating cycle
- It is held primarily for the purpose of trading
- It is due to be settled within twelve months after the reporting period, or
- There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period.

The Company classifies all other liabilities as non-current. Deferred tax assets and liabilities are classified as noncurrent assets and liabilities.

### *Management fee*

The Company is charged a management fee for various services provided by a wholly owned subsidiary which manages shared services centers (SSC) in the United States. The SSC provide various services to the Company and its wholly owned operating subsidiaries in North America, including financing, tax, information technology, legal and other administrative services. The Company is charged by the SSC for an allocated portion of the total direct costs incurred by the SSC in connection with providing these services.

The Company is also charged a management fee by VE that is associated with executive and other administrative management services that are provided by VE as well as a branding and royalty fee. The branding and royalty charge represents an allocated portion of costs incurred by VE to provide various marketing services and costs linked to the Veolia brand.

In the opinion of management, these allocations and charges have been made on a reasonable basis; however, they are not necessarily indicative of the level of expenses which might have been incurred had the Company been operating as a separate stand-alone entity.



Veolia North America, Inc.  
Notes to Separate Company Financial Statements  
Years ended December 31, 2016 and 2015  
*(in thousands, unless otherwise indicated)*

## 2. Summary of Significant Accounting Policies (continued)

### *Income taxes*

VNA files as the parent corporation of the U.S. consolidated tax group, which includes VNA and all of its wholly owned subsidiaries. VNA is obligated to pay all federal taxes when due on behalf of the consolidated group. In addition, VNA is also responsible to pay state taxes due where VNA files tax returns on a combined, consolidated, or unitary basis. Income taxes payable due to taxing authorities are included within accrued liabilities on the accompanying statement of financial position.

Within the framework of a group tax sharing agreement, VNA receives tax sharing payments from its wholly owned subsidiaries. The subsidiaries comprise tax sharing groups that remit tax to VNA based on calculated tax as if each tax sharing group was filing on a stand-alone basis.

For purposes of these separate company financial statements, income tax expense is comprised of current and deferred components determined based on the activities and tax attributes of VNA on a stand-alone basis, applying the enacted regulations under the U.S. Internal Revenue Code as of the reporting date.

Deferred tax assets are recognized for unused tax losses and tax credits of VNA to the extent that these amounts will be utilized and realized. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and the level of future taxable profits, together with future tax planning strategies. The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

### *Share capital*

At December 31, 2016 and 2015, the Company had 16,000 shares authorized for issuance including 15,000 shares of common stock and 1,000 shares of preferred stock at par \$0.01 per share.

### *Foreign currency risk*

Foreign currency risk is the risk that the future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The Company's exposure to the risk of changes in foreign exchange rates relates primarily to intercompany loans denominated in currencies other than the U.S. Dollar.

### *Market risk*

Market risk is the risk that the future cash flows of a financial instrument will fluctuate because of changes in market prices. The Company's market risk is related to the interest rate risk as interest on the entity's financial instruments depends on the interest rate per annum for the offering of deposits in US Dollars in the London interbank market for a 3 month period comparable to the Interest Period (LIBOR 3M) of the financial instrument. Financial instruments affected by market risk include long-term loans received from and issued to affiliates, and cash and cash equivalents.

Veolia North America, Inc.  
Notes to Separate Company Financial Statements  
Years ended December 31, 2016 and 2015  
*(in thousands, unless otherwise indicated)*

## 2. Summary of Significant Accounting Policies (continued)

### *Liquidity risk*

Liquidity risk is defined as the risk that an entity will encounter difficulty in meeting obligations associated with its financial liabilities.

### *Standards issued not yet effective*

The standards and interpretations that are issued, but not yet effective, up to the date of issuance of these separate company financial statements are disclosed below. VNA intends to adopt these standards, as applicable, when they become effective.

### *IFRS 9, Financial Instruments*

In July 2014, the IASB issued the final version of IFRS 9, *Financial Instruments*, which replaces IAS 39, *Financial Instruments: Recognition and Measurement*, and all previous versions of IFRS 9. IFRS 9 brings together all three aspects of the accounting for the financial instruments project: classification and measurement; impairment; and hedge accounting. IFRS 9 is effective for annual periods beginning on or after January 1, 2018, with early application permitted. Except for hedge accounting, retrospective application is required, but providing comparative information is not compulsory. For hedge accounting, the requirements are generally applied prospectively, with some limited exceptions.

The Company plans to adopt the new standard on the required effective date. The Company is currently evaluating the impact of adopting IFRS 9 on these separate company financial statements, including (a) the requirement to evaluate contractual cash flow characteristics of financial instruments in order to determine appropriate classification and measurement; and (b) whether the impairment review performed relative to outstanding loans will need to be supported by more detailed analyses which considers reasonable and supportable information, including forward-looking elements to determine potential indicators of impairment.

### *IAS 7 Disclosure Initiative – Amendments to IAS 7*

The amendments to IAS 7, *Statement of Cash Flows*, are part of the IASB's Disclosure Initiative and require an entity to provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes.

On initial application of the amendment, entities are not required to provide comparative information for preceding periods. These amendments are effective for annual periods beginning on or after January 1, 2017, with early application permitted. Application of the amendments may result in additional disclosures to be provided in these separate company financial statements.

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**3. Investments in subsidiaries**

Investments in subsidiaries are represented by the following holding companies for various Veolia businesses in the United States:

Company name	Country of incorporation	Principal activity	Cost	Ownership interest held December 31, 2016	Ownership interest held December 31, 2015 <i>(unaudited)</i>	Ownership interest held January 1, 2015 <i>(unaudited)</i>
WASCO, LLC	United States	Design, build and operator of water treatment facilities	\$388,752	100%	100%	100%
Veolia Energy North America Holdings, Inc. (VENAH)	United States	District heating and cooling; energy consulting services	200,000	100%	100%	100%
Veolia Environmental Services North America Corp.(VESNA)	United States	Hazardous waste disposal and industrial cleaning	262,008	100%	100%	100%
Veolia North America, LLC	United States	Shared services center	--	100%	100%	100%
Veolia North America Regeneration Services, LLC (RGS)	United States	Sulfur acid treatment and regeneration services	97,000	100%	--	--
Kurion, Inc.	United States	Nuclear waste treatment services	--	100%	--	--
Aqua Alliance, Inc.	United States	Holding company for certain non-operating Water legacy entities	--	100%	100%	100%
Veolia Environnement North America Company (VENAC)	United States	Legacy activity holding company	<u>14,880</u>	100%	100%	100%
Total			<u>\$962,640</u>			

*Acquisition of Sulfuric acid regeneration services business*

In connection with the Company's acquisition of the sulfuric acid regeneration services business from Chemours in July 2016, VE issued a loan to the Company in the amount of \$325 million. In turn, VNA established Veolia North America Regeneration Services, LLC ("RGS"), a wholly owned subsidiary incorporated in Delaware, with an investment of \$97 million. In addition, the Company issued a loan to RGS in the amount of \$228 million during June 2016 (see Note 4 for additional information).

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**4. Long-term loans due from affiliates**

The Company has a portfolio of long-term loans due from affiliates as follows:

Borrower	Currency	Reference rate for variable interest	Spread	Issuance date	Maturity date	December 31, 2016	December 31, 2015	January 1, 2015
							<i>(unaudited)</i>	<i>(unaudited)</i>
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	1.00%	12/12/2007	12/31/2017	\$605,000	\$605,000	\$605,000
Kurion, Inc.	USD	LIBOR 3M	3.75%	04/01/2016	04/01/2026	363,600	-	-
Veolia North America Regeneration Services, LLC	USD	LIBOR 3M	2.50%	07/29/2016	07/29/2026	228,000	-	-
WASCO, LLC	USD	LIBOR 3M	2.50%	12/13/2012	12/13/2022	85,000	85,000	85,000
WASCO, LLC	USD	LIBOR 3M	3.00%	12/13/2012	12/13/2027	85,000	85,000	85,000
WASCO, LLC	USD	LIBOR 3M	2.00%	12/13/2012	12/13/2017	79,000	85,000	85,000
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	2.50%	10/01/2010	09/30/2020	74,000	74,000	74,000
Veolia ES Industrial Services, Inc.	USD	LIBOR 3M	2.00%	12/12/2013	12/13/2018	55,000	55,000	55,000
Veolia Water Technologies, Inc.	USD	LIBOR 3M	1.00%	01/01/2010	12/31/2020	50,000	50,000	50,000
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	2.50%	01/31/2014	01/31/2024	41,300	26,000	26,000
Veolia Environmental Services North America, LLC	USD	LIBOR 3M	3.75%	01/11/2016	10/31/2026	36,593	-	-
Veolia ES Canada, Inc.	CAD	CDOR 3M	2.50%	07/16/2013	07/15/2023	31,742	30,907	18,130
Veolia Water Technologies, Inc.	USD	LIBOR 3M	1.00%	12/29/2008	12/31/2018	30,500	30,500	30,500
Veolia Energy Cambridge Holding, Inc.	USD	LIBOR 3M	2.50%	03/31/2015	03/31/2025	29,700	29,700	-
Veolia Water Technologies, Inc.	USD	LIBOR 3M	3.50%	01/10/2013	01/09/2023	23,900	23,900	23,900
Veolia ES Canada Industrial Services, Inc.	CAD	CDOR 3M	2.50%	04/27/2012	04/27/2022	22,478	21,670	62,160
Veolia ES Industrial Services, Inc.	USD	LIBOR 3M	2.50%	12/12/2013	12/13/2023	15,000	15,000	15,000
Veolia Energy Atlantic Station, LLC	USD	Fixed interest rate	5.125%	09/01/2015	03/01/2026	11,565	12,435	-
Veolia Energy Canada, Inc.	CAD	CDOR 3M	3.75%	07/13/2015	07/13/2025	10,789	2,463	-
Veolia Energy North America Holdings, Inc.	USD	LIBOR 3M	2.50%	07/27/2012	07/27/2022	-	26,000	26,000
Total						<u>\$1,878,167</u>	<u>\$1,257,575</u>	<u>\$1,240,690</u>

All long-term loans due from affiliates are also charged a loan utilization fee of 0.35% which is charged in addition to the interest rates referenced above.



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**4. Long-term loans due from affiliates (continued)**

For purposes of the loan summary disclosed above, the referenced rates are defined as follows:

**USD Libor 3M** is defined as:

- (i) the interest rate per annum for the offering of deposits in US Dollars in the London interbank market for a 3 month period comparable to the Interest Period, as shown on the Reuters screen (or such other page or pages as may replace that service from time to time) at 11:00 (London time) on the Quotation Day (the **LIBOR USD Screen Rate**"); or
- (ii) if the LIBOR Screen Rate is not available, the arithmetic mean (rounded upward to four decimal places) as calculated by the Lender of the interest rates supplied to the Lender by the Reference Banks for the offering of deposits in the currency of the Loan to leading banks in the London interbank market for a period comparable to the relevant Interest Period and for an amount comparable to the Loan.];

**CDOR 3M** is defined as:

- (i) the Canadian dollar offered rate for the offering of deposits in CAD in the Canadian interbank market for a 3 month period comparable to the Interest Period displayed (before any correction, recalculation or republication by the administrator) on the "CDOR" page of the Thomson Reuters screen (or any replacement Thomson Reuters page which displays that rate) at 11:00 (the "CDOR Screen Rate"); or
- (ii) if the CDOR Screen Rate is not available, the arithmetic mean of the rates (rounded upward to four decimal places) as calculated by the Lender of the interest rates supplied to the Lender by the Reference Banks for the offering of deposits in CAD to leading banks in the interbank market on the Quotation Day for a period comparable to the Interest Period and for an amount comparable to the Loan;

Loans denominated in US dollars (USD) are issued to direct and indirect wholly owned subsidiaries of the Company in the United States. Loans denominated in Canadian dollars (CAD) are issued to affiliates of the Company located in Canada.

During May 2017, the Company committed to renew the following two loan agreements:

- \$605 million loan due December 31, 2017 - renewed for an additional 10 year period
- \$79 million loan due December 13, 2017 - renewed for additional 5 year period

Accordingly, these loans are also classified as noncurrent assets.

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**4. Long-term loans due from affiliates (continued)**

*Acquisition of Kurion, Inc. nuclear waste services business*

During 2016, VE provided short-term borrowings of \$363.6 million to the Company (see Note 6). In turn, VNA established Veolia Acquisition Sub, Inc. (“VAS”), a wholly owned subsidiary incorporated in Delaware with a nominal investment. In addition, the Company provided short-term borrowings of approximately \$363.6 million to VAS, in order to finance the acquisition of all outstanding shares in Kurion, Inc. (“Kurion”). The acquisition was accounted for as a reverse-merger, resulting in the dissolution of VAS and no investment being recorded by the Company.

In December 2016, the short-term borrowing due from Kurion was refinanced by the Company with a 10-year loan in the amount of \$363.6 million and due in December 2026.

*Acquisition of Sulfuric acid regeneration services business*

In July 2016, the Company provided a 10-year loan in the amount of \$228.0 million to its wholly owned subsidiary, RGS, to finance the acquisition of the sulfuric acid regeneration services business.

**5. Current amounts due to subsidiaries and current amounts due from affiliates**

The Company participates in the Veolia cash pooling system. As a result, the Company sweeps excess cash from (or provides cash funding to) its operating subsidiaries on a daily basis. In addition, VE periodically sweeps excess cash from (or provides cash funding to) the Company.

As a result, the Company has current liabilities for amounts due to certain subsidiaries relating to cumulative net cash swept. In addition, the Company also has current assets for amounts due from affiliates and/or relating to the Company’s excess cash which is swept by VE.

Depending on the current balance, there may be interest expense and interest income recorded by the Company relating to net cash swept from subsidiaries and the net amounts of cash remitted to VE, respectively. During 2016, interest was charged based on amounts outstanding at the Federal Funds Rate plus 0.50% plus a 0.35% utilization fee. Affiliate deposits with the Company are paid interest at the Federal Funds Rate plus 0.2% in 2016.

**6. Long-term loans due to affiliates**

In July 2016, the Company received proceeds of \$325.0 million from a long-term loan with VE Finance (a wholly-owned subsidiary of VE), in connection with the acquisition of the sulfuric acid regenerations services business (see Note 3). The long-term loan matures in July 2026 and bears interest on the outstanding principal at a per annum rate of 2.5% plus LIBOR 3M plus a 0.35% utilization fee.

In December 2016, the Company refinanced \$363.6 million of short-term borrowings due to VE (see Note 4) with a \$363.6 million long-term loan. This long-term financing is associated with the Company’s acquisition of Kurion, Inc. The long-term loan matures in December 2026 and bears interest on the outstanding principal at a per annum rate of 3.75% plus LIBOR 3M plus a 0.35% utilization fee.

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**7. Dividend income**

For the years ended December 31, 2016 and 2015, the components of dividend income received from the Company's operating subsidiaries were as follows:

Subsidiary	Division	2016	2015
			<i>(unaudited)</i>
WASCO	Water	\$ 62,600	\$ 90,600
VESNA	Environmental Services	42,670	33,200
VENAH	Energy	26,250	29,800
<b>Total</b>		<b><u>\$131,520</u></b>	<b><u>\$153,600</u></b>

**8. Net interest income**

For the years ended December 31, 2016 and 2015, the following amounts of interest income and interest expense were recorded on long-term loans due from (to) affiliates and on outstanding current amounts due from (to) affiliates:

	2016	2015
		<i>(unaudited)</i>
Interest income on long-term loans due from affiliates	\$45,193	\$28,418
Interest income on current amounts due from affiliates	8,733	1,948
	<u>53,926</u>	30,336
Interest expense on long-term loans due to affiliates	(6,115)	-
Interest expense on current amounts due to affiliates	(7,231)	(1,920)
	<u>(13,346)</u>	(1,920)
Net interest income	<u><u>\$40,580</u></u>	<u><u>\$28,446</u></u>

**9. Income taxes**

VNA files as the parent corporation of the U.S. consolidated tax group, which includes VNA and all of its wholly owned subsidiaries. VNA is obligated to pay all federal taxes when due on behalf of the consolidated group. In addition, VNA is also responsible to pay state taxes due where VNA files tax returns on a combined, consolidated, or unitary basis.

Within the framework of a group tax sharing agreement, VNA receives tax sharing payments from its wholly owned subsidiaries. The subsidiaries comprise tax sharing groups that remit tax to VNA based on calculated tax as if each tax sharing group was filing on a stand-alone basis.

For the years ended December 31, 2016 and 2015, the current and deferred components of the income tax benefit (expense) recorded were as follows:

	2016	2015
		<i>(unaudited)</i>
Current income tax benefit	\$46,352	\$28,335
Deferred income tax (expense)	(20,900)	(17,300)
	<u>\$25,452</u>	<u>\$11,035</u>

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**9. Income taxes (continued)**

For the years ended December 31, 2016 and 2015, the reconciliations of the federal statutory tax rate and the effective income tax rate for each year are as follows:

	<b>2016</b>	<b>2015</b>
		<i>(unaudited)</i>
Profit before tax	<b>\$93,729</b>	\$110,328
Income tax benefit (expense)	<b>25,452</b>	11,035
<b>Effective tax rate</b>	<b>27.2%</b>	10.0%
Federal statutory tax rate	<b>(35.0)%</b>	(35.0)%
Non-taxable dividend income	<b>49.1</b>	48.8
State and foreign taxes	<b>(1.7)</b>	5.1
Reversal of excess income tax payable	<b>13.5</b>	-
Other	<b>1.3</b>	(8.9)
<b>Effective tax rate</b>	<b>27.2%</b>	10.0%

*Deferred income taxes*

Deferred income taxes are generally recognized for differences between book and tax, or for other tax attributes such as net operating and capital losses which may be carried forward and utilized in future periods.

At each period end, the Company reviews the recoverable amount of deferred tax assets arising from deductible timing difference and from tax attributes which may be carried forward. Deferred tax assets relating to deductible timing differences and from tax attributes are not recognized, or may need to be reduced when required by the specific facts and circumstances, when:

- a) the forecast period and uncertainties regarding the economic environment no longer support realization;
- b) the utilization of tax attributes which may be carried forward becomes significantly uncertain;
- c) the forecast utilization period exceeds the carry forward period authorized by tax legislation; or,
- d) future taxable profits are uncertain due to other risks.

Deferred income taxes are adjusted for the effects of changes in prevailing tax laws and rates at the year end. Deferred income taxes are not discounted.

At December 31, 2016 and 2015, the components of deferred tax assets were as follows:

	<b>2016</b>	<b>2015</b>
		<i>(unaudited)</i>
Tax losses carried forward for U.S. federal tax purposes	<b>\$212,900</b>	\$234,200
Tax losses carried forward for state tax purposes	<b>26,600</b>	27,100
Tax credits carried forward	<b>15,300</b>	14,400
<b>Total</b>	<b>\$254,800</b>	\$275,700



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**9. Income taxes (continued)**

The Company's tax losses carried forward for U.S. federal tax purposes begin to expire in 2026. The Company's tax losses carried forward in certain state jurisdictions begin to expire in years 2021, 2022 and 2026. The tax credits may be carried forward and utilized indefinitely.

**10. Commitments and contingencies**

*Legal proceedings*

From time to time and in the normal course of business, the Company may be involved in various litigation, as described below. Management has evaluated the litigation below and concluded that a loss is not probable or estimable.

*United States - Water - Flint*

In April 2014, the emergency manager ("Emergency Manager") in charge of the City of Flint, Michigan, ordered that it switch its water supply source (previously provided from Detroit) and begin treating Flint River water for distribution to its residents. Soon after, Flint residents began to complain about the water's odor, taste and appearance. Between August 2014 and December 2014, Flint experienced a number of water quality issues resulting in violations of National Primary Drinking Water Regulations, including Total Trihalomethanes (TTHM, which are disinfection byproducts) maximum contaminant level violations.

In February 2015, Flint hired Veolia Water North America Operating Services, LLC ("VWNAOS") for an analysis related to residual effects of the chlorination process (TTHM), discoloration and taste and odor issues. The scope of this approximately four-week analysis did not include lead and copper tests.

On February 18, 2015, VWNAOS issued an interim report, which included a statement that the drinking water was "safe" in that it complied "with state and federal standards and required testing". During a public meeting that was organized by the Flint City Council Public Works Committee in relation to VWNAOS's interim report, VWNAOS employees communicated to the public information from the report. The City had previously informed VWNAOS that the City, not VWNAOS, would be conducting lead testing.

On March 12, 2015, VWNAOS delivered its final report to Flint, which was then made available to the public. In its final report, VWNAOS included a broad set of recommendations to address TTHM compliance and improve water quality related to odor and discoloration. It would appear that many of these recommendations were ignored by the local authorities.

On June 24, 2015, the U.S. Environmental Protection Agency issued a memorandum summarizing the available information regarding activities conducted by the City of Flint and several governmental agencies in response to high lead levels in City drinking water reported by a Flint resident.

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**10. Commitments and contingencies (continued)**

On October 21, 2015, the office of the Governor of the State of Michigan commissioned the Flint Water Advisory Task Force, a consulting group made up of experts in a variety of disciplines, to conduct an independent review of the Flint water crisis, including lead contamination.

On March 21, 2016, the Flint Water Advisory Task Force issued its final report, drafted after interviewing numerous individuals and reviewing many documents. The Task Force reported in its conclusion that responsibility for the Flint water crisis rested largely with several governmental agencies and the City of Flint. Notably, the report highlighted that the Michigan Department of Environmental Quality and the City of Flint did not require and implement corrosion control at the time of the change of water supply source, contrary to what was required under the US Environmental Protection Agency's Lead & Copper Rule to avoid contamination of drinking water with those metals. A total of fifteen current or former state and local officials and employees have been charged with criminal conduct for their parts in causing or exacerbating the Flint water crisis.

Since February 2016, numerous individual complaints and putative class actions have been filed in state and federal courts in Michigan by Flint residents and companies against a number of defendants, including the State of Michigan, the Michigan Department of Environmental Quality, VWNAOS, Veolia North America, Inc. (VNA Inc.), and Veolia North America, LLC (VNA LLC).

Flint residents allege injury and damages by exposure to toxins, including lead, contained in the Flint municipal water supply and have levied accusations of professional negligence and fraud against VWNAOS, VNA Inc., and VNA LLC. One or more of VWNAOS, VNA Inc. and VNA LLC have been named in about a dozen putative class actions and in many hundreds of individual cases. To date, none of the courts in which putative class actions have been filed has ruled on whether or not the case may properly proceed as a class action.

On June 22, 2016, the State of Michigan's Attorney General filed a civil action against several defendants, including VWNAOS, VNA Inc. and VNA LLC, for their alleged role in the Flint water crisis. The Attorney General subsequently dismissed that initial action, and filed a new civil action on August 16, 2016. Among other allegations, the Attorney General refers to the interim report delivered by VWNAOS. The Attorney General alleges that the acts and omissions of VWNAOS, VNA Inc. and VNA LLC constituted professional negligence and fraud.

VWNAOS, VNA Inc., and VNA LLC strongly contest the merits of all these legal proceedings. No amounts have been recorded relating to these matters based on current information available and management's evaluation that a contingent loss is neither probable, nor more likely than not, and estimable.

These lawsuits have been reported to the insurers, who have reserved their rights.

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**10. Commitments and contingencies (continued)**

*U.S. tax audits and Worthless Stock Deduction*

In the normal course of business, the Company is subject to regular tax audits. The tax authorities have carried out various tax audits in respect of both the U.S. consolidated tax group and individual entities.

On March 10, 2010, VNA received notices of proposed adjustments (“NOPAs”) from the Internal Revenue Service (IRS) relating to a number of tax positions taken on U.S. consolidated federal income tax returns, including tax losses resulting from a reorganization of the former U.S. Filter operating subsidiary of VNA (“Worthless Stock Deduction”) in the amount of \$4.5 billion (tax base). The NOPAs also relate to certain other issues pertaining to various tax positions taken for the 2004, 2005 and 2006 tax years. The NOPAs are preliminary assessments that do not reflect a definitive conclusion and are subject to change.

Since 2010, the Company continues to discuss the NOPAs with the IRS with a view to resolving or narrowing the issues and the issuance of a formal assessment notice for any unresolved issues, which could be appealed within the IRS or in a court. As of December 31, 2016, the remaining NOPAs, before any penalties, relate to the Worthless Stock Deduction. As the NOPAs are still subject to the continuing IRS audit process, there is no requirement at this time for any payment of taxes. Based on information currently available, the Company has not recorded any liabilities in respect of the NOPAs but has recorded a deferred tax asset which is being utilized against the taxable income of the U.S. consolidated tax group. At December 31, 2016, the deferred tax assets recorded in the statement of financial position include a portion of these tax losses which may be carried forward and have been determined by management to be realizable prior to expiration.

Furthermore, an IRS examination is ongoing in respect of the U.S. consolidated tax returns filed for years 2007 and 2008. Another IRS examination is ongoing covering U.S. consolidated tax returns filed for years 2009 to 2011. Finally, an IRS examination covering U.S. consolidated tax returns filed for years 2012 and 2013 has also been initiated recently. These IRS examinations are ongoing and no revised assessments or proposed adjustments have been received to date.

*Off balance sheet commitments*

Commitments given by the Company total approximately \$96 million as of December 31, 2016 and consist of performance or financial guarantees given on behalf of its subsidiaries as follows:

- a) Standby letter of credit provided as collateral for its general liability, workers compensation and other insurance programs for its subsidiaries in the United States.
- b) Company performance guarantees provided on behalf of one of its owned subsidiaries for the operations and maintenance services on contracts.
- c) Other standby letters of credit on behalf of its owned subsidiaries.

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**11. Financial liabilities**

The tables below summarize the maturity profile of the Company's financial liabilities at December 31, 2016 and December 31, 2015, as well as January 1, 2015, based on contractual undiscounted payments (including future interest payments).

	<b>On demand or less than 1 year</b>	<b>1 to 5 years</b>	<b>Over 5 years</b>	<b>Total</b>
<b>As of December 31, 2016</b>				
Long-term debt due to affiliates	\$ –	\$ –	\$688,600	\$ 688,600
Payables due to affiliates	594,838	–	–	594,838
Accrued liabilities	4,562	–	–	4,562
	<b>\$599,400</b>	<b>\$ –</b>	<b>\$688,600</b>	<b>\$1,288,000</b>

<b>(unaudited)</b>	<b>On demand or less than 1 year</b>	<b>1 to 5 years</b>	<b>Over 5 years</b>	<b>Total</b>
<b>As of December 31, 2015</b>				
Payables due to affiliates	\$433,581	\$ –	\$ –	\$433,581
Accrued liabilities	17,118	–	–	17,118
	<b>\$450,699</b>	<b>\$ –</b>	<b>\$ –</b>	<b>\$450,699</b>

<b>(unaudited)</b>	<b>On demand or less than 1 year</b>	<b>1 to 5 years</b>	<b>Over 5 years</b>	<b>Total</b>
<b>As of January 1, 2015</b>				
Payables due to affiliates	\$456,766	\$ –	\$ –	\$456,766
Accrued liabilities	15,226	–	–	15,226
	<b>\$471,992</b>	<b>\$ –</b>	<b>\$ –</b>	<b>\$471,992</b>

**12. Transactions with related parties**

Transactions between related parties may not be effected on the same terms, conditions and amounts as transactions between unrelated parties. The management considers that the VNA Inc. has appropriate policies and procedures in place to identify, account and properly disclose transactions with related parties.

The nature of the related party relationships for those related parties with whom the VNA Inc. entered into significant transactions during the years ended December 31, 2016 and 2015 or had significant balances outstanding at December 31, 2016 and December 31, 2015 or January 1, 2015 are detailed below.



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**12. Transactions with related parties (continued)**

At December 31, 2016, the outstanding balances with related parties were as follows:

	<b>Subsidiaries</b>	<b>Other affiliates</b>	<b>Total</b>
Long-term loans receivable due from affiliates	<b>\$1,813,158</b>	<b>\$65,009</b>	<b>\$1,878,167</b>
Current amounts due from affiliates	<b>146,481</b>	<b>40,126</b>	<b>186,607</b>
Income tax receivable due from affiliates	<b>17,747</b>	–	<b>17,747</b>
Long-term debt due to affiliate	–	<b>(688,600)</b>	<b>(688,600)</b>
Payables due to affiliates	<b>(588,723)</b>	<b>(6,115)</b>	<b>(594,838)</b>
Income tax payable due to affiliates	<b>(765)</b>	–	<b>(765)</b>

At December 31, 2015, the outstanding balances with related parties were as follows (unaudited):

	<b>Subsidiaries</b>	<b>Other affiliates</b>	<b>Total</b>
Long-term loans receivable due from affiliates	\$1,202,535	\$55,040	\$1,257,575
Current amounts due from affiliates	71,909	30	71,939
Income tax receivable due from affiliates	7,330	–	7,330
Payables due to affiliates	(432,021)	(1,560)	(433,581)
Income tax payable due to affiliates	(883)	–	(883)

At January 1, 2015, the outstanding balances with related parties were as follows (unaudited):

	<b>Subsidiaries</b>	<b>Other affiliates</b>	<b>Total</b>
Long-term loans receivable due from affiliates	\$1,160,400	\$80,290	\$1,240,690
Current amounts due from affiliates	35	111,389	111,424
Income tax receivable due from affiliates	14,355	–	14,355
Payables due to affiliates	(456,663)	(103)	(456,766)
Income tax payable due to affiliates	(305)	–	(305)

For the year ended December 31, 2016, transactions with related parties recognized in the statement of comprehensive income were as follows:

	<b>Subsidiaries</b>	<b>Other affiliates</b>	<b>Total</b>
Dividend income	<b>\$131,520</b>	<b>\$ –</b>	<b>\$131,520</b>
Management fee	<b>(71,208)</b>	<b>–</b>	<b>(71,208)</b>
Interest income	<b>51,326</b>	<b>2,600</b>	<b>53,926</b>
Interest expense	<b>(2,858)</b>	<b>(10,488)</b>	<b>(13,346)</b>

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**12. Transactions with related parties (continued)**

For the year ended December 31, 2015, transactions with related parties recognized in the statement of comprehensive income were as follows (unaudited):

	<b>Subsidiaries</b>	<b>Other affiliates</b>	<b>Total</b>
Dividend income	\$153,600	\$ -	\$153,600
Management fee	(71,384)	-	(71,384)
Interest income	27,976	2,390	30,366
Interest expenses	(1,365)	(555)	(1,920)

For the year ended December 31, 2016, cash receipts from and cash payments to related parties were as follows:

	<b>Subsidiaries</b>	<b>Other affiliates</b>	<b>Total</b>
Dividends received	<b>\$ 131,520</b>	\$ -	<b>\$131,520</b>
Dividends paid to VE and affiliates	-	<b>(131,520)</b>	<b>(131,520)</b>
Proceeds from long-term loans due to VE	-	<b>688,600</b>	<b>688,600</b>
Issuance of long-term loans	<b>(643,494)</b>	<b>(8,204)</b>	<b>(651,698)</b>
Receipts from long-term loans	<b>32,870</b>	-	<b>32,870</b>
Tax sharing receipts from subsidiaries	<b>28,972</b>	-	<b>28,972</b>
<u>Cash pooling</u>			
Total cash swept from subsidiaries	<b>82,130</b>	-	<b>82,130</b>
Total cash remitted to VE	-	<b>(37,557)</b>	<b>(37,557)</b>

For the year ended December 31, 2015, cash receipts from and cash payments to related parties were as follows (unaudited):

	<b>Subsidiaries</b>	<b>Other affiliates</b>	<b>Total</b>
Dividends received	\$153,600	\$ -	\$153,600
Dividends paid to VE	-	(153,600)	(153,600)
Issuance from long-term loans	(42,135)	(20,600)	(62,735)
Receipts from long-term loans	-	34,091	34,091
Tax sharing receipts from subsidiaries	41,224	-	41,224
<u>Cash pooling</u>			
Total cash swept from subsidiaries	96,515	-	96,515
Total cash remitted to VE	-	(122,924)	(122,924)

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**13. Events after the reporting date**

On January 9, 2017, the Company's wholly owned subsidiary, Veolia Energy North America Holdings, Inc. ("VENAH"), acquired Enovity, Inc. ("Enovity"), a San Francisco-based energy consulting services firm. Enovity complements Veolia's existing energy consulting services business in the United States and provides a platform for building energy consulting services. To finance the acquisition, the Company borrowed \$27 million from VE under a 10 year long-term loan and, in turn, loaned \$27 million to VENAH under a 10 year long-term loan with the same terms.

There were no other subsequent events required to be recognized or disclosed in these separate company financial statements.

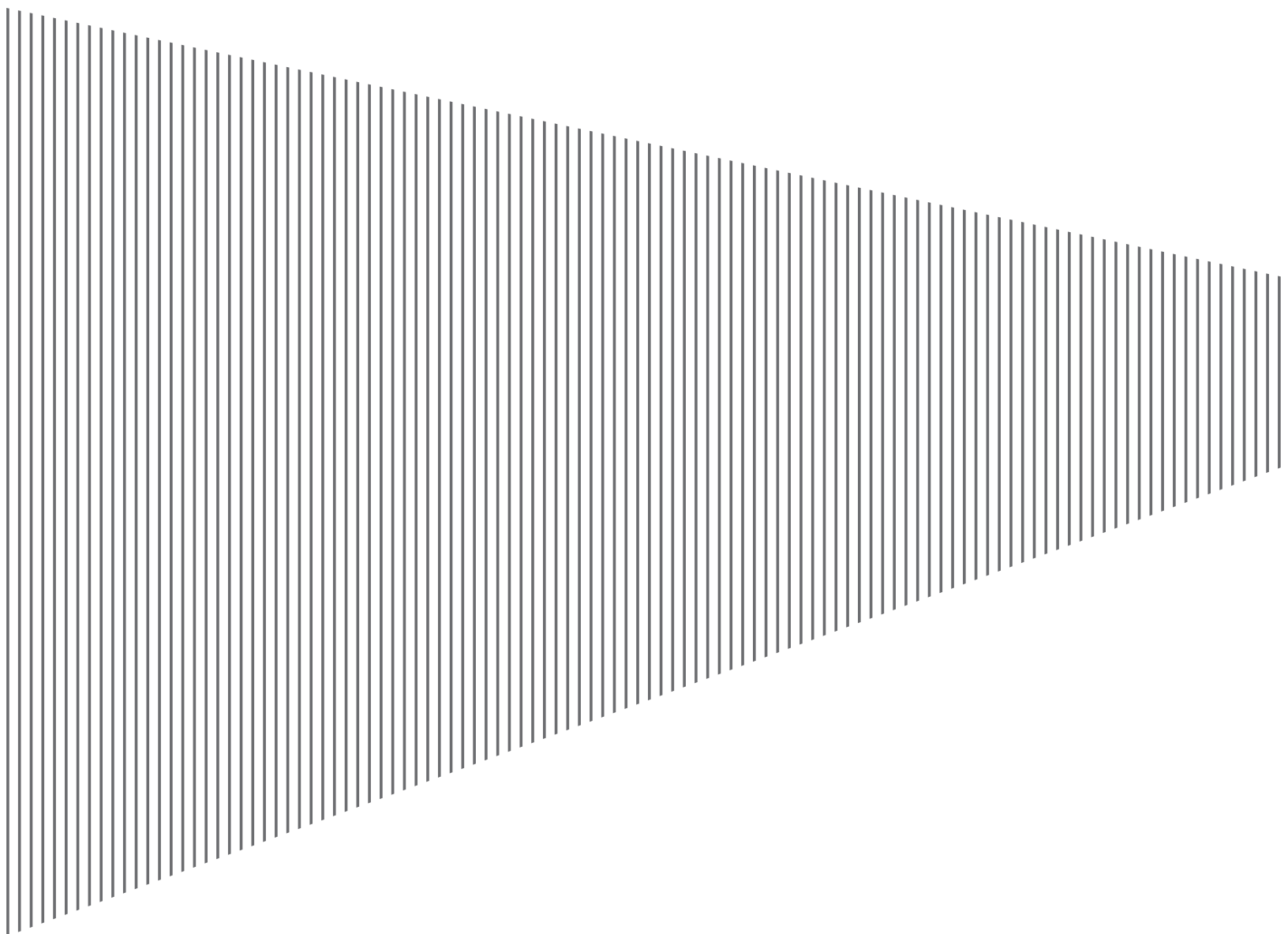
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