

2017 Alexandria Renew Enterprises Annual Report  
Transforming Water to Transform Our Community



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## Clean Water: It Defines Our Community

A walk along the waterfront, a ride in a water taxi, an afternoon of fishing on the Potomac River, and even a visit to a local restaurant are all pleasures we're able to enjoy, as long as we have a healthy water system.

Clean water enables Alexandria to thrive in so many ways. It is an integral component of our community's well-being and economic growth, and critical to sustaining future generations. Yet clean water doesn't just happen; we have to make it happen. Working together as a community of water champions and a skilled team of water transformers, we ensure our waterways are clean. Alexandria Renew Enterprises (AlexRenew) is committed to maintaining sustainable and cost-effective wastewater services, and is proud to be an active partner in our region's vibrant water system.

2017 was a year for innovation at AlexRenew. While staying focused on our primary mission of protecting public and environmental health, we invested in new ideas and technologies to continuously improve.

In 2017, we used our clean water product, BluRenew, for irrigating our outdoor landscaping and our interior living wall; for toilet flushing in our restroom facilities; for heating and cooling on our water cleaning campus; and for our eye-catching 7,000 gallon aquarium in our water education lobby. BluRenew preserves precious drinking water resources in our community while maximizing your investment in water. The methane gas generated from our water cleaning process reduces our need for natural gas, and our solids removal process produces a Class-A Exceptional Quality fertilizer, used by Virginia farmers to enrich their fields.

We were the first in the nation to begin continuous operation of a Mainstream Anammox process, an advanced approach to cleaning water using naturally-occurring microbes that lessen our need for chemicals and energy. This helps us reduce greenhouse gas emissions and truck traffic, and helps us keep rates stable.

In our role as a water steward for our community, we return exceptional quality water to the Potomac River. This outstanding performance by our team is recognized annually by the National Association of Clean Water Agencies (NACWA) through its Peak Performance awards program.

AlexRenew strives to make water as interesting and exciting to each member of our community as it is to each of our team members. We listened to our Carlyle neighbors, investing in the first Platinum LEED building constructed in Alexandria. This building hosts many diverse visitors who are interested in learning how to be better environmental stewards.

AlexRenew's outreach extends far beyond the confines of our campus, and we continue to look for opportunities to interact with those we serve. Last year, we completed construction on a water education exhibit along the fence that surrounds our renovated Four Mile Run Pump Station. This interactive display invites passersby to learn about how we clean Alexandria's water, and to understand why there is a pump station in their neighborhood.

Transforming dirty water into clean water and recovering usable resources would not be possible without our skilled and dedicated team. For more than 60 years, AlexRenew has continuously operated every hour of every day, 365 days a year, to serve the residents of Alexandria.

But there are always new challenges on the horizon, and 2018 is shaping up to be a big year for our organization. AlexRenew is partnering with the City of Alexandria to explore methods that would improve sewer infrastructure to more effectively meet new Virginia legislative requirements regarding the combined sewer system located in Old Town. This partnership will allow AlexRenew to have a direct role in improving our community's water quality for decades to come.

By transforming water to transform our community, we work together to keep our city physically and economically healthy and vital. We are proud to serve you, and look forward to our continuing relationship with you in creating a sustainable water future for Alexandria.



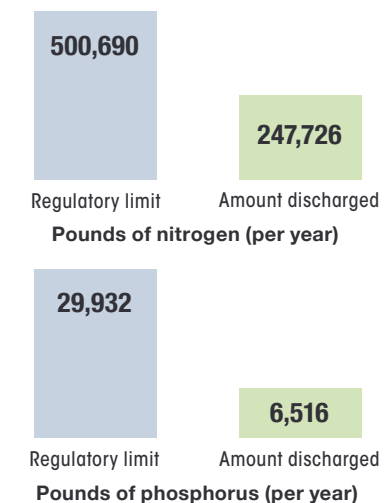
From left to right: *Karen Pallansch, CEO; John Hill, Chairman; Bruce Johnson, Vice Chairman; James Beall, Member; Patti Turner, Member; and Bruce Dickinson, Treasurer.*

## 2017 Operational Excellence

*Improving our environment while managing our costs*

### 12 Years of Platinum-Level Performance

In 2017, AlexRenew was recognized for consistent superior performance in cleaning our community's water. For the 12th consecutive year, our facility earned the NACWA Platinum Peak Performance Award for 100 percent compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements.



### Removing More Nutrients for Even Cleaner Water

AlexRenew removed 99.5% of phosphorus and 95% of nitrogen from the water we cleaned, exceeding regulatory levels during the past year.

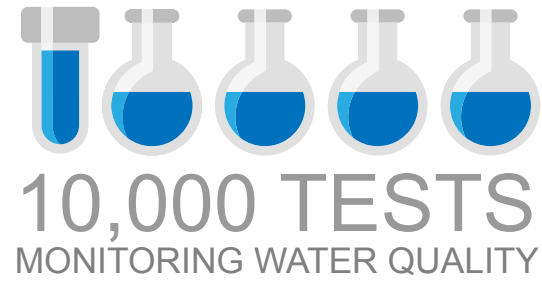
Removing higher levels of nitrogen and phosphorus allows fish, shellfish, and plants to live and thrive in our local waterways. As a result, our community can enjoy fishing and other water-related recreational activities.



*We use innovative technology to closely monitor our water-cleaning infrastructure, and to clean water efficiently.*

### Monitoring Water Quality

Our team carefully monitors water quality throughout our entire cleaning process, even after it is discharged into the Potomac River, to ensure that your investment in AlexRenew yields a return of cleaner waterways.



In 2013, George Mason University’s Potomac Environmental Research and Education Center (PEREC) started studying Hunting Creek, where we release our cleaned water back into the Potomac River. PEREC collaborates with AlexRenew to study water ecology and health. The PEREC research team samples water, fish, and macrovertebrate populations from April to September at multiple sites in and around Hunting Creek. This past year, PEREC’s research found biological communities in Hunting Creek that reflect a healthy ecosystem. Researchers also discovered river herring – a species whose population had been in decline – spawning at the head of the tide in Cameron Run, which flows directly into Hunting Creek.



*GMU PEREC staff collecting samples along Hunting Creek.*



*River Herring were found spawning at the head of the tide in Cameron Run in 2017.*

### Enriching Farmers’ Soil

The dirty water we receive at our facilities yields practical benefits for Virginia’s farming community. AlexRenew separates biological organics from the water during our cleaning process. We then pasteurize the organic solids to eliminate germs before delivering them to farms throughout Virginia. 50 farms in 18 counties spread 5,500 dry tons of our organic fertilizer on their fields during 2017 to enrich the soil and help plants grow.

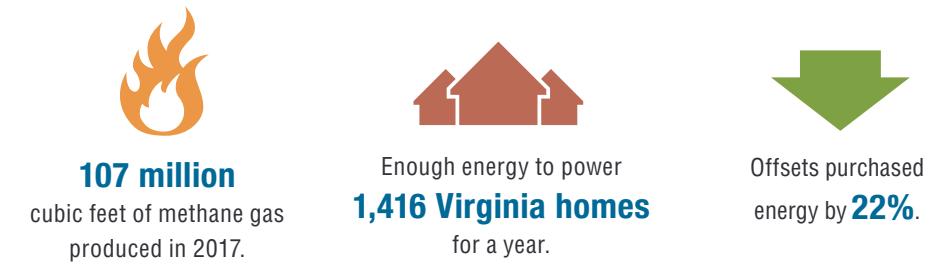


*Spreading the good throughout Virginia.*

### Reducing and Producing Energy to Support Stable Rates

In order to manage our operational costs and keep your rates stable, we find new ways to minimize our energy use each year. We use microbes to digest the sludge that’s in the wastewater, a process that produces methane gas. We capture the methane gas from our solids-processing digester facilities, which offsets our need for natural gas by almost 25% of our total need.

AlexRenew received an Operations and Environmental Performance National Environmental Achievement Award (NEAA) from NACWA in 2017 for the results of our energy savings program.



*Our digesters are the home of microbes that break down organic matter in the water and produce gas that we collect and use as energy.*



How Alexandria's Water Partners Work Together



In our community, Virginia American Water, the City of Alexandria, and AlexRenew work together to ensure community health, economic vibrancy, and clean waterways. Virginia American Water delivers drinkable water to our community. The City collects used, dirty water from our community's homes and businesses, and AlexRenew's superhighway of underground pipes convey it to our water resource recovery facility where our skilled technicians transform it into clean water and byproducts using energy-saving and sustainable methods.

Providing a Training Ground for our City's First Responders

AlexRenew is proud to support Alexandria's Fire and Police Departments by sharing our facilities for training each year. Our campus, which includes multi-level buildings and tunnels, provides a natural and realistic setting in which safety and emergency response personnel can conduct drills, train police dogs, and practice rescue procedures. This helps our first responders strengthen their skills and readiness to protect and serve the community.



The Alexandria Police Department trains its police dogs on our campus.

Working Together to Support a Thriving Community



AlexRenew partners with many organizations across Alexandria and the water industry to strengthen our community's understanding of the importance of clean water, and we frequently venture out into the community to share our clean water knowledge with Alexandria residents. Many AlexRenew employees volunteer with the Eisenhower Partnership, Alexandria Chamber of Commerce, Metropolitan Washington Council of Governments, and First Night Alexandria, and we often support these groups by promoting and participating in their events. We partnered with Alexandria's drinking water supplier, Virginia American Water, to participate in the Value of Water Campaign's *Imagine a Day Without Water* event last fall, reminding King Street Metro riders of the importance of clean water. These partnerships and events foster water stewardship throughout our community.



We encourage our community partners to convene in the meeting and event spaces that occupy the sixth floor of our Environmental Center.

Urban Alliance Foundation Partnership

Through our longstanding relationship with the Urban Alliance Foundation, we have hosted five T.C. Williams High School student interns at AlexRenew. The Urban Alliance Foundation empowers underserved young people to aspire, work, and succeed through paid internships, formal training, and mentoring. Our Human Resources team coordinates and mentors these students throughout a seven-month program. All of our interns have attended college, with some pursuing careers in environmental science.



Hector Gomez was our 2017 Urban Alliance intern.



Eco-City Clean Waterways

Eco-City Clean Waterways is a partnership between AlexRenew and the City of Alexandria. About 540 of the 15,000 acres that comprise Alexandria are served by a legacy "combined sewer system." While state-of-the-art in the 1700s and 1800s, the current system allows stormwater mixed with sewage to overflow into our waterways during rain events. Together, we are undertaking a multi-year project to solve this problem and improve water quality for decades to come.



## 2017 Incubator of New Ideas and Innovations

Implementing ideas and technologies that result in a cleaner environment

### Anammox Microbes Enhance Our Water Transformation Process

An important part of our investment program is our implementation of Mainstream Anammox, an innovative process that saves energy and money. Anammox are tiny, naturally occurring bacteria that help remove nitrogen pollution from wastewater, improving its quality before we release the treated water back to the Potomac River and Chesapeake Bay. The process that incorporates the use of anammox, called deammonification, removes the nitrogen from dirty water while reducing our use of chemicals and saving energy. In 2017, we reduced chemical use by 50%, reducing the number of trucks and thereby minimizing our impact on local transportation infrastructure.



Anammox bacteria, also called red bugs, help AlexRenew naturally remove nitrogen pollution from water, reducing our need for chemicals.



### SANUP Project Excellence Award

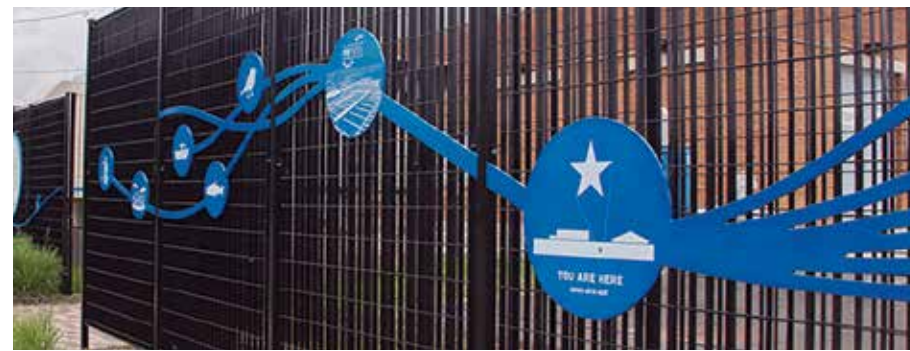
AlexRenew's State-of-the-Art Nitrogen Upgrade Program (SANUP) continues to enhance our treatment process, helping us meet stricter standards in removing excess nutrients from the water we return to the Potomac River. SANUP enables us to reduce the nitrogen we discharge into the Potomac River by an additional 20% annually. The Water Environment Federation (WEF) awarded AlexRenew its Project Excellence Award in 2017 in recognition of the project's future value to the water sector, sustainability, innovation, and the well-being of surrounding communities. The centerpiece of SANUP is an 18-million gallon Nutrient Management Facility (NMF) topped by Limerick Street Field, a multi-purpose public athletic field managed by the City of Alexandria.



Limerick Street Field sits on top of our Nutrient Management Facility.

### Walking and Learning

This year, AlexRenew completed the installation of an interactive water education exhibit along the fence that surrounds our Four Mile Run Pump Station. We solicited members of the surrounding community for input before creating the exhibit, which is located by the recreational trail next to the Cora Kelly School for Math, Science and Technology on Commonwealth Avenue. Ten interactive water education stations were designed to inform citizens about the process we use to clean water. The exhibit demonstrates how Alexandria's water system works, and how we can all be water champions.



We installed interactive education stations around our Four Mile Run Pump Station fence.

## 2017 Enhancing Organizational Competency

Achieving long-range objectives with a team that learns, adapts, and innovates

### A Skilled Workforce to Serve Alexandria



### Every Employee at AlexRenew is a Problem Solver

Every day, we have more than 100 professional, technical, and administrative staff ensuring that the more than \$1 billion our customers have invested in AlexRenew over the past 61 years yields a positive return: operational excellence and clean waterways. We also take great pride in the fact that over 40% of our employees have worked at AlexRenew for more than 20 years, ensuring that our community has a highly qualified and experienced workforce to clean dirty water.



At AlexRenew, our team members find solutions that are critical to meeting our ultimate goal of cleaning millions of gallons of water every single day, consistently, and without interruption.

### Community Rebuilder Wins Ellen Pickering Award

Each year since 2009, the City of Alexandria Environmental Policy Commission has partnered with AlexRenew to recognize Alexandria citizens and organizations that demonstrate an uncommon commitment to protecting the environment and preserving our natural resources. Together, we present the Ellen Pickering Environmental Excellence Award to a deserving individual or group. The award is named in honor of Frances Ellen Pickering, in recognition of her lifelong dedication to preservation and conservation in Alexandria. Mrs. Pickering was a dedicated environmental advocate, a 15-year member of the Alexandria Sanitation Authority Board of Directors, and a leader in establishing the Mount Vernon Trail between Alexandria and Washington, DC over 30 years ago.

AlexRenew and the City of Alexandria Environmental Policy Commission awarded Katharine Dixon, President and Chief Executive Officer of Rebuilding Together Alexandria, the 2017 Ellen Pickering Environmental Excellence Award.



AWARD WINNERS  
Ellen Pickering  
Environmental  
Excellence



Katharine Dixon (left), 2017 Ellen Pickering Environmental Excellence Award winner.



### Alexandria Earth Day Celebrates Clean Water

With the theme "Clean Water Starts with You," the AlexRenew team participated in Earth Day and, through games and experiments, demonstrated how our community can keep local waterways clean. AlexRenew has participated in the Alexandria Earth Day Celebration every year for over 20 years.



The AlexRenew team participated in Earth Day 2017.

### Water Discovery Day

In May, we hosted our first Water Discovery Day event by welcoming hundreds of you, our neighbors, to our campus to foster your personal connection with our waterways. The event highlighted how Alexandria's water system functions by demonstrating where our water comes from, what happens to it after it is used, and why clean water is a vital resource for the health and prosperity of our community.



The City of Alexandria hosted a rain barrel workshop during Water Discovery Day.



You're never too young to learn about water!



In the Discovery Lab, attendees learned how microbes help AlexRenew transform dirty water.

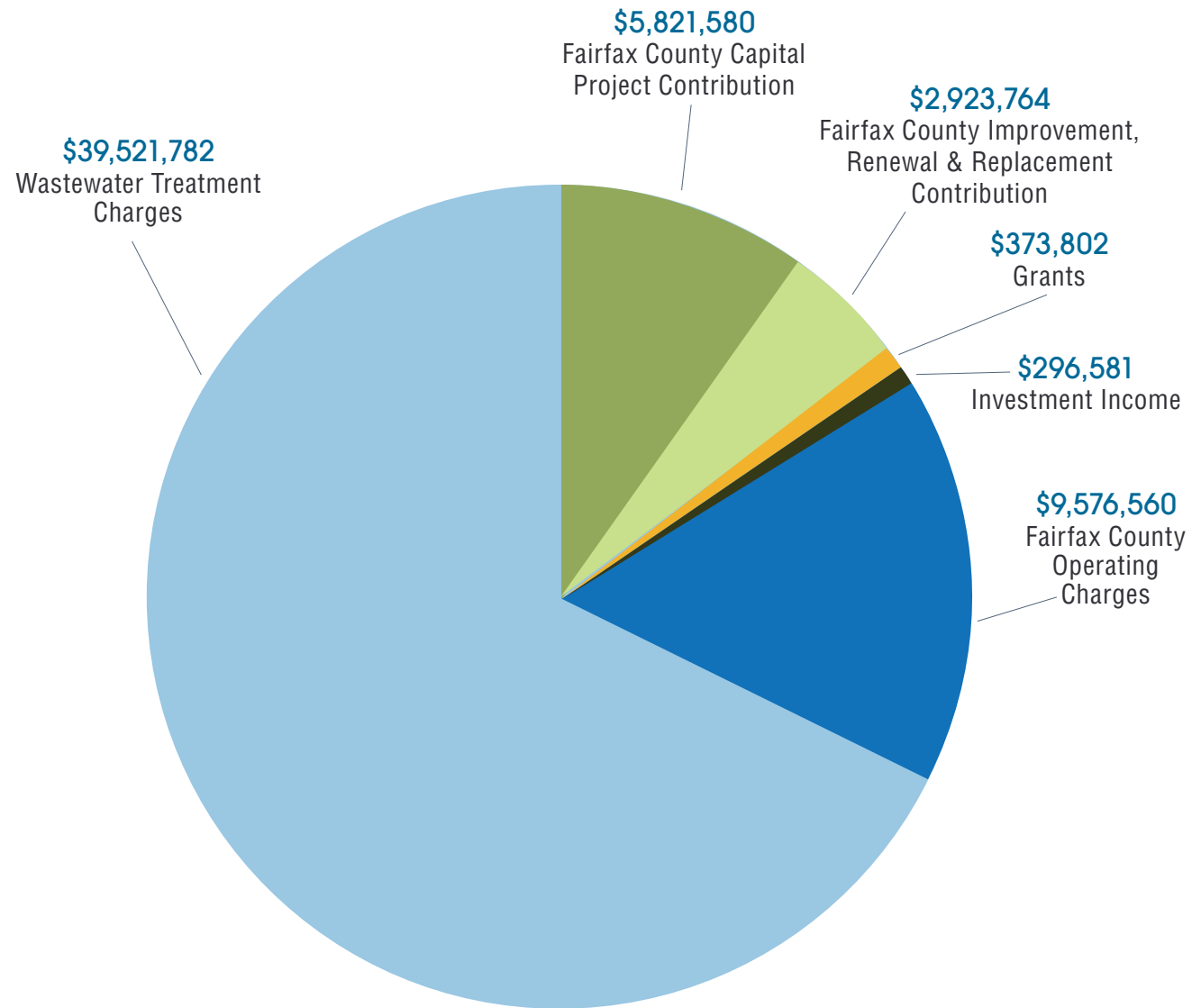


Families experienced hands-on fun while learning more about Alexandria's water system and clean water, our earth's most precious resource.



## 2017 Revenue Stewardship

Ensuring financial stability and minimizing the impact on our customers through revenue stewardship



## 2017 How AlexRenew Invests Your Dollars into Clean Water



**\$3,296,798**

### Improvement, Renewal & Replacement

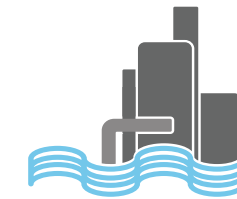
Repairing and replacing critical equipment and infrastructure so we can continue to clean water effectively and efficiently for our customers.



**\$10,260,911**

### Capital Improvements

Investments in capital infrastructure improvements to meet our chartered objectives.



**\$731,483**

### Arlington Sewage Disposal

Supporting the operations and maintenance associated with the City of Alexandria's allocated wastewater treatment for a small portion of Alexandria in the Arlington County Water Pollution Control Plant.



**\$12,234,757**

### Organizational Competency

Providing best-in-class water professionals for effective and safe operations.



**\$1,423,932**

### Watershed Partnerships

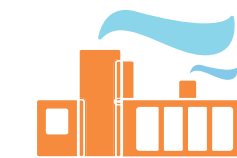
Obtaining specialized, expert services to support AlexRenew's core function of cleaning water for our customers.



**\$624,163**

### New Ideas & Innovations

Continually improving existing processes while investing in new technology to be good water and economic stewards.



**\$4,803,354**

### Operational Excellence

Costs for the energy, chemicals, and other resources needed to transform our water.



**\$1,288,920**

### Community Benefit

Customer service and education functions to share the benefits of clean water in our community.



**\$1,627,055**

### Revenue Stewardship

Maintaining our infrastructure and technology to most efficiently and effectively clean dirty water.



**\$13,589,224**

### Debt Principal & Interest Payments

The repayment of loans necessary to fund the expansion and maintenance of our water resource recovery facility.





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Alexandria Renew Enterprises  
1800 Limerick Street, Alexandria, VA 22314  
703-549-3381 • alexrenew.com

