

Renewing the Water Industry

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Karen Pallansch, CEO

Alexandria Renew Enterprises



Who is AlexRenew?

We are Alexandria's Water Transformers.



Alexandria Renew Enterprises



Alexandria's Water Transformers



Every year at Alexandria Renew:



Water

We clean more than 13 billion gallons of wastewater.



Reclaimed Water

We reuse 1.4 billion gallons of water to run our equipment.



Land

We generate more than 20,000 tons of biosolids to help farmers enrich their soil.



Energy

We create over 150 million cubic feet of renewable methane gas – enough energy to heat 800 homes!



Alexandria Renew Enterprises



Alexandria's Water Transformers

- Advanced water resource recovery facility
- Urban facility located in the Chesapeake Bay watershed
- Clean about 36 million gallons of wastewater daily
- Serve over 300,000 customers in Alexandria and Fairfax County
- Own pump stations, intercepting sewers, and wastewater treatment facility
- A political subdivision of the Commonwealth of Virginia created in 1952



Who We Are

Alexandria's Water Transformers



INNOVATOR

- Energy efficiency programs
- State-of-the-Art Nutrient Upgrade Program
- Process automation and probes
- Industry-leading technologies



TRANSFORMER

- Class A Biosolids applied on Virginia farm fields
- Methane capture and use offsets purchased natural gas
- Reuse of effluent water and reclaimed water offsets purchased drinking water



GOOD NEIGHBOR

- 0 permit violations in 12 years
- Advanced odor control
- Community spaces
- Stable rates for our customers
- Partner to monitor waterway health
- Robust communications programs



PROBLEM SOLVER

- Designed for 54 mgd on just 33 acres
- Remove 99.2% of phosphorous and 95% of nitrogen
- Apprenticeship program
- South Carlyle Strategy
- Rebranded from Alexandria Sanitation Authority

Who We Are

Alexandria's Water Transformers

- Over 100 dedicated public stewards
- High and Middle Skill Jobs
 - Trades
 - Licensed wastewater operators
 - Certified mechanics
 - Licensed electricians
 - Engineers
 - Lab technicians
 - Accountants
 - Project managers
 - Computer hardware/software experts
 - Communications specialists

...all supporting our local economy!



Our Drivers & Challenges

Innovation at AlexRenew is the result of unique challenges, opportunities, and visionary leadership.



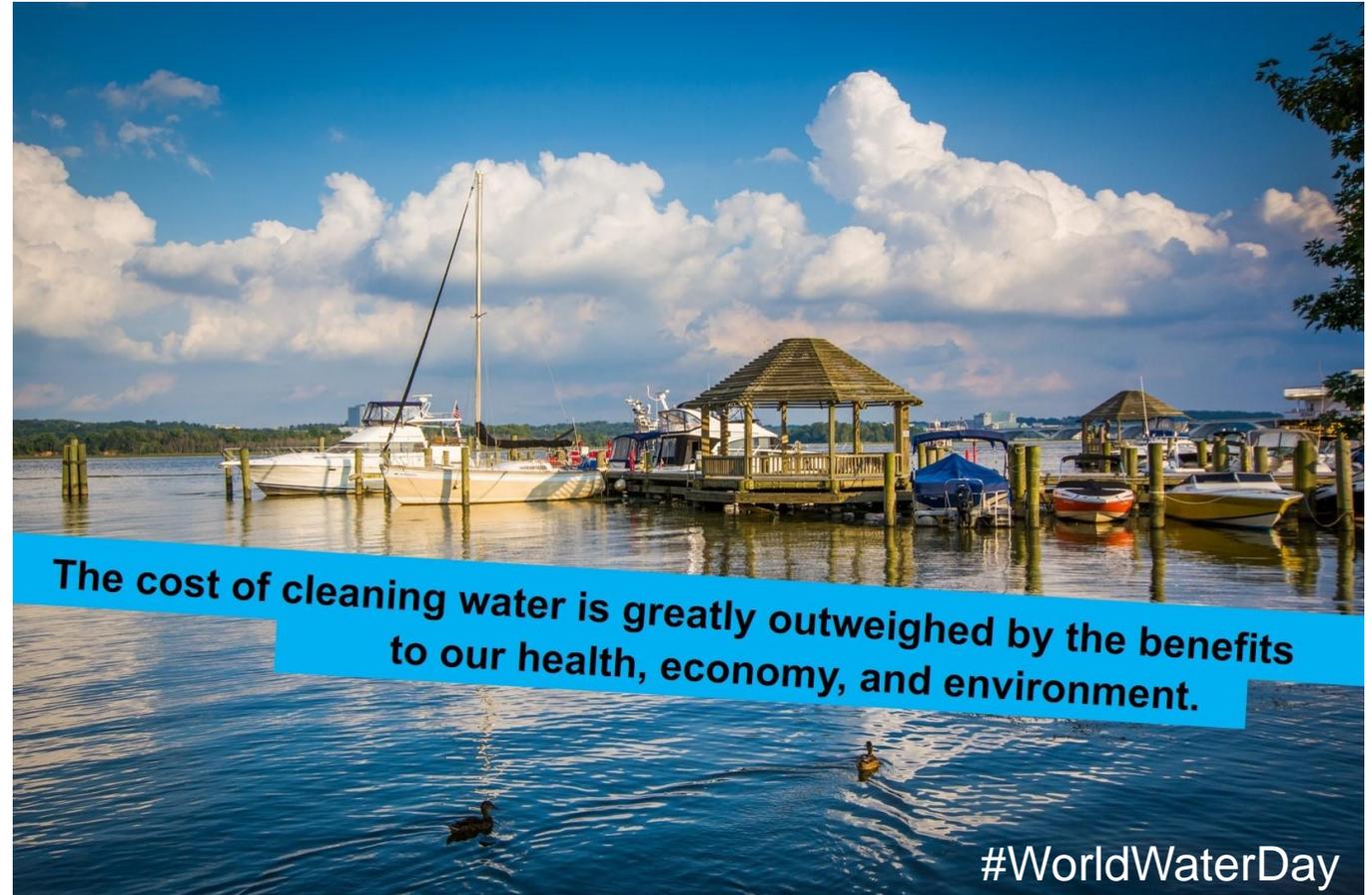
Challenges & Drivers



- Small, urban footprint
- Surrounded by diverse and unique neighbors
- Continued nutrient reductions and other regulatory changes
- Climate adaptation
- Wet weather flow impacts, management, and funding

Challenges & Drivers

- Supporting Alexandria's growth
 - Creating capacity to enable the city to thrive
 - Maintaining stable rates
- Maintaining aging infrastructure
- National drive toward “One Water” solutions
- Staffing and developing the water workforce of the future
 - Over 35% of workforce could retire today
 - 60% eligible in next five years
 - New skillsets needed



Rising to the Challenge

AlexRenew's Board-led vision takes the utility above and beyond compliance.



Our Board: Committed Citizens with a Vision



By 2040, we have served as a catalyst and are effectively partnered with all watershed stakeholders to:

- Enable local citizens the opportunity to establish a **personal connection with local waterways** so that we can eat local fish and swim in local streams.
- Support a healthy and **resilient local economy** through stable rates, supported by diversifying revenue and maximizing resource recovery.
- Create an informed citizenry regarding the importance of water so that **water stewardship** is achieved through personal and organizational actions.



Developing the Workforce of the Future



Over 10 years, AlexRenew will provide 440 direct and indirect jobs and \$830 million in total economic output to our community.

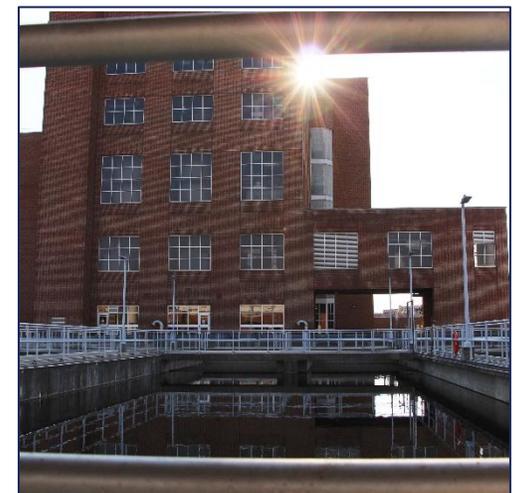
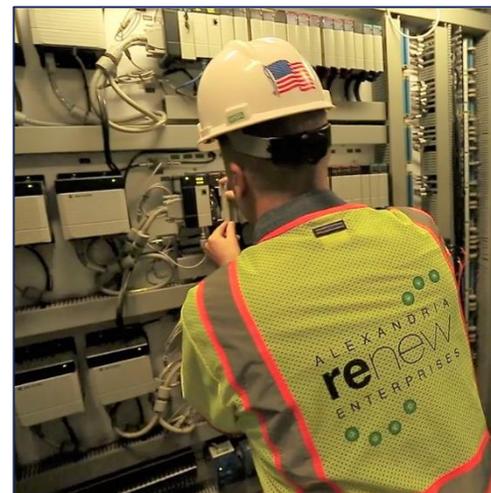
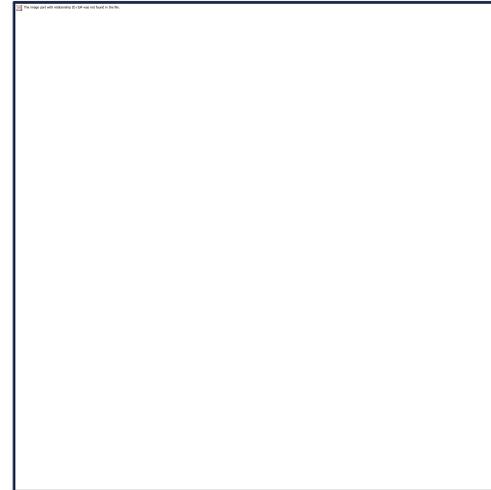


- Apprentice program for electrical technicians, operators, mechanics
- Currently training over 10 apprentices
- In 2 graduating classes, 9 apprentices have completed the program

Harnessing New Technology



- History of innovation
 - Dual media filters, UV, tertiary plate settlers, vertical solids processing, pre-pasteurization, Mainstream deammonification, and more.
- New technology will enable AlexRenew to meet future challenges
 - Solids handling renewal
 - Reclaimed water expansions
 - Online monitoring and SCADA enhancements
 - Data management and use



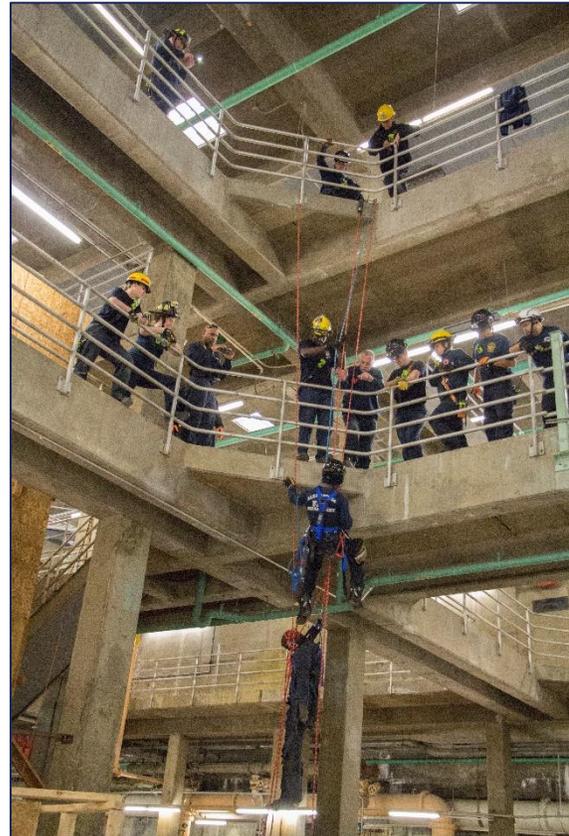
Leveraging Research



- WERF research studies
- Government programs (e.g. DOE's Better Plants Program)
- Partner with VCS Denmark to exchange experience
 - First exchanges on anammox
 - Inspired AlexRenew to implement mainstream anammox
- Partner with GMU to monitor water quality and biological communities in receiving stream

Focusing on Community

Going Beyond Wastewater



- Tours and local events
- Wildlife habitat
- Educational lobby / exhibits at Four Mile Run pump station
- Public meeting space
- Public-public partnership with Greater Cincinnati Water Works
 - Consistent 95% call quality scores
- Police and Fire Department training space
- Collaboration and resource sharing with local NGOs, like Alexandria Seaport Foundation

Transforming Water to Transform Our Community



By focusing on the public while leveraging technology, team ingenuity, and research, we can create solutions that benefit water quality and our community.



South Carlyle Strategy



South Carlyle Strategy

- Original 2010 plan to build five, 65-foot-tall silos
- Would have affected surrounding property
- Partnership with developer and City of Alexandria transformed original plan to one that provides value for the community
- Current strategy integrates wastewater treatment needs into innovation corridor
- Frees 1.5 acres on the main plant site
- Helps create a healthy and livable Alexandria through construction of walking paths and over five acres of new green space with a children's play area.



Our Board Vision in Progress

Fishable, Swimmable Waterways by 2040



- Economic value of a healthy Chesapeake Bay is \$130 billion
- Underwater Bay grasses and blue crabs show promising increases in 2016
- Chesapeake Bay received an improving grade in 2017
- Potomac River pollution levels are decreasing, fisheries are rebounding, and more people are enjoying the river again.



Stay in Touch



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