



# Alexandria Renew Enterprises

Transforming water to transform our community

**Ashley Tatge**  
**Environmental Specialist**  
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# We are Alexandria's Water Transformers



- Created in 1952 by Alexandria City Council
- Urban 35-acre campus serving 320,000 people in City and parts of Fairfax County
- Clean over 13 billion gallons of water annually; designed to clean up to 54 million gallons/day
- 100 environmentalists passionate about clean water
- 20 miles of pipes and five pump stations throughout the city



# 2040 AlexRenew Vision



By 2040, we have effectively partnered with all watershed stakeholders to:

- Enable local citizens to **embrace the best use of water resources and establish a personal connection with local waterways.**
- Sustainably manage water as a single resource through the entire water cycle.
- **Create a healthy environment and improve our quality of life** through the exceptional reclamation of used water resources.
- Maximize use of multiple financial options to continue our fiscal stability.



# AlexRenew's VEEP Development



2011

- National Biosolids Program

2013

- VEEP E4
- VCS Denmark Partnership
- Started Apprenticeship Program

2015

- Sidestream Anammox Startup
- Superior Energy Performance

2016

- Platinum LEED Building opens
- NACWA Water Resources Utility of the Future Today Award
- NACWA Operations Excellence Award for Energy Program

2017

- Governor's Environmental Excellence Award (Gold)
- American Society of Civil Engineers National Capital Section Sustainability Award
- Mainstream Anammox Seeding

2018

- NACWA Excellence in Management Program (Platinum)
- **NACWA Peak Performance Award for 13 years of complete and consistent National Pollutant Discharge Elimination System permit compliance**



# AlexRenew's Major EMS Achievements

## Anammox - 2015

30% Aeration

14% Process Air  
Compressor

40~50%  
Methanol

### Meet Anammox

#### AlexRenew's Nitrogen-Eating Red Bugs

##### What are they?

Anammox — or "red bugs" — are tiny, naturally occurring bacteria that can take a short cut when removing nitrogen pollution from wastewater.

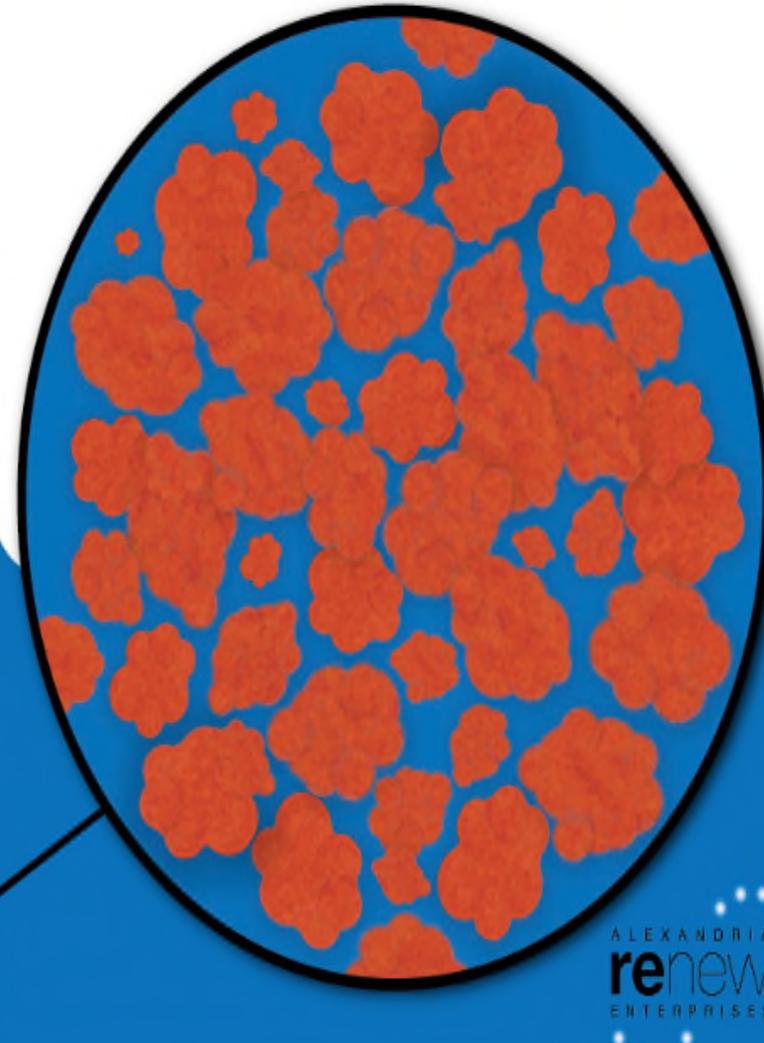
##### Are they safe?

Absolutely. They have been used in Europe for years with fantastic results. AlexRenew is the first in North America to use them in a mainstream operation. Red bugs work with our other microbes to convert the ammonia found in wastewater into nitrogen gas, which makes up almost 80% of the atmosphere!

#### How do they help Alexandria?

- Fewer chemicals needed to treat wastewater
- Improved quality of the cleaned water that AlexRenew releases into local waterways
- Increased energy efficiency

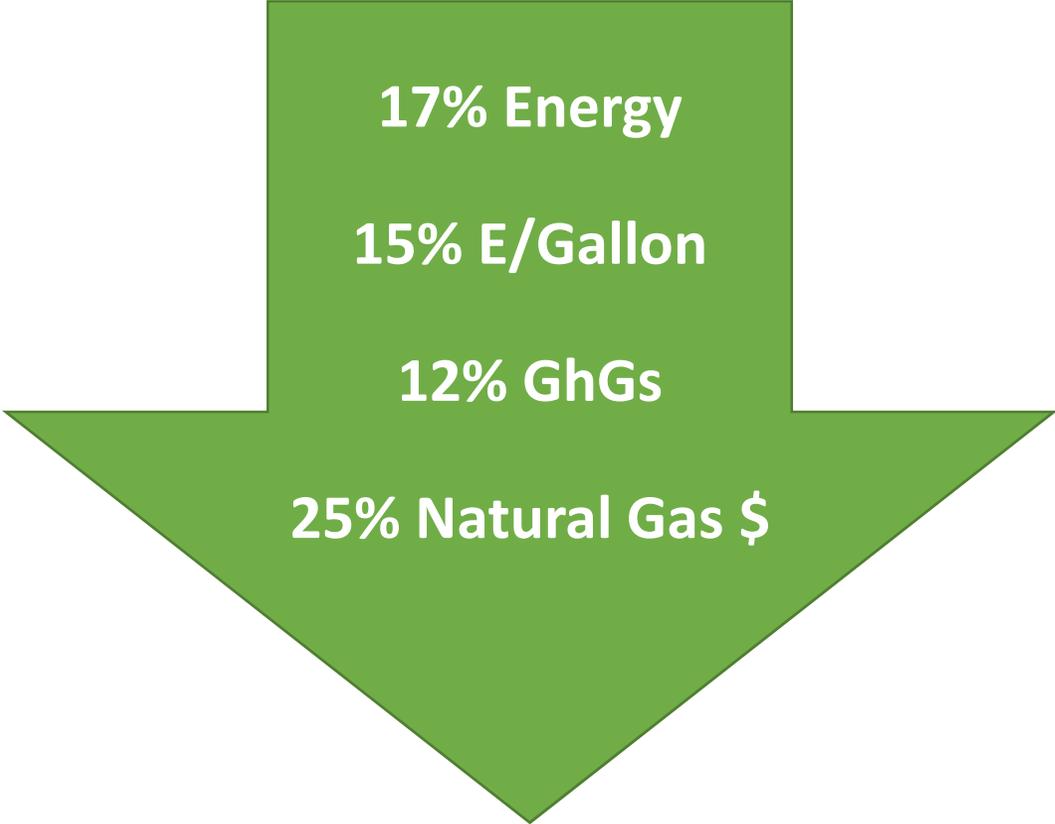
Learn more at [alexrenew.com/anammox](http://alexrenew.com/anammox)



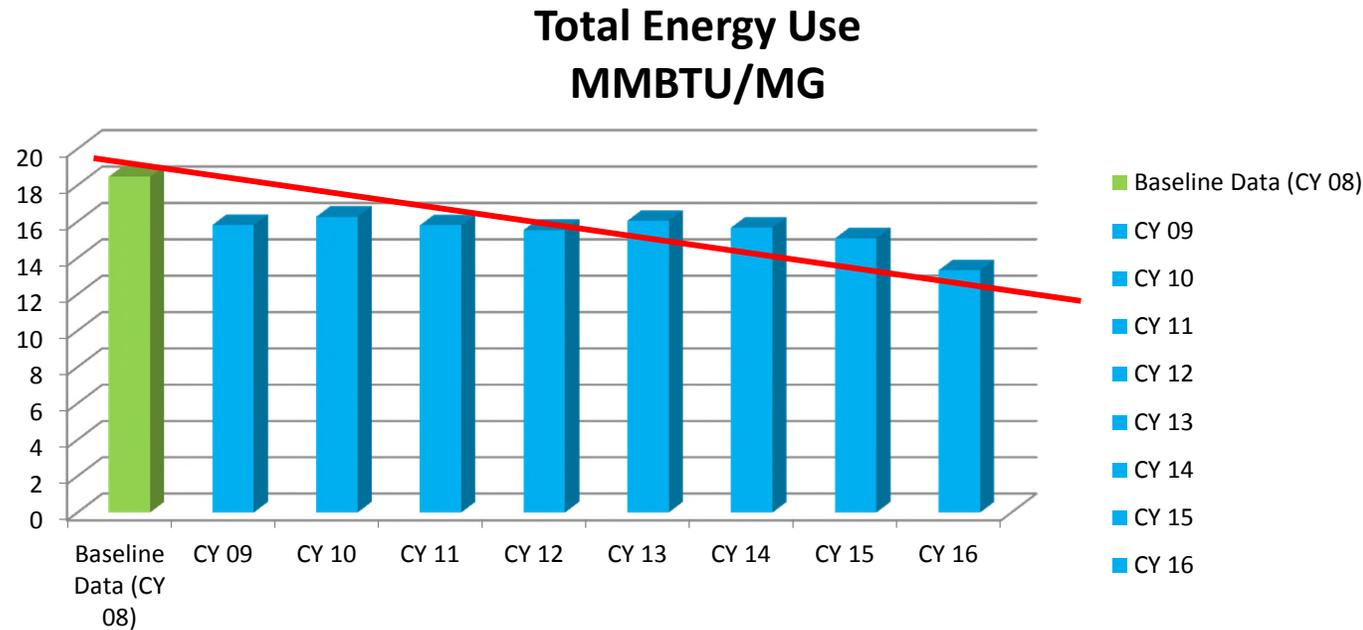
# AlexRenew's Major EMS Achievements



## Significant Energy Reductions



# Energy Use Savings

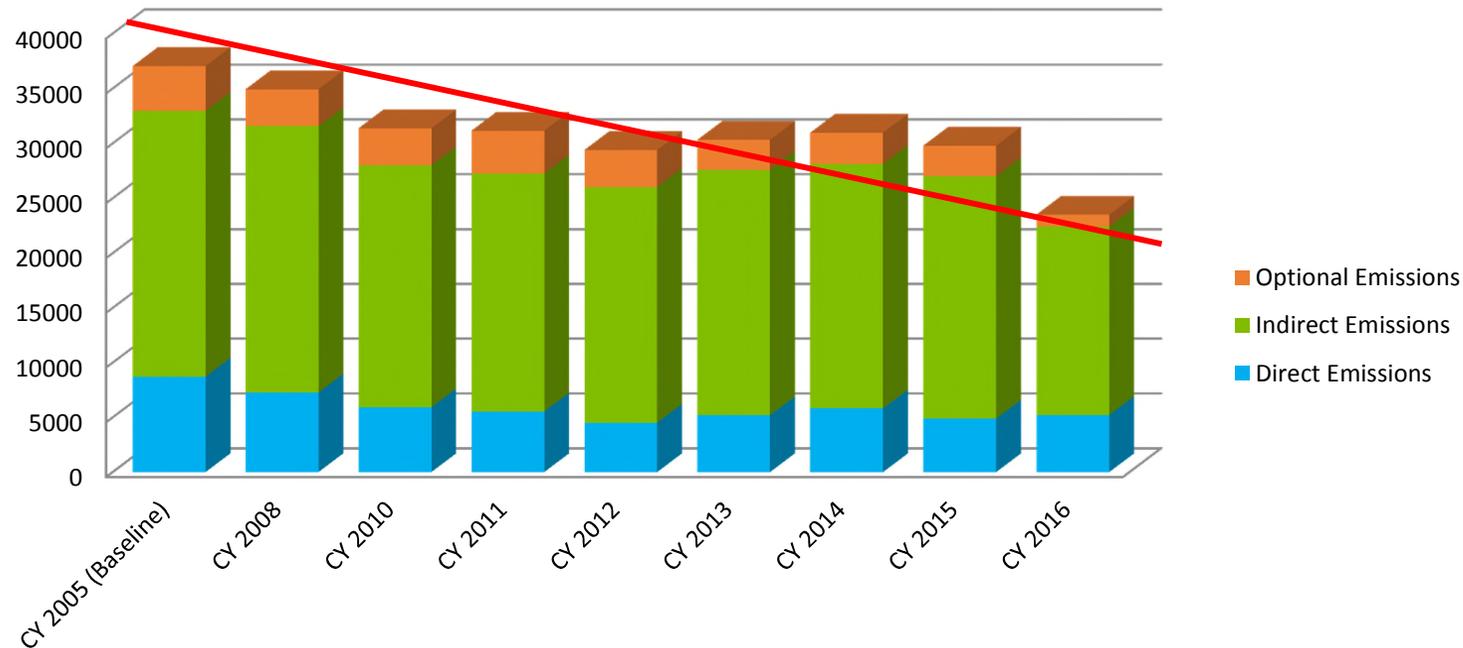


Using renewable energy:  
450 solar panels power almost 50% of Environmental Center electricity needs  
92% of the methane gas created and captured offsets our purchased energy by 25%



# GHG Reduction

## Emission Type Breakdown

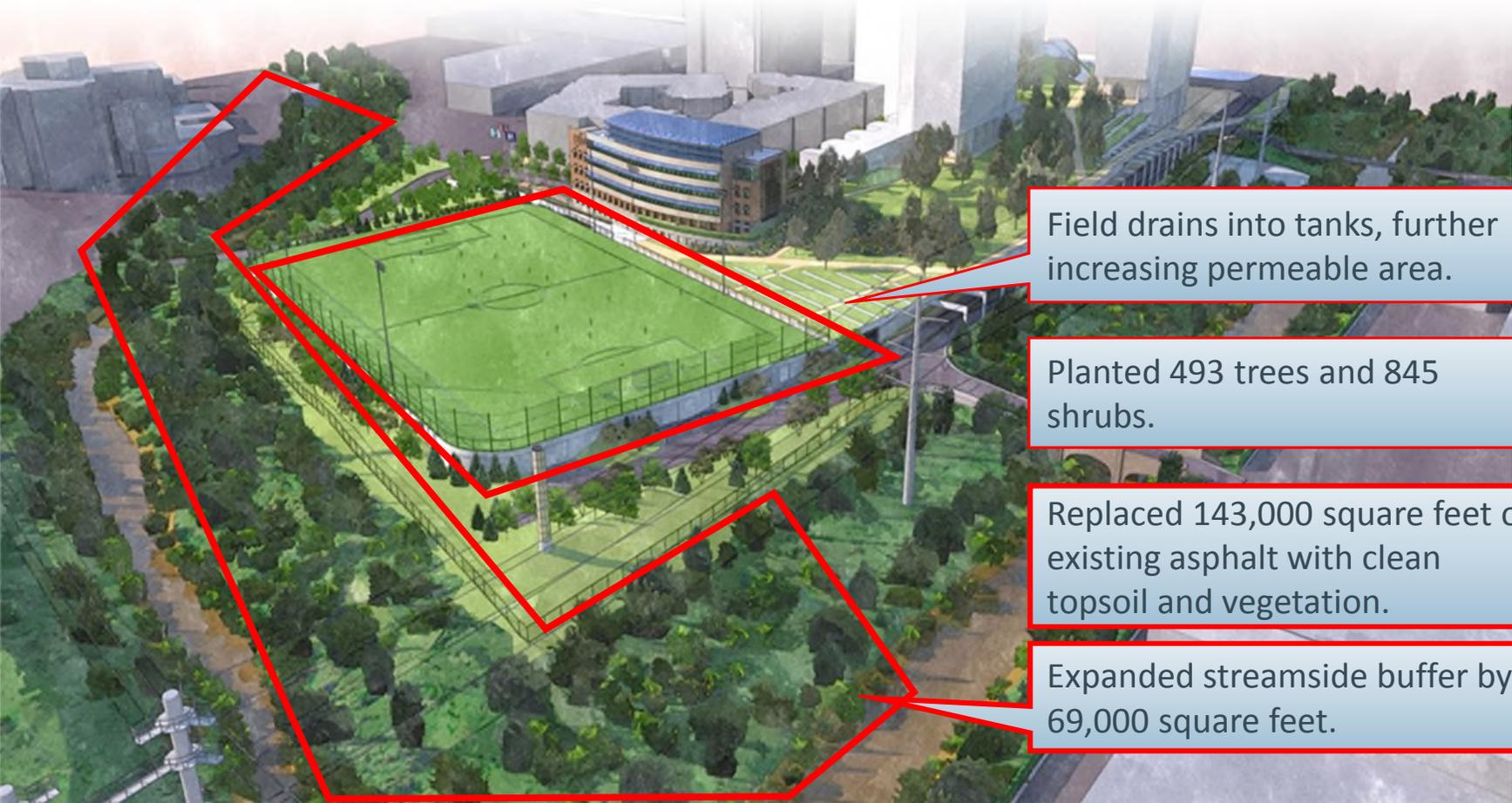


Reduced GHG emissions by 12% from 2011 baseline

150 million cubic feet of methane gas per year generated enough to power 1,800 Virginia homes for one year



# AlexRenew's Major EMS Achievements



Field drains into tanks, further increasing permeable area.

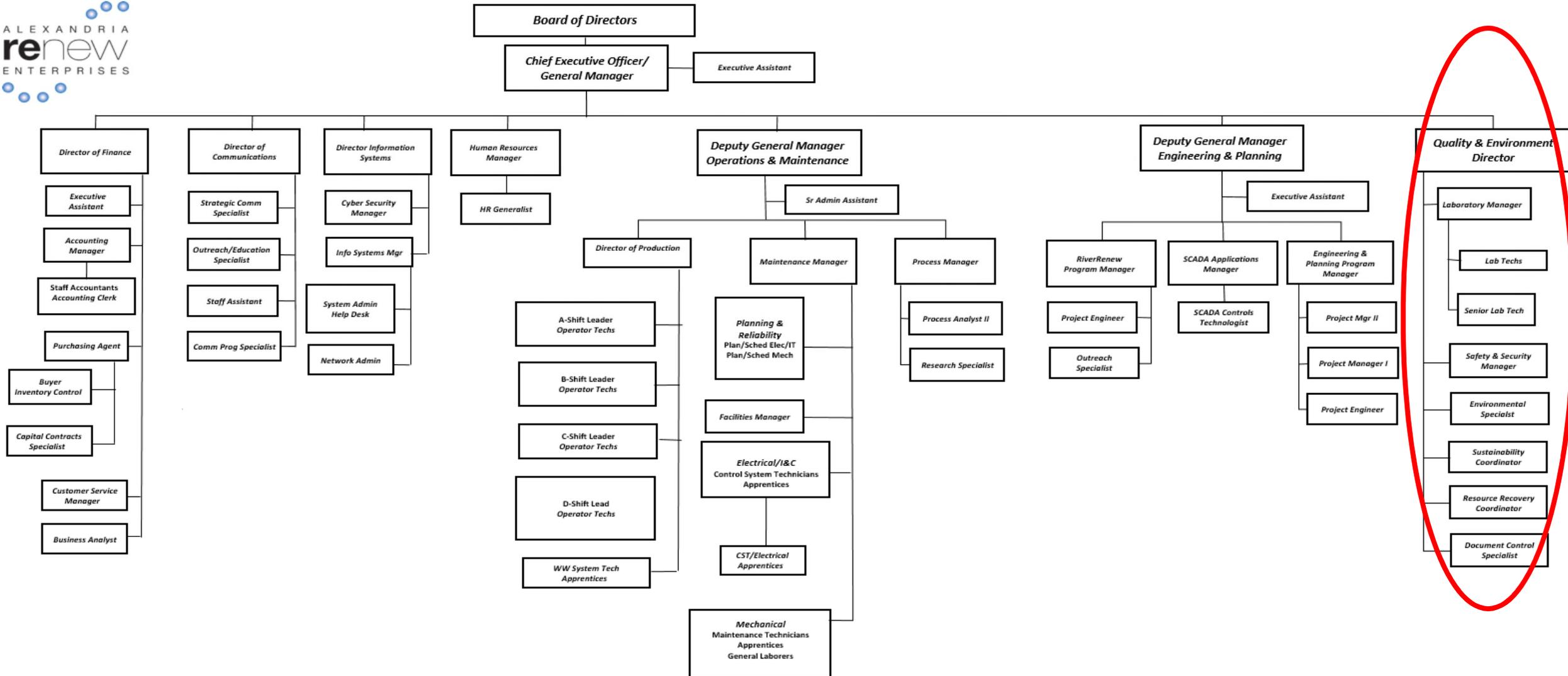
Planted 493 trees and 845 shrubs.

Replaced 143,000 square feet of existing asphalt with clean topsoil and vegetation.

Expanded streamside buffer by 69,000 square feet.



# Why is AlexRenew's EMS Successful?

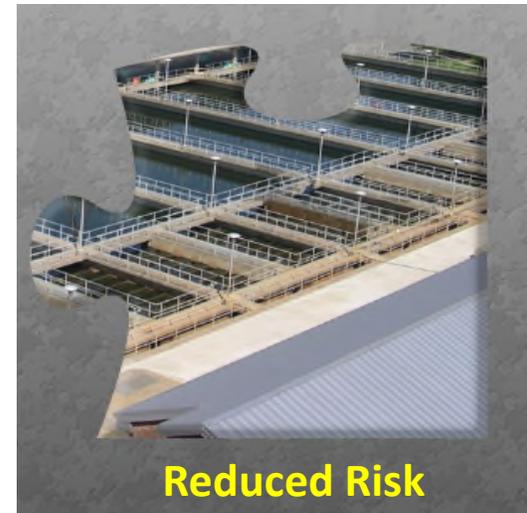
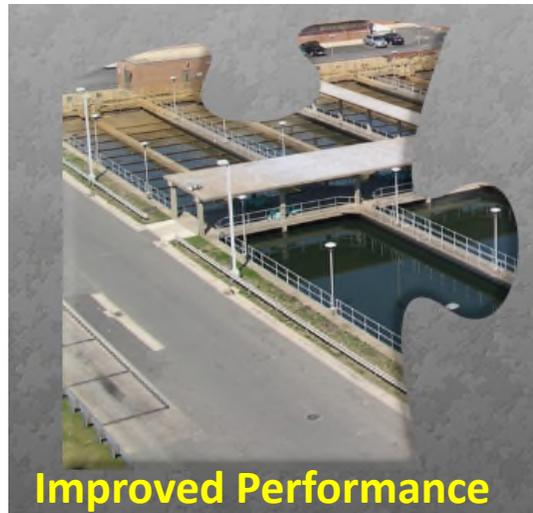


# Training

- EMS Training
  - Part of New Hire Orientation
  - Annual for all Employees
- Third Party Contractors
  - Trained on Environmental Policy
  - HazMat, Universal Waste and Recycling Procedures
- Stormwater Awareness Training
  - Annually for all Employees

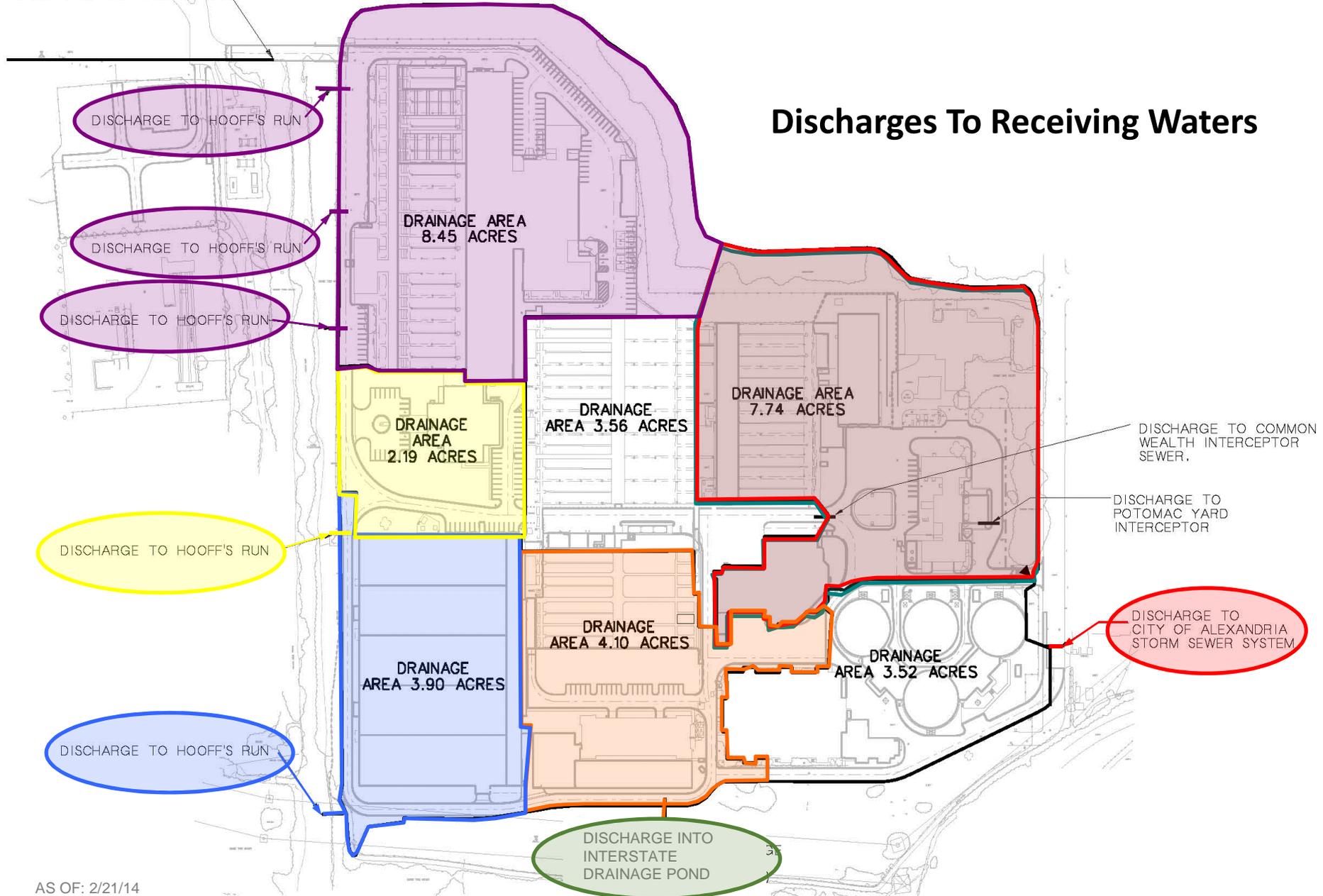


# EMS Benefits



# Strong Pollution Prevention Practices

DISCHARGE TO HOOFF'S RUN



# Cross Departmental EMS Team

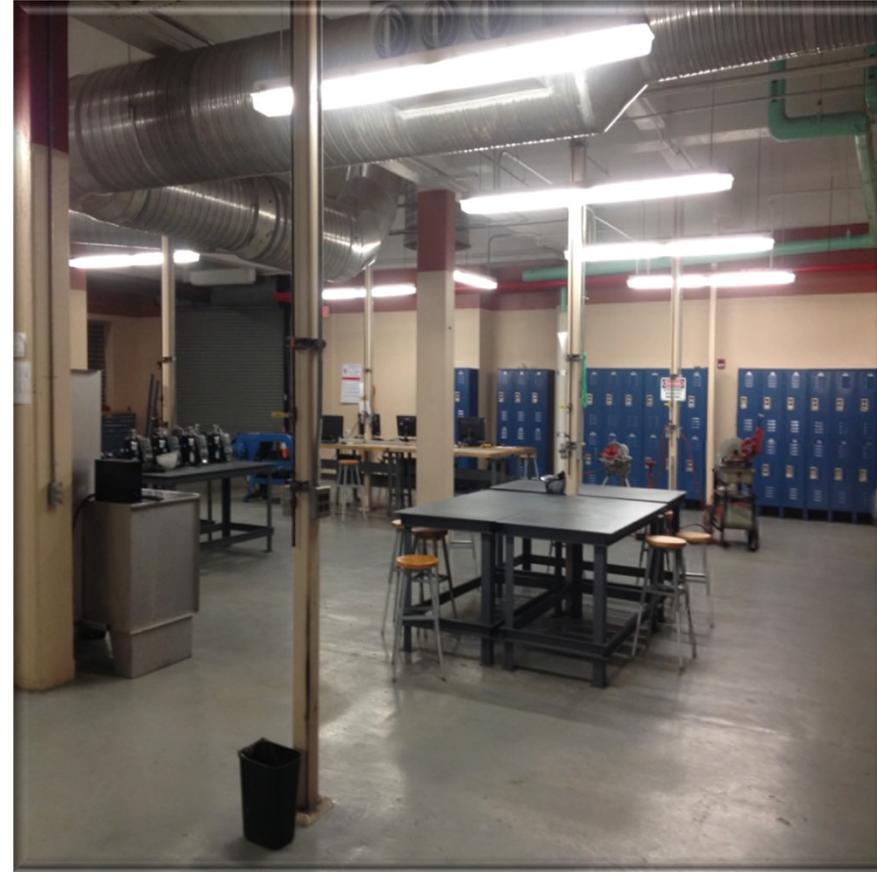


# 5S – Maintenance Shop

Before

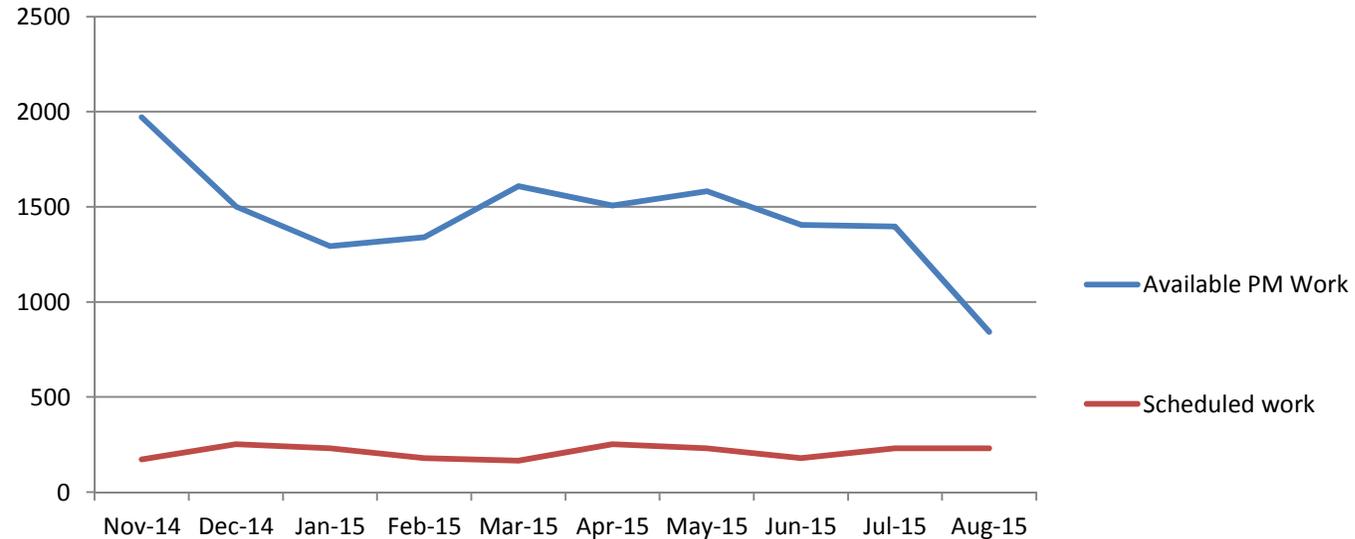


After



# PM Backlog / Productivity

## PM Backlog



Nov. 2014 = **1971** Available Work with **172** scheduled man hours  
Aug. 2015 = **843** Available Work with **231** scheduled man hours

**Decrease of 33%!**





## Community Understanding and Pride





# EMS Objectives for the Future

- Bioenergy
- Increase amount of recovered resources
- Maintain perfect compliance
- Passion for Purpose in our team



# Thank You

 Alexandria Renew Enterprises

 @AlexandriaRenew

 CallMeMoxie

 Alexandria Renew Enterprises

Visit us online: [www.alexrenew.com](http://www.alexrenew.com)

Email: [Ashley.Tatge@alexrenew.com](mailto:Ashley.Tatge@alexrenew.com)

