Alexandria Renew Enterprises’ Path to Sustainability ...

Our story ....
Our Facility Circa 2006

- Alexandria Sanitation Authority “ASA”
- 54 MGD AADF meeting BNR Limits and producing EQ Biosolids
- Service population ~320,000
- Comprehensive facility upgrade just completed
Ready to ride into the sunset ...

Not so fast!

Growing Community Around Facility

PCBs!

Lower TN Limits!

Operational Costs!

Customer Billing!

Organization Changes
New Future, New Vision ...

Environment
Protect – Restore – Regenerate

People and Society
Engage – Inform – Respect

Financial and Economic
Efficiency – ROI – Revenue
How to Create a Sustainable Future?

- Clear Vision
  - Supported and championed at all levels
- Sustainability Framework
  - Guides decision-making
- Maximizing Revenue Options
- Improving Institutional Competency
- Community Relations
- Partnerships
The Commitment Begins at the Top
Board 2040 Vision

- Establish a personal connection with local waterways
- Eat local fish and swim in local streams
- Support a healthy and resilient local economy
- Inspire water stewardship action
Starting in 2006, AlexRenew began a process that identified:

- Current and future regulations
- Potential limits on biosolids management practices
- Community needs (recycled water, soil amendment)
- Rapid urban development
- Sustainability goals
SANUP – State-of-the-Art Nitrogen Upgrade Program

- More stringent total nitrogen discharge limits required process upgrades
- Planning process used to create a scope for the facility upgrade
- In line with AlexRenew’s mission/vision
Decision Model

- Used to evaluate alternatives
Resulting Upgrade Project
Sustainability Framework

- 2-day sustainability workshop to kickoff the project
- Developed sustainability objectives, strategies, tools and metrics
SANUP Sustainability Categories and Objectives

**Energy**
- Reduce Energy Consumption
- Generate Energy/Increase Use of Renewable Energy

**Climate Change/ GHG Emissions**
- Minimize Life-Cycle GHG Emissions
- Adapt to Climate Change

**Site Development & Natural Environment**
- Create Aesthetically Pleasing Environment
- Increase Value of Ecologically Viable Areas

**Stormwater & Water Management**
- Maximize Use of Stormwater Resource
- Maintain Stormwater Quality
- Beneficial Reuse of High Quality Effluent

**Human Health**
- Eliminate/Reduce Physical/Chemical Hazards
- Maintain Healthy Air Quality
- Ensure Worker Safety During Construction & Operations

**Materials & Waste**
- Use Environmentally Preferable Materials
- Standardize Equipment Units & Spare Parts
- Utilize Sustainable Approaches for Project Execution
- Minimize Wastes Produced

**Community Relations**
- Achieve Public Acceptance
- Minimize Traffic
- Minimize Odors
- Minimize Post Construction Operational Noise
- Minimize Post Construction Light Impacts
- Minimize Construction Impacts
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Site Development & Natural Environment
- Green Building
- Green Roof
- Enhance Biodiversity

Stormwater & Water Management

Human Health
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Generating KPIs

- Key Performance Indicators (KPIs) created to measure the performance
- KPIs used to track progress against the desired outcomes
Tracking KPIs

Package C: Greenhouse Gas Emissions Avoided

CO₂-E Avoided (Metric Tonnes)

Construction Phase Progress

- Monthly Total
- Running Total
Re-Branding

- In 2012 Virginia American Water stopped handling billing for AlexRenew
- AlexRenew rebranded in order to better communicate who we are, what we do and how we are different

became ...

[Logos: Alexandria Sanitation Authority, AlexRenew Enterprises]
George’s Old Town Blend

- Up to 5,000 wet tons of AlexRenew’s EQ Biosolids are combined with wood fines to create soil amendment
- Culpeper Recycling markets and sells the product
Reclaimed Water

- Used 1.4 billion gallons of reclaimed water in 2014 for plant processes
- In 2015, a new reclaimed water pump station and distribution system will be put into service
Workforce of the Future

- Apprenticeship Program combines academic instruction and on-the-job-training
  - Wastewater Systems Technician
  - Wastewater Mechanic
  - Controls System Technician (Electrician)
Innovative Technologies

- Anammox process removes nitrogen more efficiently
  - Sidestream in May 2015
  - Mainstream process under construction.
Community-Oriented Development

- Environmental Center and Athletic Field
Visible in the Community

Earth Day 2014

Watershed Cleanup

AlexRenew Open House
Collaboration with Other Utilities

- WERF Research Projects
- DC Water Digestion Seeding
- VCS Denmark
Summary

- Sustainability
- Innovation
- Continuous Education