Turning Leafy Greens Into Green Energy

The Saratoga County and Albany County Joint Biosolids Effort

Presented by Dan Rourke, P.E.
Executive Director
Saratoga County Sewer District
Saratoga and Albany Partnership
- What was the original problem statement?
- Increased SSI emission regulations
- Study/IMA

Wastewater Utilities
- Albany/Saratoga WWTP’s
- Leverage existing infrastructure
- Leverage existing talent
Intermunicipal Agreement (IMA)

Definition

What needs to be explicitly defined?
- Cost Sharing – Based on Engineers Report
- Payments – What are county audit/purchasing policies?
- Termination

Project Funding – Shared? Separate Bonding?

Land Lease
Study Phase

- Goals
- Technical Project Aspects
  - Steel vs. Concrete (useful life for bonding, payback)
  - Sizing, redundancy
  - What is the utilities fiduciary duty?
- Understanding Revenue Streams
  - Do you want to be a merchant facility?
  - Sludge/Grease/Septage
  - Producing Electricity/Natural Gas
    - Understand the market
    - Utility hurdles
Developing an ROI or Annualized Cost for the Project

- **Expenses**
  - Compared different technologies/options vs. a “do nothing” approach.
  - Weighed risk vs. cost

- **Revenues**
  - Electrical costs, on site usage vs. possible net metering. Low electrical costs = Longer ROI
  - Natural Gas Production – Understanding RIN’s
    - D3 vs D5 – Processing food waste/grease
    - Using RIN revenue for ROI
Food Waste Regulations

- Anaerobic Digestion – Laying Groundwork for SCSD and the ACWPD

- NYSDEC has already planned for food waste diversion.

- Amount of waste generated with an available “outlet.”

- Mixed D3/D5 RINs?
SCSD

- Existing biosolids processes and cost
- Expected annualized cost of new project
- Dealing with residuals
  - Class A vs. Class B land application
  - Importance of scale
    - A: 37 dry ton/day @ 21% = 144 ton/day – 64,000 ton/year
    - B: 37 dry ton/day @ 85% = 43 ton/day – 15,900 ton/year
  - Different hauling costs/markets/emerging contaminants
  - $5/ton price difference = $240,000 cost difference/year
- Minimizing risk
  - Market based pricing to process the food waste (“outlets”)
Project Costs

- Capital Costs currently projected at $48.5M
  - These costs split 50/50 between counties
  - SCSD had study done for own digester – $40M

- Annualized Costs
  - Approximately $5M total – $2.5M each county
  - This includes estimated O&M and revenue based on diverting electric load currently (Not RIN’s)
  - No tipping fees included (conservative)
Current SCSD Operations

- Third party hauling contract (bid with extensions)
- Cancelled extension 30 days before
- Price increased – $91/ton to $129/ton
  - $750,000/year
- Control your own “cost destiny” through mindful design
How Food Waste Fits In

- As the end outlet, we would work with local municipalities who want to implement a food waste/reuse project.
- Provide available capacity, ability to reserve capacity, tipping fees for processing etc. (D3 vs. D5 RIN distinction)
- WWTP’s are easy end outlets
  - Existing infrastructure
  - Existing operations/maintenance staff
Schedule/Next Steps

- Currently in design
- Out to bid for construction 2021
- Secure financing (and hopefully grant funding!)
- Carefully look at all EFC grant programs (WIIA vs. IMG, hardship vs. market rate financing)