

ECRWRF



Existing East Central Regional Water Reclamation Facility has a rated treatment capacity of 70 million gallons per day and serves the Cities of West Palm Beach, Riviera Beach and Lake Worth; Palm Beach County, and the Town of Palm Beach

Existing Solids Processing Facilities



Sludge decanting to concentrate solids to 2%

Aerobic digestion to partially destroy solids

Belt press dewatering to remove excess water from biosolids

Dewatered cake hauled to SWAPBC Pelletizer Facility



Proposed Solids Processing Facilities



Mechanical sludge thickening to concentrate solids to 5%

Temperature-phased Anaerobic Digestion to destroy more solids

Co-digestion of hauled grease

Centrifuge dewatering to remove more excess water

New state-of-the art facilities replace aged infrastructure

Sustainable Design Benefits

- Mechanical thickening concentrates sludge 2 to 3 times more
 - Smaller downstream infrastructure, lower operating energy demand
- Temperature-phased anaerobic digestion
 - Electrical power demand < 50% of equivalent aerobic digestion
 - Will reduce power consumption by over 4,500,000 KWH per year
 - Will increase solids destruction by 25% - 30% over aerobic digestion
 - Destroyed solids converted to renewable biogas energy
 - Excess biogas can replace portion of natural gas usage at SWAPBC
- Centrifuge dewatering
 - Will remove 25% - 30% more excess water prior to hauling biosolids

Sustainable Design Benefits

- Combination of higher solids destruction and higher water removal will
 - Reduce hauled biosolids by 15,000+ wet tons per year
 - Reduce truck hauling trips from plant to landfill
- Digesters will produce energy that can be used beneficially
- Digesters are also designed to accept waste products to augment gas production

Biogas Uses for Renewable Energy in the Industry

- Combined Heat and Power (CHP)
 - Internal combustion engines
 - Combustion gas turbines
 - Microturbines
 - Fuel cells
 - Steam Turbines
- Non-CHP Uses for Biogas
 - Injection of biogas into natural gas pipelines
 - Sale of biogas to an industrial user
 - Use of biogas as a vehicle fuel

ECR Biogas Utilization Alternatives

City Has Conducted a Digester Gas Utilization Study

- Conveyance to the Solid Waste Authority
- Onsite Power Generation
- Renewable Natural Gas for Vehicle Fuel
- Pipeline Quality Gas for Export/Sale

Other Areas for Energy Reduction at ECR

- Aeration improvements using more efficient blowers and diffusers
- Tank mixing improvements
- High efficiency lighting

Proposed facilities under construction

Schedule to be fully operational by Spring 2018

