

## Mount Pleasant Waterworks, SC – Center Street WWTP Case Story of Success

### Mount Pleasant Waterworks Enhanced Treatment Capacity and Received Green Project Reserve Funding with BioMix™ Compressed Gas Mixing System

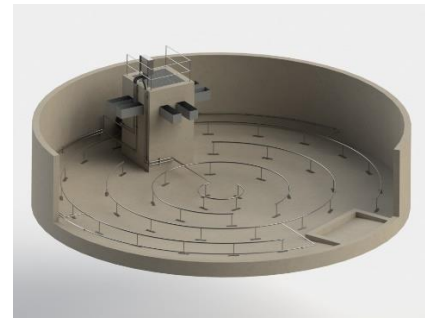
Location: Mount Pleasant, South Carolina	Solution: BioMix™ Compressed Gas Mixing
Design Engineer: Black & Veatch	Design Flow (ADF): 3.7 MGD
Application: Flow Equalization & Anoxic Mixing	Compressors: Two (2) 25 HP Rotary Screw
Mixing Efficiency: $\approx 0.13$ HP/1000 FT <sup>3</sup>	Quantity of Mixing Nozzles: 140

The Center Street Wastewater Treatment Plant was comprehensively upgraded to provide improved treatment and increased capacity. BioMix™ Compressed Gas Mixing technology was an integral part of the plant upgrade, whereby BioMix™ replaced inefficient positive displacement blowers and coarse bubble aerated mixing in the flow equalization basin, and was installed to provide anoxic mixing in two biological nutrient removal selector basins, which were converted from primary clarifiers.

The project was funded through South Carolina’s State Revolving Fund (SRF) program and the work related to the design and installation of BioMix™ in the flow equalization and anoxic selector basins qualified for Green Project Reserve (GPR) funding. Black & Veatch, Waterworks’ engineer, submitted a Green Project Reserve (GPR) Business Case to the South Carolina Department of Health and Environmental Control, which provided a cost/benefit analysis that indicated the expected “green” or energy efficiency benefits associated with upgrade of the facility including BioMix™. The Business Case indicated a 70% decrease in the power demand versus alternative mixing technology and highlighted the operational benefits of a mixing technology requiring no in-tank maintenance.

Efficiency means little if the system fails to perform its intended function. The projected energy efficiency was proven during field performance testing and BioMix™ demonstrated a competitive advantage over conventional diffused air or mechanical mixers by providing uniform mixing throughout the basin. The BioMix system provided less than 1% coefficient of variation of solids concentration throughout the tanks.

Mount Pleasant is just one example, whereby nearly all wastewater treatment facilities can benefit in lower cost of operation and maintenance from a BioMix™ Compressed Gas Mixing System. Energy savings across the board are real, and the magnitude of energy savings and payback period will vary based on application.



#### BioMix™ Compressed Gas Mixing Advantages

- Bottom up mixing in any size tanks
- Uniformly distributed mixing energy
- Improved mixing versus alternatives
- Operator adjustable mixing parameters
- Optimized energy consumption
- Lowest energy consumption mixing technology
- Non-clog maintenance free in basin nozzles and nozzle headers
- Minimized and localized maintenance requirements