

CASE STUDY: Nashua, New Hampshire Wastewater Treatment Facility



Application:	Sludge Mixing – 2% WAS, 4% Primary
Design Flow (ADF):	16 MGD
Mixing Efficiency:	0.13 HP/1000 ft ³
Compressors:	Two (2) 7.5 HP Rotary Screw
Mixing Nozzles:	25
Design Engineer:	Wright-Pierce
Contractor:	T. Buck Construction, Inc.

Process Upgrade Including BioMix™ Compressed Gas Mixing System Slashes Operating Costs

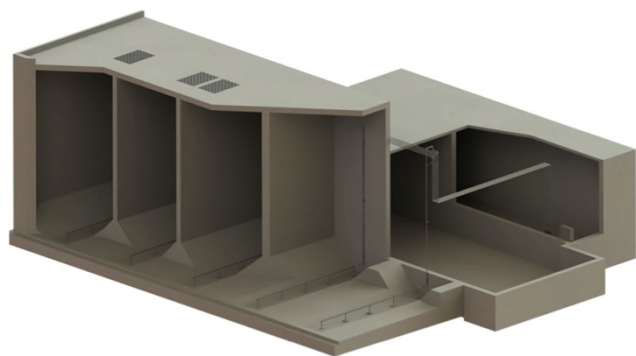
As part of the 2014 sludge dewatering process upgrade at the Nashua Wastewater Treatment Facility, plant staff and consulting engineering firm Wright-Pierce chose EnviroMix's BioMix Compressed Gas Mixing System as the most beneficial technology for the project.

BioMix was installed to mix:

- four tanks of 2% solids waste activated sludge
- one tank of 4% mechanically thickened primary sludge

The plant's BioMix system consists of two (2) 7.5 HP rotary screw compressors (one duty and one standby), an automated valve control panel, and five nozzle headers (one per basin). The system replaced five (5) positive displacement aeration blowers, five (5) coarse bubble aeration systems, and six (6) top entry mechanical mixers.

The total estimated power required for BioMix to achieve homogenous mixing in this application is approximately 6 BHP and represents **energy savings of more than 80% versus the previously installed diffused aeration and mechanical mixing technologies.**



Rendering of Nashua sludge holding tanks



ENERGY EFFICIENCY

80% or greater energy savings compared to diffused aeration and mechanical mixing in sludge holding tanks



STRAIGHTFORWARD OPERATION

Non-clogging, self-cleaning in-tank components

No mechanical or electrical components in the sludge



PROCESS OPTIMIZATION

Provides uniform mixing while tanks are being drained for dewatering, even at minimal water levels



UNPARALLELED FLEXIBILITY

Mixing suitable for concentrations up to 8% solids

Compatible with any tank geometry or configuration



Nozzle Header Installation



Nashua Wastewater Treatment Facility

“...the money saved through the use of an efficient mixing system will have a significant, positive impact on our O&M budget.”

John Adie, Plant Operations Supervisor at time of start-up, City of Nashua

John Adie, the Nashua Plant Operations Supervisor at the time of the installation, stated, “We are excited to implement the BioMix technology here at the Nashua plant. Energy costs in the Northeast are some of the highest in the country and the money saved through the use of an efficient mixing system will have a significant, positive impact on our O&M budget.”

The BioMix system at the Nashua WWTF provides a straightforward, low-maintenance, energy-efficient mixing solution. Additional benefits of the technology include:

- Variable mixing intensity based on operating depth
- No low-level limitations – ability to mix at any depth
- Zero wall penetrations, eliminating the risk of leaking

As facilities look to incorporate energy-efficient technology into their operation and maintenance strategies, the savings offered via BioMix for sludge applications prove the technology to be a superior alternative to conventional diffused aeration or mechanical mixing.



Contact sales@enviro-mix.com today to discuss the ways EnviroMix can optimize your mixing solutions.