



**TOWN OF MERRIMACK, NH
DEPARTMENT OF PUBLIC WORKS
WASTEWATER TREATMENT FACILITY**

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To: Paul Micali
Town Manager

Thru: Kyle Fox
Public Works Director

From: Sarita Croce 
Assistant Public Works Director/Wastewater

Date: July 6, 2022

SUBJECT: Request to Purchase Compost Aisle/Bay Blowers

The Wastewater Treatment Plant (WWTP) is requesting permission from the Town Council to withdraw \$31,860 from the Capital Reserve Fund for the purpose of purchasing 15 aisle blowers for the compost facility.

This is a proprietary blower that was designed for the corrosive environment in compost. Ammonia and hydrogen sulfide will degrade the components of typical steel blowers. This blower was designed by Bonardi with aluminum and stainless steel components.

The Sewer Infrastructure Improvement CRF balance as of May 2022 was \$1,103,928.12. In June 2022 we withdrew \$423,054 from the CRF for fiscal year 2021-22 expenditures. The Town has also committed \$461,319 to pay for a portion of the Chlorine Building upgrade. The remaining CRF balance will be \$219,555.12. A deposit to the CRF will be made in fiscal year 2022-23 in the amount of \$500,000 which will bring the CRF balance to \$719,555.12, prior to fiscal year 2022-23 withdrawals.

Blower Operation

The Environmental Protection Agency's (EPA's) 40 CFR Part 503, Standards for the Use and Disposal of Sewage Sludge, (the Part 503 Rule) defines two types of biosolids with respect to pathogen reduction: Class A and Class B. The Town produces a Class A biosolid in which fully destructs pathogens to non-detectable levels in the wastewater solids. The Town processes compost in an In-vessel process. In-vessel composting occurs within a contained vessel, enabling the operator to maintain control over the process.

The sludge and sawdust mixture is loaded into one end of the building in an aisle/bay. An agitator pushes the mixture through the bay rows while mixing the material. Air is introduced and exhausted through blowers in the floor of the bay to ensure that the material contains

sufficient oxygen. The most important design feature of a composting system is the ability to maintain uniform aerobic conditions.

Microorganisms break down carbon-containing compounds by oxidizing organic molecules for energy. This results in the consumption of oxygen (air) and the release of carbon dioxide as a byproduct. Without adequate air flow the process becomes anaerobic which leads to the production of unfavorable odors.



Existing Compost Blower



New Bonardi Compost Blower

Recommendation

The Wastewater Treatment Plant is therefore recommending the purchase of 15 proprietary blowers at the sum of \$31,860. Delivery of the blowers would be 6 months after receipt of a purchase order. The CIP identified a budget estimate of \$27,000 per the approved 21-28 CIP. The current Sewer Infrastructure Improvement CRF balance can handle the additional withdrawal of \$4,860 to purchase the blowers. Please note the quote expires on July 16, 2022.