



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: CIP – Agitator Controls Upgrade

The Wastewater Treatment Plant (WWTP) is requesting permission from the Town Council to withdraw \$143,000 from the Capital Reserve Fund for the purpose of upgrading two agitators in the compost facility.

The Compost Facility has two (2) agitators. Both agitators have been in service since 2015. The agitators are an important part of Compost's operation and any significant downtime of either machine would greatly affect the operation. The WWTP is requesting permission to upgrade both agitator's to wireless communication controls.

In compost, the sludge and sawdust mixture is loaded into one end of the building in a bay. An agitator pushes the mixture through the bay rows while mixing the material. Air (oxygen) is introduced and exhausted through blowers in the floor 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 during composting. In addition to mixing and moving the compost through the bay, the agitator ensures that the compost does not compact so that uniform oxygen transfer can occur.

Communications Upgrade

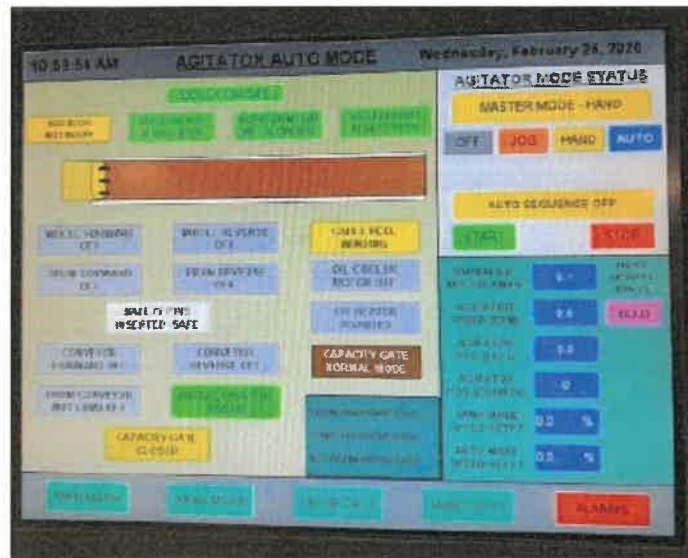
The WWTP would like to upgrade both agitators to wireless communication between the Agitator and Dolly. Cost of upgrade is \$71,500 for each agitator.

The following a summary of the justifications for the upgrade:

- 1) Safety – slip, trips, and falls occur when operators have to climb over compost to reset an agitator. There is also a possible exposure to toxic gases in the bays. With this upgrade the operators will be able to control the agitator without entering the bays.

- 2) Reduces time for operation activities. Improves consistency of operation.
- 3) Reduces trouble-shooting time. Reduces service trips required of the agitator vendor (BDP Industries).
- 4) Produces valuable information which can assist with process improvements.

In addition to the communications upgrade the WWTP will be replacing wear items. After all the significant wear items have been replaced and with the new wireless communications upgrade each agitator will operate as a new machine and be considerably safer for the operators.



Proposed Agitator Control Panel



Control Panel Location on Dolly which remains outside the bays

Recommendation

The Wastewater Treatment Plant is therefore recommending the upgrade of two agitators to wireless controls at the sum of \$143,000. The CIP identified a budget estimate of \$140,000 per the approved 21-28 CIP. The current Sewer Infrastructure Improvement CRF balance can handle the additional withdrawal of \$3,000.