



CITY OF CONCORD

New Hampshire's Main Street™

INFORMATIONAL REPORT TO MAYOR AND THE CITY COUNCIL

FROM: Earle M. Chesley P.E., General Services Director
DATE: November 22, 2024
SUBJECT: Hall Street Wastewater Plant Dewatering Project Change of Scope

Recommendation

Accept this report to revise the scope of CIP 104 Hall Street Wastewater Treatment Plant (WWTP) Renovations, subproject 25EQUIPMENT in the FY 2025 budget to include the design and construction of a new concrete slab floor to replace the existing deficient concrete slab floor supporting the truck bay located immediately below the solids dewatering room at the Hall Street Wastewater Treatment Plant.

Background

In FY 2025, City Council approved \$ 4,000,000 to refurbish the dewatering equipment at the Hall Street Wastewater Plant noted as CIP 104.

Prior to having that work performed, the Department had a structural evaluation of the concrete floor supporting the truck bay where trailers are stored inside to receive dewater solids due to increasing signs of age-related wear. The truck bay is located one floor below the floor supporting the dewatering equipment.

Wright-Peirce performed the evaluation. After performing a site visit that noted multiple structural deficiencies, Wright-Pierce arranged for a series of thirteen core samples to be taken by S. W. Cole, a material testing company, to be assessed for compressive strength and petrographic analysis. Compression tests would determine the strength of the concrete; petrographic analysis would determine the concrete's chemical composition. Six core samples collected from areas with no signs of cracking were first tested.

The compressive strength of the six core samples ranged from 1,720 psi to 2,280 psi with an average strength of 2,158 psi. The design compressive strength of the concrete should be 3,000 psi based upon the original design drawings prepared by Environmental Engineers dated June 17, 1977. After finding the compression test results is uniformly deficient across the slab, it was determined the petrographic analysis was no longer necessary and not performed.

Wright-Pierce recommends a full depth replacement of the entire concrete slab in the truck bay due to the 'consistently deficient compressive strength of the concrete across the garage area'. They further recommend an epoxy floor coating to be applied to the top surface of the slab to protect from water infiltration and exposure to corrosive materials. The estimated cost of the work is \$3,000,000.

This work should be performed in advance of refurbishing the dewatering equipment due to the acute issues they immediately present.

Discussion

The Department recommend directing \$3,000,000 of the funds originally appropriated for the dewatering equipment refurbishment to be directed towards the full depth replacement of the concrete slab, delay the schedule to refurbish the dewatering equipment a year, and restore the necessary funding in the FY 2026 capital budget for this project so it may proceed one year later than originally planned.

Cc Daniel Driscoll, Wastewater Superintendent