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memo

to: Steve Popper & Hank Haff

from: Joel Bargmann

date: September 29, 2021

project name & number: Needham School Administration offices

subject: **Hillside School Soils** (Amendment to the September 24, 2021 Options Memo)

cc: Deborah Robinson

This memo expands on the soil removal costs for the renovated or new building for the School Administration offices at the Hillside School site.

A new building will require demolition of the existing 1959 original building, the addition, and the modular classrooms. Demolition of the original building and addition require extensive removal of foundations. In addition, the original wing has various utility trenches and tunnels below the floor slab that will have to be removed. This removal will require excavation to a depth of 5.5 feet within the footprint of the building and additional depth where the building sits on a hillside. The modular building foundations will also have to be removed and these foundations are less complicated, requiring less excavation.

All options considered, (6A, 6A' and 6B) will generate significant debris and excess soil as a result of the demolition excavation process. For purposes of the September 2021 study, the cost estimate assumed that the soil would be transported to a landfill that accepts contaminated soils. A unit price for this removal and transport was provided by the Town's LSP. Should the soil test out as not being contaminated, it could be transported to a less restrictive landfill. A question was asked as to what the difference in cost could be between the two landfills.

Lord Associates, Environmental Engineers, prepared a report in September 2012 and provided cost for off-site disposal of this material if it was not contaminated fill. The estimated amount was \$378,000. Using published construction cost escalation factors from 2012 to 2021 (1.055 per year) this cost becomes \$612,000 in 2021 dollars. The difference in cost between disposal of contaminated soil and non-contaminated soil is thus estimated to be within a range of \$300,000 to \$400,000 depending on the option considered.

Lord Associates also discusses on-site remediation of the soil will increase the disposal estimates to a range of \$764,000 to \$1,160,000 in 2012 dollars. That range in 2021 dollars is \$1,237,000 to \$1,878,000. On-site remediation is significantly more costly than the \$900,000 to \$1,000,000 cost range carried for off-site disposal of contaminated soil in the September 2021 memo.

The contaminated condition of soil below the Hillside School will be unknown until such time that the building, addition and modulars are demolished. For this reason, the more conservative soil removal cost that assumes the presence of contaminated soil was carried in the report.