



75 State Street Suite 701
Boston, MA 02109
tel: 617 452-6000
fax: 617 345-3901

August 8, 2018

Mr. Michael J. Black
Construction Project Manager
City of Cambridge
795 Massachusetts Avenue
Cambridge, Massachusetts 02139

Subject: Tobin School – Geotechnical and Environmental Siting Considerations and Recommendations

Dear Mr. Black:

For the past year, CDM Smith has been conducting geotechnical and environmental investigations at the Tobin School site located at 197 Vassal Lane in support of the City's plans to construct a new school campus (Tobin School) for pre-K through 8th grades students currently attending the Tobin Montessori School and Vassal Lane Upper School.

Since the location of both the existing school and field was a former clay pit that was used as a municipal dump site, the Tobin School and Callanan Field are regulated under the Massachusetts Contingency Plan (MCP). There is a Permanent Solution on the property with an Activity and Use Limitation (AUL) supporting its current use as a school and playing fields.

CDM Smith has performed several soil borings and test pits to document the soil and waste material conditions. Groundwater monitoring wells have also been installed and tested to document the groundwater conditions. CDM Smith has provided the City with a DRAFT Geotechnical Field Exploration Program and Environmental Site Assessment Report summarizing the nature and extent of waste/fill materials at the site.

CDM Smith has met with the City and developed several potential alternatives for remediation and construction based on an assessment of the site. CDM Smith has created and recommended an Alternative and Evaluation Criteria Matrix to aid all with the evaluation of the alternatives.

There were 14 components of the evaluation Matrix which fell into four categories:

- Planning Considerations
- Design Considerations
- Construction Considerations



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- Cost Considerations

The 4 most critical of the 14 components of this Matrix are listed below. Each of these categories was given the highest weighted score in the Matrix.

- Safety during construction
- Disruption of School and Students during construction
- Disruption to community during construction, i.e., Traffic, Noise, Dust, Odors etc.
- Public Health Considerations

The Primary Alternatives compared to these 14 Matrix components consisted of various combinations of the following:

- Swing Space (moving the students out of the existing school during construction) versus no Swing (students remain in the existing school during construction)
- Building the new Tobin school on Callanan Field side of the property (flip) versus building the new Tobin school at the location of the existing school (no flip).
- Various types of remediation activities during construction, i.e., excavation and off-site disposal of soil and waste materials, in-situ stabilization of soil and waste materials, partial removal and capping of soil and waste materials.
- Various Foundation options based on the different remediation and design considerations, i.e., deep versus shallow foundations.

Below is a summary of the alternatives evaluation:

- Alternatives with “no swing” (i.e., kids stay in the existing school during construction) tend to rank the lowest based on several factors including safety, schedule, and public health considerations.
- Alternatives with “no flip” (i.e., new school is located at the location of the existing school) tend to rank the lowest based on several factors, primarily due to the fact that the construction schedule would be shortest with alternatives where the new school construction could start on the existing fields while the existing school is being demoed.
- Alternatives with “partial removal” tend to rank lower due to the implications of leaving untreated waste material beneath the school.

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- Moving forward with a more detailed evaluation, a final alternative may be selected that includes some combination of complete removal (e.g. beneath the new school) and partial removal with in-situ remediation (e.g. beneath the proposed fields.)

Conclusions

- It is recommended that students be relocated to Swing space so that the building is unoccupied during construction. This recommendation is based on the following:
 - Safety concerns for the students during remediation/construction (e.g. heavy equipment, substantial excavations, contaminated waste material)
 - Public health considerations for the Tobin school community because students remain within the site limits where remediation activities are being conducted associated with the former dump site
 - Disruption to the students during construction due to the traffic, noise, odors and dust issues
 - Significant Impacts to the construction schedule and logistics if students remain in the building
- The shortest construction schedule could be achieved by locating the new school where the Callanan Fields currently exist and constructing the new school fields where the existing school is located.
- The abatement and demolition of the existing school could occur while excavation/remediation activities are being conducted at the new school site (i.e., Callanan fields), which could possibly shorten the overall construction schedule by up to a year versus other alternatives. This will be confirmed as part of the Feasibility Study.

In conclusion, further evaluation is required to determine the optimum combination of remediation alternatives, i.e., removal of waste, in-situ treatment of waste, partial removal and capping of waste.

Further evaluation is required during design to determine the optimum foundation support system, i.e., deep versus shallow foundations.



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If you should have any questions or require additional information, please do not hesitate to contact me at (617) 452-6302.

Very truly yours,

A handwritten signature in black ink that reads "Kathleen Murphy". The signature is written in a cursive style with a long, sweeping underline.

Kathleen Murphy, P.E., LSP
CDM Smith Inc.

cc: Carol A. Rego, P.E.

