



December 7, 2016

Ms. Alison Steinfeld
Director of Planning and Community Development
Town of Brookline
333 Washington Street, Third Floor
Brookline, MA 02445

RE: Response to GEI Letter (November 17, 2016)
Zoning Board Review of Proposed Redevelopment
1180 Boylston Street, Brookline, MA

Dear Ms. Steinfeld:

Fuss & O'Neill, Inc. (Fuss & O'Neill) has prepared this letter to support the Town of Brookline Zoning Board of Appeals (ZBA), in response to the letter prepared by GEI Consultants (GEI) on November 17, 2016. GEI's November 17, 2016 letter was prepared in response to Fuss & O'Neill's November 1, 2016 *Environmental Technical Review* (ETR). For each of the seven items identified in Fuss & O'Neill's ETR, GEI issued comments and/or further recommendations. Fuss & O'Neill has prepared a response to each of those items below.

Comment Review and Response

Based on the review of GEI's response letter from November 17, 2016, Fuss & O'Neill developed additional comments and recommendations for the seven identified issues, discussed below:

1. Short-term dewatering during construction

The ETR noted that a *Notice of Intent and General Permit* under Environmental Protection Agency (EPA) purview will regulate short-term dewatering during construction at the Site. Fuss & O'Neill proposed that the ZBA could review permit documents and/or inspect the treatment system during dewatering to ensure proper dewatering practices. GEI responded with no objections to this recommendation and Fuss & O'Neill has no additional comments.

2. Long-term dewatering and groundwater control

The ETR stated that dewatering and discharge to the public drain system could continue post-development at the Site, based on a preliminary design put forward by GEI, and that such a discharge would be regulated by the EPA in the same fashion as short-term dewatering. Fuss & O'Neill additionally noted that a continuous extraction and discharge of contaminated groundwater could be viewed by the Massachusetts Department of Environmental Protection (MassDEP) as a

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change in remediation activity, which could require permitting and approval through the MassDEP cleanup program. GEI indicated that the on-site building should have a heavy waterproofed structural slab to resist the buoyant force, eliminating the need for an underdrain and post-construction groundwater discharge.

Fuss & O'Neill notes that this approach, if properly designed, installed and maintained, may be feasible, and would eliminate the discharge to the drain system and the associated need for EPA permits. The responsibility for an appropriate design would remain with the applicant. We reiterate that it is critical that the waterproofing is effective, and that the waterproofing system be properly completed.

As noted in the ETR, the waterproofing is both a means to control water intrusion and pressure at the foundation, and a critical element of the environmental control, impeding vapor-phase petroleum compounds from migrating into the structure. As the long term effectiveness and integrity of the waterproofing is critical to protecting the occupants of the proposed building as an environmental control, Fuss & O'Neill recommends to the ZBA the following:

- The waterproofing system should be explicitly referenced in any ZBA approval as an environmental control measure to protect the occupants of the building and mitigate public health issues potentially posed by the residual petroleum contamination in the ground at the site.
- The waterproofing system should be designed and stamped by a Professional Engineer and provided to the Town with sufficient time for review by a consultant representing the Town prior to construction.
- The Town's consultant should, based on review of the design, propose a means for the Town or its consultant to inspect and verify the proper installation and function of the waterproofing system during construction. The applicant should be made aware of the potential for a third-party inspection process and cost for the Town's consultant to verify the waterproofing is properly installed and operates effectively and as intended as an environmental control.

3. On-site accumulation of remediation waste

In the ETR, Fuss & O'Neill noted that a significant volume of potentially petroleum-contaminated soil and rock would be handled during the course of construction, and recommended several potential approaches to ensure that the developer disposes of excavated material properly and in a timely fashion. GEI responded that the volumes and costs for disposal of remedial waste have not been finalized.

In the absence of estimated disposal volumes provided by GEI, Fuss & O'Neill has developed some volume estimates to allow the ZBA to consider the potential magnitude of stockpiled soil and



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rock. Assuming that an average of three feet of surface soil across the approximately 14,000 square-foot property meet the definition of “remediation waste” per MassDEP regulation, the total volume of remediation waste managed could exceed 1,500 cubic yards. Since the actual depth of cut on-site, as initially proposed, is in the range of 20 feet below grade, the total volume of soil and rock managed in construction could exceed 10,000 cubic yards, and the portion which is “remediation waste” may be greater than 1,500 cubic yards.

The stockpiled materials may contain oil and/or hazardous materials that could pose a nuisance to neighbors and passersby at the site if dust is not adequately controlled or the stockpiles remain on-site for an extended duration.

As indicated in the ETR, we recommend that the ZBA implement a measure to ensure that the stockpiled materials are removed in a proper and timely fashion as part of any approval to commence the site development. Such measures could include limitations on volumes of materials stored, requirements to live-load and immediately dispose excavated materials, or financial assurances that would provide the Town with the means and funds to remove some portion of the remediation waste if removal of stockpiled materials did not occur in a timely fashion.

4. Bedrock removal

The ETR stated that the project will require rock removal to reach foundation grade. Fuss & O'Neill recommended that the ZBA prohibit blasting as a method of removal due to the presence of proximal neighbors and contaminated groundwater in the bedrock. GEI agreed with the request to not use blasting at the Site, and Fuss & O'Neill has no additional comment. We recommend that a blasting prohibition be included in any ZBA approval granted for the project.

5. Vapor intrusion

As noted above and in the ETR, ventilation of the parking garage is proposed both to control vehicle exhaust and act as an environmental control to mitigate the potential for residual petroleum vapors to migrate into the proposed building and create an exposure potential to the vapors by occupants of the building. Consequently, a generator or back-up power system was recommended in the ETR as a redundant measure to ensure the continuous operation of the ventilation system. GEI concurred that maintenance of the ventilation system is necessary, but did not comment on the recommendation of a generator or back-up power system. Redundant power would be necessary to maintain ventilation of the garage during power outages.

As the long term effectiveness and operation of the ventilation system is critical to protecting the occupants of the proposed building as an environmental control, Fuss & O'Neill recommends to the ZBA the following:



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- The ventilation system should be explicitly referenced in any ZBA approval as an environmental control measure to protect the occupants of the building and public health issues potentially posed by the residual petroleum contamination in the ground at the site.
- The ventilation system design should be designed and stamped by a Professional Engineer and provided to the Town with sufficient time for review by a consultant representing the Town prior to construction.
- The Town's consultant may, based on review of the design, propose a means for the Town or its consultant to inspect and verify the proper installation and function of the ventilation system during construction. The applicant should be made aware of the potential for an inspection process and cost for the Town's consultant to verify the ventilation is properly installed and operates effectively and as intended as an environmental control.

6. Responsible parties

Fuss & O'Neill advised the ZBA to establish the relationship between Cumberland Farms and Chestnut Hill, specifically regarding responsibility for post-development environmental compliance. As noted in the ETR, Cumberland Farms no longer owns the property, but has performed long-term monitoring and historically performed remediation activities at the site. Fuss & O'Neill noted that the significant change to property use could affect the relationship between responsible parties on the site. GEI stated in its response to the ETR that the responsibility for remediation at the Site will be resolved between Cumberland Farms and the current property owner.

The property is proposed for residential use and has not achieved a "condition of no significant risk" under the MCP. In addition, the applicant has proposed two features, waterproofing and ventilation systems, that will operate as environmental controls intended to address potential risks posed by the residual contamination to occupants of the proposed site building. It is critical that these environmental controls be maintained in a manner which eliminates the potential for environmental risks to the residents. The long-term remediation is a critical step to ensure the safety of the future users, and the ZBA should ensure that a party (either the developer or Cumberland Farms) accepts these obligations before the project is constructed.

At this point, the responsibility for environmental compliance and maintenance of the environmental controls is not clear to the ZBA and therefore Fuss & O'Neill recommends that any approval by the ZBA be contingent upon the applicant being held responsible for both environmental compliance at the site and the proper function and operation of the environmental controls proposed by the applicant.

7. Environmental Quality

Fuss & O'Neill opined that over time, the proposed development should reduce levels of petroleum in the subsurface at the Site if implemented properly, as stated in the ETR. GEI agreed

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with this conclusion and reiterated that long-term dewatering will no longer be a part of the foundation design. Fuss & O'Neill recommends that the ZBA reference the foundation design and waterproofing system in its approvals as critical environmental controls to eliminate vapor intrusion risks, as groundwater containing petroleum will no longer be directly conveyed away from the building in its operating state.

Conclusions and Recommendations

Fuss & O'Neill reviewed GEI's response, dated November 17, 2016, to the ETR. The majority of the items were addressed and GEI provided its concurrence, or additional detail to satisfy these conditions. We offer the following conclusions and recommendations:

- As to Item 2, relating to the foundation installation, we reiterate that the waterproofing system is a critical feature for both water control and vapor intrusion, and we recommend that the ZBA reference this feature in any approvals as an "environmental control" to be incorporated into the development. Further, we note that elimination of the potential for long-term dewatering will reduce the impacts to the municipal drain system and limit changes to the groundwater flow in the vicinity of the site. However, doing so also necessitates proper design and installation of the waterproofing to prevent flooding or structural damage to the foundation.
- As to Item 3, relating to the accumulation of remediation waste, we recommend that the developer put forward a strategy for managing its remediation waste, along with an estimate of the potential volume of remediation waste to be managed in the course of the project. The ZBA may revisit Fuss & O'Neill's earlier recommendations for soil management conditions (financial assurance, volume limits, etc.) in light of that additional information.
- Item 6, relating to the responsible party / developer relationship, should be resolved before construction, as the responsibility for long-term maintenance of the structural controls (i.e. vapor barriers) and remedial actions (i.e. natural attenuation of the petroleum) are critical elements of risk reduction, especially since the property is proposed for residential use.



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Please feel free to contact the undersigned with questions or comments.

Sincerely,

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