December 6, 2020

Zoning Board of Appeals
Town of Arlington
51 Grove Street
Arlington, MA 02476

RE: **Water Issues – Mugar Property - Thorndike Place Development**

Dear Zoning Board of Appeals Members:

I am writing in regard to the proposed Thorndike Place development. The changes generated by this proposed project would have a devastating impact on the neighborhood. There are three major issues:

- Removal of trees
- Sewage system limitations
- Stormwater management

As everyone should be aware, the neighborhood where this proposed project is located has major issues with water, particularly with a high groundwater level and subsequent basement flooding, and developing this project will only make them worse. When it rains a lot, the water table rises and impacts basements in the area. In many areas, the groundwater rises to the surface and ponds.

Trees help lower the water table by drinking up groundwater. Removing trees will impact the groundwater level in the area. Replacing trees with impermeable surface will further reduce the area that can act as a sponge and soak up water. Trees also take carbon dioxide, a greenhouse gas out of the air and help efforts to fight global warming. In addition, trees provide cooling and help mitigate the urban heat effect, reducing the energy use for cooling in the summer. We need to do everything we can to combat climate change which has known negative impacts to this area due to storms with increased rainfall and subsequent flooding. Lastly, trees provide much needed habitat for animals and birds and should be preserved.

The proposed project will add a significant amount of sewage to the system in the area. The system relies on gravity to work properly. Much of the piping is in contact with the groundwater, particularly when it rains a lot and the groundwater level rises. Unfortunately, this old piping has leaks and allows groundwater to infiltrate. During the big storms of October 1996 and March 2010, sewage was bubbling up out of the manhole in Margaret Street at the entrance to Thorndike Field (it is labeled as sewer not stormwater). There are serious questions about the capacity of the sewage system to safely handle the significantly increased flow the proposed project will generate.

Stormwater management is of the greatest concern. The stormwater management and compensatory system must be designed using the current industry-standard which is the100-year rainfall amount supplied by NOAA or Cornell. **Using old rainfall data published in 1961**

(Technical Paper 40) is unacceptable and morally wrong. Scientists and lay-persons alike know that climate change has increased the frequency and intensity of high-rainfall events since the pre-1960 years, and are only going to increase further as climate change continues. The system must at least be able to handle the amount of rainfall that professional and ethical stormwater management engineers use – the NOAA or Cornell data sets – and provide adequate compensatory storage. There are other negative impacts associated with the proposed project, including:

- Retention ponds will raise the groundwater level around them (mounding) and impact homes located in close proximity.
- All outlets from stormwater management structures must be located far away from nearby homes because the groundwater level will be raised locally around the outlet.
- Any below ground level areas of the proposed building will be in contact with the groundwater, particularly when it rises during and after storm events. This will interfere with groundwater flow, creating a barrier and raising the groundwater level upgradient, increasing basement flooding of nearby homes.
- **Over time, initially tight construction will develop cracks and the groundwater will enter below-ground stormwater management structures rendering them ineffective.** In addition, they will interfere with groundwater flow as discussed in the prior bullet.

Bottom line – given the existing high groundwater level in the neighborhood, particularly during and after storm events, the project will have devastating impacts on the neighborhood. Please do not allow it. Please contact me with any questions or for additional information.

Sincerely,

Jennifer Griffith
4 Edith Street
Arlington, MA 02474