

**TOWN OF WELLESLEY**  
WELLESLEY, MASSACHUSETTS 02481

DAVID J. HICKEY JR., P.E.  
TOWN ENGINEER

DOUGLAS R. STEWART, P.E.  
ASSISTANT TOWN ENGINEER



20 MUNICIPAL WAY  
781-235-7600  
FAX 781-237-0047

DEPARTMENT OF PUBLIC WORKS  
ENGINEERING DIVISION

January 18, 2018

Lenore Mahoney, Executive Secretary  
Wellesley Zoning Board of Appeals  
525 Washington Street  
Wellesley, Ma 02482

**RE: ZBA 2017-99**

Dear Lenore,

The Department of Public Works (DPW) has reviewed the development plans focusing on the civil engineering and site issues, and more specifically, the stormwater management. Specifically, we reviewed:

1. Plan set title: "Wellesley Square Residences, ZBA Submission" consisting of 18 sheets, dated 11/16 and 17, 2017;
2. Comprehensive Permit Application for Wellesley Crossing, dated November, 2017; and
3. Mackenzie Engineering Group (MEG) Preliminary Hydrologic Analysis, dated 11/30/17.

In general, we feel there are still significant deficiencies with the above listed materials that prohibit a complete review, as well as a number of designer decisions and assumptions that seem inappropriate. These are outlined below. Furthermore, the plans do not reflect the topographic, geologic and other site limitations, chiefly because stormwater and ground water management do not seem well considered and impacts to Hollis Street seem significant.

**Application Deficiencies**

We believe the application remains deficient in several ways. These were listed in our previous letter and in some cases additional information is provided.

**1. Water and Sewer:**

The proposed project will consume 17,050 gallons of water per day, and discharge a similar amount of sewerage. No fire flow tests or assessment of the sewer system has been made to confirm that the network can sustain this impact. Wellesley DPW's most significant concern is with the sewer network, which has little surplus capacity in this area. It may be necessary to conduct network improvements such as Infiltration/Inflow mitigation, to assure that the system has capacity for peak flows.

**2. Stormwater:**

To mitigate for the 28% increase in impervious area, the applicant proposes 17 infiltration areas and has assumed a "B" class soil with an infiltration rate of about 1" per hour, however the four largest infiltration areas are located within ledge and no information about the ledge competency, ground

water level or the ability to infiltrate has been submitted. We note that one infiltration area is a proposed 15-18' ledge cut, which seems more likely to collect groundwater than to infiltrate stormwater into the ground. The largest proposed infiltration area is entirely within the foundation of the existing house at 6 Delanson Circle, where the soils are likely to be very disturbed and, where again, there is likely to be some limiting impacts from the surrounding ledge. Please note that this infiltration area has no outlet control, and in extreme conditions will overflow to a series of cascading retaining wall with planting areas and the projects courtyard. This infiltration area will also be very difficult to inspect and maintain because it is located above, and is walled off from, the majority of the site.

As we mentioned in our previous letter, most of the infiltration areas are located upgradient and very close to key structures, including tall retaining walls and garage foundations. We believe that this raises structural concerns. The applicant has provided no information on foundation drains or building sumps and we are concerned, given the depth of the structure and a relatively shallow groundwater elevation, that dewatering will be required for the proposed structure. Given the limited discharge options and presence of ledge, there is potential that any groundwater discharge could negatively affect the performance of the proposed stormwater infiltration areas.

These deficiencies in the application are particularly concerning because the applicant is proposing a connection to the municipal stormwater system, characterized as an overflow. Without a more detailed analysis to the contrary, we believe the design will negatively impact the Town's drain network. We note that connections to the municipal system are generally discouraged, and only permitted by a DPW connection permit, where it can be demonstrated that there is no impact to the municipal system. As stated previously, the DPW is concerned that several sensitive downstream issues have yet to be addressed.

### 3. Construction Management:

No additional information was submitted relating to the how the project will be constructed. It seems likely that there will be a significant impact to the surrounding rights of way, and possibly nearby private property as there appears to be little to no space for staging materials or erecting the building, and it does not appear to be accounted for in the design. It seems clear that the grading around the ledge and the foundation for those retaining walls located close to the property line will likely impact the abutting private property.

### 4. Blasting and Ledge:

We did not find any additional information addressing our concerns with the amount of ledge proposed to be removed by the project, and remain concerned that there is a potential for off-site impacts related to noise, dust, debris and groundwater impacts.

### 5. Miscellaneous:

The application is still lacking information related to refuse disposal, site lighting, and snow management.

## **Other Concerns**

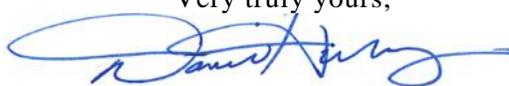
In addition to the deficiencies listed above, there were several areas of concern that surfaced as we reviewed the hydrologic assessment. The applicant proposes to build a series of planted beds along the frontage of both Linden and Hollis Streets. The grading around the beds is confusing, as sometimes water is shed toward them and sometimes away from them. It appears that runoff from the site, as well as from the roof, is directed to them but we were unable to assess them as no profile, or details on how they function have been provided. We are concerned with the ability of those planted beds to function in all seasons. We also note that there will likely be conflicts with both sidewalk users and street users, as the planted beds are very close to the right of way. Here again, a general assumption on the infiltration rate was used, based on the historical maps of the underlying soil. We feel this does not address the 'engineered soil' that will likely be used in the planters, nor does it take account for seasonal variations, such as frozen conditions or decreases related to age. It is our understanding that planted beds are generally used to add biological treatment and improve water quality, and are designed based on the water quality volume, yet no calculations were submitted by the applicant for

the water quality volume or the biological uptake. Loss of function of these planted beds, whether due to poor design, lack of maintenance, or extreme weather will negatively affect the abutting rights of way. We are also concerned that the designer is not accounting for the impact of the garage structure, which is larger than the building and will limit runoff in some of the proposed lawn and patio areas.

The plan is also missing critical details related to most of the proposed pipes including sizes, slopes and material. The hydrologic assessment states that the project meets the MassDEP Stormwater Standards, but a detailed accounting of each of the ten standards is not provided. We are concerned that the project as currently designed does not meet all of the standards, particularly TSS removal.

We have reviewed the available material. It is clear that much of the necessary analysis is missing or is only partially complete. We urge the applicant reconsider the siting and sizing of the building, with an eye toward: the true site conditions, constructability, stormwater and ground water management. We are available to answer any questions or to follow up on any other issues raised here.

Very truly yours,

A handwritten signature in blue ink, appearing to read "David J. Hickey, Jr.", with a stylized flourish extending to the right.

David J. Hickey, Jr., P.E.  
Town Engineer

cc: Mike Pakstis  
Doug Stewart  
Meghan Jop  
Tom Harrington