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April 30, 2021

Mr. John Fields, PE  
Land Use Coordinator  
Zoning Board of Appeals  
11 Townhouse Rd.  
Weston, MA 02493-7320

**Subject: Wetland Impact Review, Hanover-Weston 40B  
518 South Avenue**

Dear Mr. Fields and Board Members:

This report examines potential wetland impacts that may result from the development of the proposed Hanover-Weston 40B project. Of note, I advised the ConCom in spring of 2019 as it reviewed a Notice of Resource Area Determination (ANRAD — filed by the applicant to document wetland resource areas) for the same site. An Order of Resource Area (ORAD) was subsequently issued by the ConCom, affirming wetland resource areas. That ORAD was appealed by abutters to MassDEP and a superseding order affirming the ConCom’s decision was then issued by MassDEP.

I have been working as the peer reviewer for the Conservation Commission (ConCom) since the applicant filed a Notice of Intent (NOI) with the ConCom in June of 2020. As you know, an NOI is required by MassDEP whenever work is proposed within 100 feet of a protected resource area. The NOI before the ConCom is still pending, and hearings have been continued to the end of June, 2021.

Documents I reference for this report include:

- All wetland-related documents filed by the applicant with the Zoning Board and with the ConCom through March 19, 2021.

**GENERAL COMMENTS**

This analysis is based on regulations issued by MassDEP under the Wetlands Protection Act (WPA). The Town of Weston has no wetland bylaw. The ConCom adjudicates filings based solely on the WPA.

Massachusetts’ 40B regulations do not allow the waiver of the MassDEP WPA regulations (unlike a local bylaw). The ConCom, and not the Zoning Board, retains the authority to determine whether a 40B project complies with the WPA regulations.

## **WETLAND-RELATED COMMENTS**

### Protected Resource Areas

The Hanover-Weston 40B project contains multiple state-protected wetland resources. Those are:

- Bordering Vegetated Wetlands (BVW);
- A stream which lies within the BVW (the stream is a first order, intermittent tributary to Bogle Brook. Bogle Brook itself lies approximately a half mile (> 3,000 feet) to the south and on the other side of the Mass Turnpike. Bogle Brook runs into Nonesuch Pond, which is almost two miles away from the site);
- Bank, associated with the stream; and
- Land Under a Waterbody, also associated with the stream.

### Buffer Zones

The project, as it applies to the ConCom's jurisdiction, is for work in the buffer zone beside BVW. The NOI indicates that no impacts to resource areas will occur. That said, the Hanover-Weston 40B project proposes extensive work within the 100-foot buffer

Both the BVW and stream have a 100-foot buffer zone that extends outward from their edge. The buffer zone is *not* a no-build zone, but rather an area that triggers a filing with the ConCom when work is proposed therein.

I note also that once a filing is received by the ConCom, work proposed within the 100-foot buffer is then analyzed by the ConCom to determine if the work impacts a protected resource area. In addition, any stormwater system outside of the 100-foot buffer that drains or terminates within that 100-foot buffer falls in its entirety under the ConCom's jurisdiction. This is the case for Hanover-Weston.

Please note that the ConCom encourages applicants to avoid all work within 25-feet of a resource area; this is a *policy* only, and not a town bylaw or state regulation. With the exception of proposed work at the entrance to the emergency access road off South Avenue, the project honors the Commission's policy for work within the 25-foot buffer to BVW.

Although minimal work would occur in the 25-foot buffer to BVW, extensive site alterations are proposed 25 to 100-feet from the BVW edge. These changes include the addition of buildings, parking, drives, grading alterations and installation of various utilities. Further, existing trees within the 100-foot buffer zone would be eliminated. A landscaping plan is included with the NOI which indicates that trees will be replaced at a greater than a 1:1 basis.

### Buffer Zone Performance Standards

The NOI pending before the ConCom meets MassDEP WPA standards for work in the 100-foot buffer zone. Work within this zone is mitigated by best management practices, including adequate erosion controls. Further, preservation of a large portion of the 25-foot buffer in its natural state — including protection of soils, topography and vegetation — supports conservation of existing BVW. (This general evaluation aside, please see my observations on page 4 under Potential Wetland, Stream and Associated Water Resources Impacts.)

### Stormwater Regulations

MassDEP Stormwater Regulations are also adjudicated by the ConCom. Those regulations exempt certain projects. The Hanover-Weston project is *not* exempt and must comply with the state stormwater provisions. The applicant proposes numerous stormwater-related infrastructure, which I discuss below.

### FEMA Floodplain

The project is not impacted by any FEMA floodplain.

### Endangered Species

The Hanover-Weston project lies outside NHESP-designated endangered species polygons. Based on existing MassGIS data, endangered species have not been identified on or near the site.

## **TECHNICAL COMMENTS**

### Stormwater Report

The stormwater design has evolved substantially since the applicant's NOI was filed in mid 2020. A redesign of the stormwater system was submitted to the Board and to the ConCom in March of 2021. An on-line technical meeting was held on 4/29/21 between the applicant's engineers and town representatives. Those revisions are still under review. That said, in general:

- The precipitation data reflects the most current predictions.
- A "green roof" system is now proposed for a large portion of the project's impervious building.
- Runoff is discharged into a series of subsurface chambers (which act as a subsurface detention pond), and then infiltrated on site via CulTec chambers into the underlying groundwater.
- Because of the limited area of the site, a substantial number of the subsurface chambers lie beneath the main building.
- During extremely large rain events, stormwater is designed to discharge to an outlet approximately 30 feet from the wetlands at a peak rate no higher than pre-development conditions.
- Additional runoff from a portion of the road system, including runoff from a large portion of the emergency access road and from the looped portion of road south of the building, is infiltrated into the underlying substrate via porous pavement.
- Extensive deep hole testing has been conducted throughout the site to determine seasonal high groundwater and soil permeability. (I witnessed a number of these tests in January of 2021.)

### Porous Pavement Maintenance

To maintain its permeability, porous pavement requires constant maintenance. The maintenance schedule for the porous pavement access road complies with MassDEP requirements, which rely on University of New Hampshire (UNH) guidelines. The UNH guidelines recommend vacuum sweeping on a quarterly basis minimum; the proponent proposes to do so monthly. In addition, winter sanding will be prohibited. The Operation and Maintenance Plan accompanying the plans meets or exceeds the usual requirements for this use.

### Hydrologic Evaluation

A Groundwater Discharge Permit is required by the state for disposal of sanitary wastewater from large systems. Accordingly, Sanborn-Head performed a hydrologic evaluation in mid 2019. That evaluation was subsequently approved by MassDEP in December of 2019.

A follow-up Hydrologic Report was then conducted in coordination with MassDEP in early 2020. That report was approved by MassDEP in June 2020. These two analyses allow the proponent to proceed to final Title 5 design. The state approvals were granted without unusual conditions or constraints.

#### Potential Wetland, Stream and Associated Water Resources Impacts

The Hanover-Weston project proposes to use a wastewater treatment system, given that no town sewer exists near the project. Fully operational, the wastewater system would discharge up to 38,000 gallons per day (gpd) of effluent, which converts to 5,080 cubic feet. For perspective, this quantity is at least 60 times greater than the volume generated by a typical single family home in Weston.

Unlike stormwater discharges, the wastewater volume will represent *additional* infiltration on site. The receptor of the increased volume will be the wetlands, leading to potentially greater soil saturation and higher groundwater elevations.

The applicant's technical team emphasizes that state regulations allow for these increased volumes. Particularly, they cite presumptions in both Title 5 and the WPA. The WPA (see 310 CMR 10.03(3)) states that a subsurface sewage disposal system constructed in compliance with 310 CMR 15 (Title 5) "shall be presumed to protect the eight interests identified in M.G.L. c. 131 § 40," including BVW, as long as the absorption system is "set back at least 50 feet horizontally from the boundary of" the BVW. (The proposed system meets this minimum setback.) There is a similar provision in Title 5 that mirrors the presumption found in the WPA.

The presumptions in the WPA and Title 5 are that protected resources will not be *altered* by the proposed activities. 310 CMR 10.04, defines *alter* as follows (*emphasis is mine*):

*Alter means to change the condition of any Area Subject to Protection under M.G.L. c. 131, § 40. Examples of alterations include, but are not limited to, the following:*

*(a) **the changing of pre-existing drainage characteristics, flushing characteristics, salinity distribution, sedimentation patterns, flow patterns and flood retention areas;***

*(b) the lowering of the water level or water table;*

*(c) the destruction of vegetation;*

*(d) **the changing of water temperature, biochemical oxygen demand (BOD), and other physical, biological or chemical characteristics of the receiving water.***

Based on this definition, an unresolved issue before the ConCom is whether pre-existing drainage patterns and flushing characteristics may be altered by increased wastewater volume. In addition, "physical, biological or chemical

characteristics of receiving water” may be changed by the introduction of the wastewater. I note that the WPA provides no guidance for a ConCom to quantify impacts from subsections (a) and (d).

#### Potential Wetland Impacts

The potential exists for change to soil saturation within the wetland from the volume of effluent discharge. This alteration, if it occurs, may change the diversity and type of vegetation within the wetland. Changes to dissolved oxygen and changes to the chemical characteristics of the soils, groundwater and stream may effect amphibians, reptiles and other animals within the system. In addition, questions have been raised during the ConCom hearings regarding whether the intermittent stream itself may flow for longer periods. The applicant has submitted professional opinions to the ConCom which discuss these issues.

#### **SUMMARY**

The proposed project appears to impact only the buffer zone to BVW; the Commission may determine that project impacts are — as discussed immediately above — more complex. The applicant has proposed to mitigate potential impacts using best management practices. In addition — and subject to final review of the most recent revisions — the stormwater system is designed to comply with MassDEP regulations. Last, as I have noted, no direct impacts to protected wetland resources are proposed.

Notwithstanding the proposed design elements, the ConCom has not determined whether impacts to the BVW and stream will occur as a result of the proposed effluent discharge. *This issue remains one of the key wetland-related questions associated with the project.*

Please contact me with questions.

Very truly yours,



Wetland Scientist, Hydrologist