

Horsley Witten Group

Sustainable Environmental Solutions

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September 30, 2024

Ms. Jacki Byerley, Planner
Andover Planning Board
Town Office
36 Bartlett Street
Andover, MA 01810

Ref: Sixth Peer Review of the Stormwater Design
Eden Estates – Definitive Subdivision
9 Bancroft Road, Andover, MA

Dear Ms. Byerley and Board Members:

The Horsley Witten Group, Inc. (HW) is pleased to provide the Andover Planning Board with this letter report summarizing our sixth peer review of the Stormwater Management for the proposed residential development for Eden Estates at 9 Bancroft Road in Andover, Massachusetts. We understand that Eden Lane LLC (Applicant) has applied for Approval of Definitive Plan for a three-lot subdivision on a 3.88-acre parcel. The Applicant is proposing to construct a 380-foot-long cul-de-sac, with sewer, water, and stormwater management to access three proposed house lots. To capture, treat, and manage the stormwater runoff from the proposed roadway, the Applicant is proposing to install a closed drainage system, a drainage swale, and a detention facility with a forebay. A subsurface drywell will be installed at each house to manage the proposed roof runoff. No wetlands are indicated on the Existing Conditions Plan.

The following additional documents and plans were received by HW in response to our fifth peer review letter, dated August 30, 2024:

- Letter to Planning Board, regarding Runoff to Bancroft Street, prepared by DK Engineering, LLC, dated September 16, 2024 (4 pages);
- Letter to Conservation Commission, prepared by Norse Environmental Services, Inc., dated September 21, 2023 (8 pages);
- Email from Robert Douglas, regarding 9 Bancroft Road, sent September 24, 2024
- Letter to Planning Board, regarding Regrading of Infiltration Basin, prepared by DK Engineering, LLC, dated September 29, 2024 (1 page); and
- Definitive Subdivision Plan, Eden Estates, Andover, Massachusetts, prepared by DK Engineering, LLC, revised through September 25, 2024, which includes:
 - Title Sheet 1 of 8
 - Definitive Subdivision Plan 2 of 8
 - Existing Conditions Plan 3 of 8
 - Grading & Erosion Control Plan 4 of 8
 - Plan & Profile Sheet 5 of 8
 - Detail Sheet – Drainage & Erosion Control 6 of 8
 - Detail Sheet – Miscellaneous 7 of 8
 - Landscape Plan 8 of 8

Stormwater Review

HW has reviewed the documents listed above and has the following comments concerning the stormwater management design in accordance with the Massachusetts Stormwater Handbook (MSH) dated February 2008, and the Town of Andover Stormwater Management and Erosion Control Regulations amended May 11, 2021 (Stormwater Regulations).

In accordance with Section VI. B. of the Andover Stormwater Regulations the Stormwater Management Permit and Narrative provided by the Applicant shall contain sufficient information to verify compliance with the local Stormwater Bylaw and the MassDEP Stormwater Management Handbook (MSH). Below are comments relating to the standards as presented in the MSH. Where the more stringent requirements of the Andover Stormwater Regulations are applicable, those comments are included.

The following comments correlate with our fifth review letter dated August 30, 2024. Previously addressed comments have been eliminated for simplicity. Follow up comments are provided in **bold font**.

1. *Standard 1 states that no new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*
 - a. Addressed July 24, 2024.
 - b. Addressed July 24, 2024.
 - c. Addressed July 24, 2024.
2. *Standard 2 requires that stormwater management system shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.*
 - a. Addressed August 9, 2024.
 - b. Addressed July 24, 2024.
 - c. Addresses August 30, 2024.
 - d. Addressed August 9, 2024.
 - e. Addressed July 24, 2024.
 - f. Addressed July 24, 2024.
 - g. Addressed July 24, 2024.
 - h. Addressed July 24, 2024.
 - i. Addresses August 30, 2024.
 - j. Addressed August 9, 2024.
 - k. Addressed July 24, 2024.
 - l. Addresses August 30, 2024.
 - m. Addressed July 24, 2024.
 - n. Addressed August 9, 2024.

- o. Addresses August 30, 2024.
- 3. *Standard 3 requires that the annual recharge from post-development shall approximate annual recharge from pre-development conditions.*
 - a. Addressed August 9, 2024.
 - b. Addressed August 9, 2024.
 - c. It appears that the proposed stormwater basin with a bottom elevation of 286, has less than 4 feet of separation from the estimated seasonal high ground water of 282.43. HW recommends that the Applicant provide a mounding analysis as required per Volume 2, Chapter 1, page 28 of the MSH.

July 24, 2024: The Applicant has provided a mounding analysis as requested. HW recommends that the Applicant provide documentation clarifying how each of the input values was determined.

August 9, 2024: The Applicant has updated the mounding analysis. As calculated the groundwater within 50 feet from the center of the basin will mound up approximately 2.0 feet. Within 100 feet from the center of the basin groundwater will rise approximately 1 foot. HW recommends that the Applicant confirm the distance of the abutting residential house and determine whether the proposed infiltration basin will impact the groundwater beneath the house.

August 30, 2024: *The Applicant has raised the bottom of the basin to elevation 287, four feet above the ESHGW. Considering that the downgradient property is approximately 25 feet from the infiltration basin, an impermeable barrier along the western edge of the basin may be beneficial to eliminate any potential breakout.*

September 30, 2024: The Applicant has proposed an impermeable barrier to be installed to the ESHGW elevation. The detail is provided on Sheet 7 of the plan set. No further action requested.

- d. **August 9, 2024:** The Applicant has added an area drain on the east side of the infiltration basin. It is not obvious what the purpose of this area drain is. The catchment area above the area drain (SC-6) has been included in the HydroCAD model as directly entering the infiltration basin. The installation of 94 feet of 8-inch HDPE pipe may harm the roots of the 20-inch Maple tree located in this area. HW recommends that the Applicant clarify the need for the area drain and drainage pipe and eliminate it if possible.

August 30, 2024: *The Applicant has clarified the purpose of the area drain. The Applicant may want to consider other design options, including adjusting the grades to avoid the low point and the need for the area drain or consider installing a tree well to protect the 20-inch Maple.*

September 30, 2024: HW had a phone call with Daniel Koravos on September 25, 2024 to discuss potential grading alternatives to protect the 20-inch Maple Tree adjacent to the basin. The grading as proposed was determined to be acceptable. No further action requested.

4. *Standard 4 requires that the stormwater system be designed to remove 80% Total Suspended Solids (TSS) and to treat 1.0-inch of volume from the impervious area for water quality.*
 - a. Addresses August 30, 2024.
 - b. Addresses August 30, 2024.
 - c. Addressed August 9, 2024.
 - d. Addressed August 9, 2024.
5. *Standard 5 is related to projects with a Land Use of Higher Potential Pollutant Loads (LUHPPL).*
 - a. Standard 5 is not applicable.
6. *Standard 6 is related to projects with stormwater discharging into a critical area, a Zone II or an Interim Wellhead Protection Area of a public water supply.*
 - a. Standard 6 is not applicable.
7. *Standard 7 is related to projects considered Redevelopment.*
 - a. Standard 7 is not applicable.
8. *Standard 8 requires a plan to control construction related impacts including erosion, sedimentation or other pollutant sources.*
 - a. Addressed July 24, 2024.
 - b. The Applicant has not noted if any trees will be removed or if tree protection is proposed. HW recommends that the Applicant provide this information.

July 24, 2024: The Applicant has included a Tree Removal Exhibit in the Stormwater Report. It is not clear how many trees will be removed though there is a 10-inch Apple tree within the right of way and a second Apple tree along the path of the drainpipe. HW defers to the Planning Board if additional clarification for the total number of trees being removed is required.

September 30, 2024: During the public hearing on September 24, 2024, the location of trees to be removed was discussed. The Applicant agreed to flag the trees to be removed and has also marked the trees to be removed on Sheet 3 of the plan set with an X for clarification. It appears that 12 trees will be removed as part of the development. No further action requested.

- c. Addressed July 24, 2024.
- d. Addressed August 9, 2024.
- e. The proposed project requires land disturbance of greater than 1 acre. Therefore, a Stormwater Pollution Prevention Plan (SWPPP) per the EPA NPDES Construction General Permit will be required. HW recommends that the Applicant provide a copy of the SWPPP to the Town a minimum of 14 days prior to land disturbance. The Planning Board may choose to require receipt of the SWPPP as a condition of approval.

July 24, 2024: As stated previously, the Planning Board may choose to require receipt of the SWPPP as a condition of approval.

9. *Standard 9 requires a Long-Term Operation and Maintenance (O & M) Plan to be provided.*
- a. The Applicant has included a narrative regarding long term maintenance in Section IX of the Project Stormwater Report. HW recommends that the O&M Plan be submitted as a separate standalone document that is signed by the property owner/responsible party.

July 24, 2024: The Planning Board may choose to require receipt of the signed O&M Plan or the Homeowners Association documents as a condition of approval.

- b. Addressed July 24, 2024.
c. Addressed July 24, 2024.

10. *Standard 10 requires an Illicit Discharge Compliance Statement to be provided.*

- a. HW recommends that the Applicant submit an Illicit Discharge Compliance Statement signed by the property owner. The Planning Board may choose to require receipt of an Illicit Discharge statement signed by the property owner prior to land disturbance as a condition of approval.

July 24, 2024: The Planning Board may choose to require receipt of the signed Illicit Discharge Compliance Statement as a condition of approval.

11. *Earth Movement Permit*

- a. Addressed August 9, 2024.

Conclusions

HW is satisfied that the Applicant has addressed our comments. The Applicant is advised that provision of these comments does not relieve him/her of the responsibility to comply with all Town of Andover Codes and By-Laws, Commonwealth of Massachusetts laws, and federal regulations as applicable to this project. Please contact Janet Bernardo at 857-263-8193 or at jbernardo@horsleywitten.com if you have any questions regarding these comments.

Sincerely,

HORSLEY WITTEN GROUP, INC.



Janet Carter Bernardo, P.E.
Principal