

Horsley Witten Group

Sustainable Environmental Solutions

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November 2, 2022

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

Re: 4th Stormwater Peer Review
Hidden Pines Lane - Four Lot Subdivision
22 William Street, 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 fourth peer review of the stormwater management for the proposed residential development located at 22 William Street, Andover, Massachusetts. Steven & Elizabeth Leed (Applicant) have submitted an application for a proposed four-lot subdivision known as Hidden Pines Lane. The 2.33-acre parcel contains an existing house, two garages, a tennis court, and a pool with a pool house. The Applicant is proposing to construct a 315-foot-long roadway and three new houses, maintaining the existing house. To capture, treat, and manage the stormwater runoff from the proposed roadway, the Applicant is proposing to install a closed drainage system and two subsurface infiltration chamber systems, hydraulically connected, on the south side of the cul-de-sac. The plan set indicates two bordering vegetated wetland (BVW) resource areas to the west and south of the project site.

The following additional documents, plans, and correspondence were received by HW in response to our October 13, 2022 third peer review:

- Letter to Andover Planning Board, in response to the Horsley Witten Group third peer review for 22 William Street, prepared by Andover Consultants, Inc., dated October 31, 2022 (2 pages); and
- Definitive Subdivision Plan, William Wood Way, Andover, Massachusetts, prepared by Andover Consultants, Inc., dated February 1, 2022, revised through September 29, 2022 which includes:
 - Cover Sheet 1 of 8
 - Definitive Subdivision Plan (Revised October 28, 2022) 2 of 8
 - Existing Conditions & Demo Plan 3 of 8
 - Layout & Grading Plan 4 of 8
 - Utility Plan 5 of 8
 - Plan & Profile 6 of 8
 - Site Details 7 of 8
 - Erosion & Sediment Control 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 comments below correlate with the October 13, 2022 third peer review. Comments and photos previously addressed have been removed for simplicity. Follow up comments are provided in *bold italicized font* where applicable.

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. Previously addressed.
 - b. Previously addressed.
2. *Standard 2 requires that post-development runoff does not exceed pre-development runoff off-site.*
 - a. Previously addressed.
 - b. Previously addressed.
 - c. The peak discharge rate at the southern property boundary increases by 0.2 cubic feet per second (cfs) during the 2-year 24-hour storm event. Per the Andover Stormwater Regulations, the post-development peak discharge rate shall be equal to or less than the pre-development peak discharge rate. HW understands that the increased flow is attributed to DEV3 which consists primarily of vegetation that sheet flows towards the southern property boundary. HW recommends that the Applicant consider measures to eliminate the minimal increased flow.

The Applicant has revised the HydroCAD model and Stormwater Report to reflect a decrease in peak rates to the southern property boundary. The proposed design allows for a minimal discharge onto William Street from the northern end of the driveway. During a 25-year storm event the flow is proposed to be 0.1 cfs. HW recommends that the DPW confirm that this minimal flow will not negatively impact the municipal drainage system in William Street.

October 13, 2022: The Applicant has noted that the Town Engineer has not raised any concerns about the minimal discharge onto William Street. The Planning Board may choose to confirm that the Town Engineer has no objections.

November 2, 2022: The Town Engineer has provided a letter stating that he has no objection to the minimal stormwater discharge onto William Street. HW has no further comment.

- d. Previously addressed.

- e. The Applicant has utilized a woods/grass combination within DEV1 and DEV3, HW recommends that the Applicant clarify the extent of the wooded area under proposed conditions.

The Applicant has stated that the developed areas modeled as woods-grass combination are the areas proposed to be re-naturalized with pollinator seeding. HW notes that the hatched areas indicated by the Applicant to be a woods grass combination include two large subsurface chamber systems and a Drainage and Sewer Easement that should not be covered with trees. HW views these areas as proposed pasture, grassland which would be modeled with a CN value of 39 per TR-55. Per Section IX.E.4. of the Town of Andover Stormwater Regulations, post-construction runoff curve numbers should be modeled as “poor” and therefore it is HW’s opinion that a value of 68 should be utilized for this open space/grassland.

October 13, 2022: The Applicant has noted that the proposed pollinator area will resemble a non-mowed meadow. HW concurs with the proposed surface. However, HW reminds the Applicant that per Section IX.E.4. of the Town of Andover Stormwater Regulations, post-construction runoff curve numbers should be modeled as “poor” and therefore a value of 68 should be utilized for this open space/grassland. The Applicant may choose to request a waiver from the Stormwater Regulations from the Planning Board or adjust the HydroCAD model as stated previously.

November 2, 2022: It is the Applicant’s opinion that the proposed pollinator area should be modeled as a non-mowed meadow. Once the vegetation in this area is established HW agrees with the designation. However, the Planning Board’s stormwater regulations specifically require Applicants to model proposed conditions as “poor”. HW defers the acceptance of the curve number used by the Applicant to the Planning Board.

- f. Previously addressed.
- g. HW recommends that the Applicant confirm that the underground stormwater chamber systems can be installed as proposed. HW recommends that the Applicant consider placing the chambers on 6 inches of crushed stone.

The Applicant believes that the underground stormwater chamber systems can be installed as proposed. HW recommends that a condition be included in any approval issued requiring inspection of the bottom of the system prior to installation of the chambers.

October 13, 2022: The Applicant has included a note on Sheet 7 of 8 for the Contractor to notify the design engineer for an inspection. The Planning Board may choose to require an inspection by a representative from the Town or require a signed certification from a Professional Engineering stating that the subsurface was inspected and found to be acceptable.

November 2, 2022: As previously noted the Planning Board may choose to require an inspection by a representative from the Town or require a signed certification from a Professional Engineering stating that the subsurface was inspected and

found to be acceptable.

- h. Previously addressed.
- i. HW recommends that the Applicant provide a detail for the proposed drainage swale. Furthermore, documentation will be necessary to alert the new homeowners that the swale must be maintained and cannot be altered in the future.

The Applicant has provided a detail for the proposed drainage swale on Sheet 4 of 8. HW recommends that the Applicant address Comment 9b below to appropriately alert the new homeowners that the swale must be maintained and cannot be altered in the future.

October 13, 2022: The Applicant has noted that the swale will be within a drainage easement and the Homeowners Association will be responsible for the maintenance. The Planning Board may choose to require receipt of the easement language as well as the Homeowner's Association documentation.

November 2, 2022: As previously noted the Planning Board may choose to require receipt of the easement language as well as the Homeowner's Association documentation as a condition of approval.

- j. Previously addressed.
- 3. *Standard 3 requires that the annual recharge from post-development shall approximate annual recharge from pre-development conditions.*
 - a. Test Pit 2 (TP-2) data indicates fill to 6 feet below the surface. HW recommends that the Applicant conduct an additional test pit within the footprint of the proposed chamber system to demonstrate adequate separation to the estimated seasonal high groundwater (ESHGW) per MSH Volume 2 Chapter 2 Page 88 as well as the depth to natural material.

The Applicant has stated that soil testing locations were limited because the property is highly developed. TP-2 contained fill because of an old water line. Since the Web Soil Survey indicates that the entire lot and abutting properties is within a Hinckley loamy sand deposit in an area where the topography is relatively flat, the Applicant does not believe that additional soil testing is needed. The Planning Board may choose to require additional soil testing during the installation of the chambers with confirmation by a professional engineer that the bottom of the system is a minimum of 2 feet above ESHGW.

October 13, 2022: The Applicant has no objection to a condition requiring additional soil testing.

November 2, 2022: As previously noted the Planning Board may choose to require additional soil testing during the installation of the chambers with confirmation by a professional engineer that the bottom of the system is a minimum of 2 feet above ESHGW.

- b. Previously addressed.
- c. Previously addressed.

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. Previously addressed.
 - b. Previously addressed.
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 does not apply.
8. *Standard 8 requires a plan to control construction related impacts including erosion, sedimentation or other pollutant sources.*
 - a. Previously addressed.
 - b. Projects that disturb one acre of land or more are required to obtain coverage under the NPDES Construction General Permit (CGP) issued by EPA and prepare a Stormwater Pollution Prevention Plan (SWPPP). HW recommends that a copy of the SWPPP be provided to the Town a minimum of 14 days prior to land disturbance.
The Applicant is amenable to a condition requiring a copy of the SWPPP to be provided to the Town at least 14 days prior to land disturbance.
November 2, 2022: As previously noted the Planning Board may choose to require receipt of the SWPPP a minimum of 14 days prior to land disturbance.
 - c. Previously addressed.
 - d. Previously addressed.
 - e. Previously addressed.
 - f. Previously addressed.
 - g. Previously addressed.
 - h. Previously addressed.
9. *Standard 9 requires a Long-Term Operation and Maintenance (O & M) Plan be provided.*
 - a. Previously addressed.
 - b. Previously addressed.
 - c. Previously addressed.
 - d. Previously addressed.

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

- a. HW recommends that a signed Illicit Discharge Compliance Statement be provided to the Town prior to the discharge of any stormwater to post-construction best management practices.

The Applicant is amenable to providing a signed Illicit Discharge Compliance Statement to the Town prior to the discharge of any stormwater to post-construction best management practices. HW has no further comment.

November 2, 2022: As previously noted the Planning Board may choose to require receipt of the signed illicit discharge compliance statement prior to land disturbance.

11. *Additional Comments.*

- a. Previously addressed.
- b. Previously addressed.

12. *Concerns raised by abutters in 11-page document:*

- a. Previously addressed.
- b. Water line easement:
 - a) The existing property at 24 William Street includes a 20-foot-wide utility easement that the Applicant is using to loop the proposed water line. There are several large pine trees within this easement that may be impacted by the six-foot-deep trench needed to install a water line. HW recommends that the Applicant revisit the proposed location of the water service and discuss alternative locations with the Andover Water Department or document what will happen to these trees.

The Applicant has revised the location of the looped water main to be within the proposed Right of Way. The water main is no longer proposed along the western property boundary therefore the existing trees will remain if approved by the Andover Water Department.

October 13, 2022: The Water Department rejected the relocated water line. Therefore, the water line will be installed within the utility easement along the property line within the property of 24 William Street. The existing trees within this easement will need to be removed to install the line. The Applicant has not included any proposed vegetated cover within the cleared easement within 24 William Street. The vegetated cover should be confirmed and added to the site plans.

November 2, 2022: The Applicant has stated that ten mature trees will be removed from the easement to install the water line.

- b) Previously addressed.
- c) Previously addressed.
- c. Watershed flowing towards the west:
 - a) Previously addressed.

- b) Previously addressed.
- d. Previously addressed.
- e. Previously addressed.
- f. Previously addressed.
- g. Existing structures within 50 feet:
 - a) Previously addressed.
 - b) Previously addressed.
- h. Previously addressed.
- i. Previously addressed.
- j. Previously addressed.
- k. Previously addressed.
- l. Previously addressed.

Conclusions

HW recommends that the Planning Board review the need for the Applicant to adjust the curve number under proposed conditions as discussed in comment 2.e. 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.
Associate Principal