

May 5, 2021

To: Mr. Richard S. Novak, Chair
 Zoning Board of Appeals
 Town of Sherborn
 19 Washington Street
 Sherborn, MA 01770

A&M Project #: 2513-01a & 2513-02
Re: Response to Hunting Lane Neighbors Group Review
 The Pines - 41 North Main Street
 Apple Hill Estates - 31 Hunting Lane
 Sherborn, Massachusetts

Copy:

Dear Chair Novak and Members of the Zoning Board of Appeals:

Please find Allen & Major Associates, Inc. (A&M) responses to the review letter by Creative Land and Water Engineering, LLC dated April 23, 2021, provided to the ZBA on behalf of the Hunting Lane Neighbors Group. Our response is limited to the facts and recommendations as they pertain to the Stormwater systems. Please note that, as our firm is not engaged on the Water & Wastewater aspects of the projects, a response from Onsite Engineering (Onsite) regarding the Water and Wastewater comments will be provided under separate cover.

Apple Hill Estates - 31 Hunting Lane

The site consists of 16.93 acres of land in the building area. land and therefore the project will increase impervious area by 243% as shown below:

Response: **We agree that there is an increase in the impervious cover under the proposed conditions. As such, an onsite stormwater management has been designed to meet the treatment requirements of the Massachusetts Department of Environmental Protection, Stormwater Standards and Stormwater Handbook. The primary mechanisms to mitigate this increase in impervious area is through the proposed bioretention areas and the subsurface infiltration system. The result is a reduction in the peak rate of stormwater runoff to the Study Points for all design storm events**

See Recommendation #1 under Wastewater above. Extensive testing is needed in order to measure groundwater mounding due to stormwater runoff by reason of the dramatic increase in impervious area and the likely poor infiltration rate and high groundwater condition

Response: **As previously stated, through the implementation of a stormwater management system, the analysis indicates that the proposed site development reduces the rate of runoff during all storm events at the identified points of analysis. Although there is an increase in the volume of stormwater, its release has been slowed and dissipated over a larger area through the use of gabion style energy dissipater so as to not cause erosion to downstream areas. An infiltration rate of 1.02 inches per hour was assumed, based on soils found elsewhere onsite which is consistent with published NRCS soil data within the project limits. This is a conservative assumption, considering the amount of separation to native material, and the backfill material will be free draining.**

To provide some context to the stated increase in stormwater flows offsite, the stormwater flow from both SP-3 and SP-4 flow toward the existing wetland area adjacent to the railroad tracks along Hunting Lane which is almost entirely within property owned by the applicant, but not included as part of the current 40B application. In the case of Study Point #4 (east toward wetlands) the flow will travel overland through an existing wooded buffer nearly 200 feet before reaching the wetland area. In the case of Study Point #3,

stormwater flow is collected in a closed drainage system within Hunting Lane which discharges to this same wetland system just west of the railroad crossing at Hunting Lane.

This wetland area acts like a large sponge and can absorb and further attenuate any added stormwater flows which it may encounter. Based on the previously provided analysis the combined stormwater flow increase for these two study points for the 100-yr event is 26,958 cubic feet of treated stormwater. When this flow is slowed down and spread out over the approximately 298,126 square feet of existing wetland area, the rise in water level is just over 1 inch, which is insignificant. As the stormwater flows reduce for lower storm events, so does the overall water level rise in the wetland area.

Require the modeling of the impact between stormwater basins and infiltration areas and the wastewater disposal area to make sure the two systems can be properly function and not to cause negative impact on the abutting properties.

Response: As previously presented to the Board by On-Site Engineering, the project waterwater design specialist, the MassDEP hydrogeological permitting process includes a rigorous review of the proposed site assessment program prior to beginning any field work and modeling. Specifically, the process includes preparing a written hydrogeological testing and modeling scope of work that will detail the plan for test pits, borings, and monitoring wells, as well as identifying any potential sensitive downgradient receptors and stormwater interaction(s), and how the proposed discharge would be evaluated relative to those impacts.

Pine Residences – 41 N. Main Street

The site consists of 7.2 acres of land as shown on Sherborn Assessor's map 11 as lots 41 and 43; the project will increase impervious area by 201% as shown below:

Response: We agree that there is an increase in the impervious cover under the proposed conditions. As such, an onsite stormwater management has been designed to meet the treatment requirements of the Massachusetts Department of Environmental Protection, Stormwater Standards and Stormwater Handbook. The primary mechanisms to mitigate this increase in impervious area is through the proposed subsurface infiltration systems. As previously stated, through the implementation of this stormwater management system, the analysis indicates that the proposed site development reduces the rate of runoff during all storm events at the identified points of analysis.

An infiltration rate of 1.02 inches per hour was assumed, based on soils found elsewhere onsite which is consistent with published NRCS soil data within the project limits. With the use of this conservative infiltration rate, the analysis indicates that both the rate and volume have been reduced, see table below.

STUDY POINT #1 (on-site flow to Hunting Lane)				
	2-Year	10-Year	25-Year	100-Year
Existing Flow (CFS)	0.45	2.72	4.19	5.83
Proposed Flow (CFS)	0.44	1.83	3.98	5.63
Decrease (CFS)	0.01	0.89	0.21	0.20
Existing Volume (CF)	4,432	15,374	26,881	55,856
Proposed Volume (CF)	3,329	13,325	23,777	55,464
Decrease (CF)	1,103	2,049	3,104	392

STUDY POINT #2 (onsite flow to North Main Street)				
	2-Year	10-Year	25-Year	100-Year
Existing Flow (CFS)	0.81	2.50	4.08	7.67
Proposed Flow (CFS)	0.80	2.47	4.04	7.59
Decrease (CFS)	0.01	0.03	0.04	0.08
Existing Volume (CF)	3,674	9,310	14,552	26,696
Proposed Volume (CF)	3,635	9,211	14,398	26,414
Decrease (CF)	39	99	154	282

Response to Peer Review of Wang Letter
Apple Hill Estates – Hunting Lane
Sherborn, Massachusetts

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We trust that this information is responsive to the comments that were raised in the April 15, 2021 *Peer Review of Stormwater Managements Systems and Stormwater Reports* prepared by PSC. If you should have any questions or would like to discuss our responses in more detail, please feel free to contact our office.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.



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Professional Engineer in MA, ME, and NH

cc: G. Barsky - Barsky Estate Realty Trust (via email)
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