

Horsley Witten Group

Sustainable Environmental Solutions

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January 8, 2024

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

Ref: Initial Peer Review of the Stormwater Design
Town Yard Development – Lewis 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 peer review of the Stormwater Management for the proposed multi-family residential building to be located at 11 Lewis Street in Andover, Massachusetts. The plans were prepared for Andover Town Yard, LLC (Applicant) by The Morin-Cameron Group, Inc., and Arrowstreet Architecture & Design. The project site is on a 4.125-acre parcel composed of five lots. The primary development parcel known as the “Town Yard” is the former Andover Department of Public Works site that is mostly paved. The Applicant proposes to construct a 69,300 square foot (sf), 165-unit multifamily residential building with associated parking, landscaping, stormwater management system, and new utility connections. The Applicant also plans to maintain the existing single-family dwelling at 122 North Main Street and construct a 2,730-sf accessory public amenity building off Pearson Street. It does not appear that there are any wetland resource areas within 100 feet of the proposed development.

The Applicant proposes a stormwater management system that consists of various Best Management Practices (BMPs) to capture, treat, and manage the proposed stormwater runoff. These BMPs include catch basins, a subsurface infiltration system, CDS water quality units, and a Jellyfish Filter.

The following documents and plans were received by HW:

- Technical Report in Support of a Special Permit, 11 Lewis Street, Andover, MA 01810, prepared by The Morin-Cameron Group, Inc. on behalf of Andover Town Yard, LLC, dated November 15, 2023 (112 pages);
- Andover Planning Board Application for Special Permit, Andover Town Yard, LLC, signed November 14, 2023 (3 pages);
- Andover Town Yard Special Permit Application, Project Narrative, 11 Lewis Street, Andover, MA 01810, not dated (9 pages); and
- Andover Town Yard Special Permit Plan Set, 11 Lewis Street, Andover, MA 01810, prepared by Arrowstreet Architecture & Design and The Morin-Cameron Group, Inc. on behalf of Andover Town Yard, LLC, dated November 15, 2023 (44 pages).

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 Bylaw and Regulations amended May 11, 2021 (Stormwater Bylaw).

In accordance with Section VI. B. of the Andover Stormwater Bylaw, the Stormwater Management Permit and Narrative provided by an 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 residential building is considered a mix of a new development and redevelopment and intends to fully comply with the MassDEP Stormwater Management Standards. The project site includes 157,183 sf of impervious cover under existing conditions and 161,697 sf under proposed conditions for an increase of 4,514 sf (2.9%) not including gravel surfaces.

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. The Applicant has evaluated two design points that will be associated with the proposed residential building.
 - 1) Design Point 1 (DP 1) is an existing stone culvert located under the MBTA rail tracks that pipes stormwater from the former DPW yard to the municipal system in Railroad Street. Under proposed conditions, runoff from subcatchments PS1 and PS1.1 flow to this point by way of a closed drainage system. Runoff from PS1.1 will be routed into an infiltration system prior to being piped to a jellyfish filter BMP which filters water from both PS1.1 and PS1.
 - 2) Design Point 2 (DP 2) is at the southwest corner of the site where stormwater from subcatchment ES2 flows into the municipal system on Pearson Street. Stormwater from the proposed subcatchment PS2 is routed to DP2 via a closed drainage system. The total catchment area directed to DP2 from the site is reduced under proposed conditions and the proposed flow rate does not exceed the existing flow rate.
 - 3) It does not appear that the Applicant will be causing erosion in a wetland.
2. *Standard 2 requires that stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.*
 - a. The Applicant has provided a HydroCAD model for the existing and proposed stormwater management to determine the peak rate attenuation and runoff volume for the 2-year, 10-year, 25-year, and 100-year storm events. HW has confirmed the subcatchment areas, the curve numbers, time of concentration flow paths, and the precipitation depths. The values utilized by the Applicant appear reasonable.
 - b. The Applicant has proposed an infiltration chamber system in the northern corner of the site. The proposed grades indicate approximately 8 feet of fill above this new system.

- HW recommends that the Applicant confirm that the fill over the proposed system is allowable by the vendor.
- c. The stormwater narrative indicates fill was identified throughout the site. The soil test pits conducted in the vicinity of the infiltration system indicate a possible perched water table. The Applicant has provided a detail for the chamber system on Sheet C7.3. HW recommends that the Applicant include on the detail a requirement to remove any fill identified beneath the chamber system and replace it with clean material having an exfiltration rate of at least 1.08 inches per hour. HW notes that the detail on Sheet C7.3 indicates 64 chamber systems, the plans and the HydroCAD model include 56 chambers.
 - d. HW recommends that the installation of the infiltration system is witnessed by a professional engineer. The Planning Board may choose to make this a condition of approval.
 - e. HW recommends that the Applicant include the size of the orifices on the detail of the outlet control system (OCS) on Sheet C7.3. HW notes that the 18-inch outlet of the OCS is listed at elevation 87.7 on the detail but is elevation 87.8 in the HydroCAD model.
 - f. The Applicant has provided a table within the Technical Report that compares the Peak Discharge Rates under existing and proposed conditions for DP1 and DP2. In accordance with Section VI. B. e. (1) of the Andover Stormwater Bylaw the volumes should also be provided. HW recommends that the Applicant provide tables comparing the existing and proposed volumes of stormwater runoff for the project site.
3. *Standard 3 requires that the annual recharge from post-development shall approximate annual recharge from pre-development conditions.*
- a. The Applicant states on page 5 of the Technical Report that the site will result in a slight increase in impervious area. The subcatchment summary tables on page 2 of the Technical Report show a slight decrease in the impervious area. HW recommends that the Applicant clarify the values used for the percent of impervious area on page three of the Technical Report.
 - b. HW notes that values listed in the recharge calculations of Appendix D, Standard 3 list includes the gravel surface area. The Applicant has reduced the impervious cover slightly when including the gravel surface but increased it slightly when the gravel is not included. HW recommends that the Applicant provide recharge for the increased impervious surface of 4,514 sf times 0.35 inches per Volume 3, Chapter 1, page 16 of the MSH.
 - c. HW was not able to confirm the provided recharge and recommends that the Applicant include the stage storage calculations within the Technical Report. It also appears that the lowest system orifice is set at elevation 87.8. HW recommends that the Applicant confirm the storage.
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. HW recommends that the Applicant include the closed drainage system calculations that

correspond to the Rational Calculation Area Plan, Sheet C5.3 for the proposed stormwater design.

- b. HW recommends that the Applicant clarify the impervious area directed towards water quality unit (WQU) 1 and 2.
 - c. HW recommends that the Applicant provide documentation from a third-party reviewer that supports the TSS removal rate credited to the proposed water quality units.
 - d. HW recommends that the Applicant provide the TSS removal worksheets per the MSH for each of the proposed treatment trains.
5. *Standard 5 is related to projects with a Land Use of Higher Potential Pollutant Loads (LUHPPL).*
- a. HW recommends that the Applicant confirm that no areas within the proposed site are considered hot spots due to the former land use as the DPW yard.
 - b. HW notes that a residential development is not considered a land use of higher potential pollutant load. Therefore, Standard 5 may not be 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. The site does not discharge to a critical area, a Zone II or an Interim Wellhead Protection Area of a public water supply. Therefore, Standard 6 is not applicable.
7. *Standard 7 is related to projects considered Redevelopment. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*
- a. The Applicant is proposing a mixture of a new development and redevelopment with a slight increase of 4,514 sf of impervious cover. The Applicant intends to meet all requirements of the Stormwater Management Standards and does not seek relief under this standard. HW notes that the Applicant must address the comments within this review letter to confirm it meets all requirements.
8. *Standard 8 requires a plan to control construction related impacts including erosion, sedimentation or other pollutant sources.*
- a. The Applicant has provided an erosion and sedimentation control plan within the technical report that includes a straw wattle, inlet protection, seeding, dust control, mulching, and netting. Procedures for operating and maintaining the BMPs are also included. HW recommends that the Applicant propose a compost sock instead of a straw wattle and increase the size to be a minimum of 12-inches. HW further recommends that the Applicant list the material to be used for the construction fence.
 - b. HW recommends that the Applicant increase the length of the construction entrance to be a minimum of 50 feet.

- c. 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. HW notes that the Applicant has not yet submitted a SWPPP but has stated that it will be submitted prior to any land disturbance. 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 provided a Long-Term O& M Plan in Appendix F of the Technical Report. HW recommends that the O&M Plan be submitted as a separate document signed by the property owner.
 - b. HW recommends that the Applicant include a maintenance log within the O&M Plan.
 - c. HW recommends that the Applicant include requirements for pet waste in the O&M Plan.
 - d. HW recommends that the Applicant include a simple plan that is drawn to scale and shows the location of all stormwater practices to be inspected and maintained. The plan should also include locations for snow storage.
 10. *Standard 10 requires an Illicit Discharge Compliance Statement to be provided.*
 - a. The Applicant has submitted an Illicit Discharge Compliance Statement signed by the Owner's Representative. HW recommends that the Planning Board request receipt of an Illicit Discharge statement signed by the property owner.

Conclusions

HW recommends that the Planning Board require that the Applicant provide a written response to address these comments as part of the review process. 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.
Associate Principal



Ava Schully
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