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Sustainable Environmental Solutions

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March 18, 2024

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

Ref: Third 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 third 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 additional documents and plans were received by HW in response to our second peer review letter dated March 13, 2024:

- Letter in response to Peer Review of Stormwater Design, prepared by The Morin-Cameron Group, Inc., dated March 14, 2024 (3 pages);
- 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, revised March 14, 2024 (137 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, revised through March 14, 2024 (24 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.

The following letter correlates to our second review letter dated March 13, 2024. Follow up comments are provided in **bold underlined 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. 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.

March 13, 2024: HW has no further comment.

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.

March 13, 2024: HW has no further comment.

- 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.

March 13, 2024: The Applicant has raised the bottom of the system and is currently proposing 5 feet of cover over the chambers. The Applicant has provided the vendors documentation that 12 feet of cover is allowable. HW has no further comment.

- 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.

March 13, 2024: The Applicant has revised the callout to read 56 chambers on the Cultec Recharger detail, found on Sheet C8.3. HW has no further comment.

- 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.

March 13, 2024: The Applicant has added inspection notes to the detail found on Sheet C8.3. The Planning Board may choose to include the inspections as a condition of approval. HW has no further comment.

- 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.

March 13, 2024: As noted previously HW recommends that the Applicant add the dimensions of the outlet devices to the OCS-3 detail on Sheet C8.3. Including the 4 foot by 0.5 foot rectangular orifice, the 6-inch orifices, and the 5-inch orifices. HW further notes that the 18-inch primary outlet has been modeled at 91.35 and not 91.25 as shown on the detail. HW recommends that the Applicant include these minor plan updates.

March 18, 2024: The Applicant has added the callouts to the OCS-1 detail on Sheet C8.3 as suggested. HW has no further comment.

- 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.

March 13, 2024: The Applicant has included the requested volumes in the report. HW has no further comment.

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.

March 13, 2024: The Applicant has clarified that the values used included gravel surfaces. HW has no further comment.

- 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.

March 13, 2024: The Applicant has adjusted the recharge calculation as suggested. HW has no further comment.

- 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.

March 13, 2024: The Applicant has clarified the provided recharge calculations as requested. HW has no further comment.

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.

March 13, 2024: The Applicant has provided the requested calculations. HW has no further comment.

- b. HW recommends that the Applicant clarify the impervious area directed towards water quality unit (WQU) 1 and 2.

March 13, 2024: The Applicant has clarified the drainage areas to the water quality units as requested. HW has no further comment.

- 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.

March 13, 2024: The Applicant provided the requested documentation for the Jellyfish device. HW has no further comment.

- d. HW recommends that the Applicant provide the TSS removal worksheets per the MSH for each of the proposed treatment trains.

March 13, 2024: The Applicant noted that the requested TSS worksheets have been included in Appendix D. However, HW was not able to locate them. HW requests that the Applicant provide the TSS worksheets.

March 18, 2024: The Applicant has provided the TSS worksheets as requested. The Contech Cascade Separator proprietary practice provides 92% TSS removal as indicated by the vendors design calculations. Documentation from NJCAT Technology Verification indicates that the Contech Jellyfish can provide 89% TSS removal. HW has no further comment.

- 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.

March 13, 2024: The Applicant has noted that the project will comply with the MCP and be overseen by a Licensed Site professional. HW has no further comment.

- 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.

March 13, 2024: HW has no further comment.

- 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.

March 13, 2024: HW has no further comment.

- 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.

March 13, 2024: HW has no further comment.

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.

March 13, 2024: The Applicant has revised the material to be a 12-inch compost sock and clarified the construction fence. HW has no further comment.

- b. HW recommends that the Applicant increase the length of the construction entrance to be a minimum of 50 feet.

March 13, 2024: The Applicant has increased the length of the construction entrance to 50 feet. HW has no further comment.

- 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.

March 13, 2024: 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.

March 13, 2024: The Planning Board may choose to require receipt of the signed O&M Plan as a condition of approval.

- b. HW recommends that the Applicant include a maintenance log within the O&M Plan.

March 13, 2024: The Applicant has included a maintenance log as requested. HW has no further comment.

- c. HW recommends that the Applicant include requirements for pet waste in the O&M Plan.

March 13, 2024: The Applicant has included requirements for pet waste as requested. HW has no further comment.

- 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.

March 13, 2024: The Applicant has included an Operations and Maintenance Plan as requested. It is not obvious where snow storage will occur.

March 18, 2024: The Applicant has clarified where snow storage is proposed on site. HW has no further comment.

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.

March 13, 2024: The Planning Board may choose to require receipt of the signed Illicit Discharge statement as a condition of approval.

Conclusions

HW is satisfied that the Applicant has adequately addressed our comments. Please contact Janet Bernardo at 857-263-8193 or at jbernarado@horsleywitten.com if you have any questions regarding these comments.

Sincerely,

HORSLEY WITTEN GROUP, INC.



Janet Carter Bernardo, P.E.
Principal