



TO:	Janet Bernardo, P.E. Associate Principal Horsley Witten Group 112 Water Street, 6 th Floor Boston, MA 02109	DATE:	October 26, 2022
FROM:	Howard Stein Hudson	HSR PROJECT NO.:	17024.03
SUBJECT	Response to Comments 7 Tantallon Road – Andover, MA 01810		

Dear Ms. Bernardo,

Howard Stein Hudson has received comments from Horsley Witten Group dated October 10, 2022, and have prepared the following responses.

Stormwater Standards:

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 proposes to replace the 15-inch existing outfall pipe near the entrance at Haverhill Street with an 18-inch RCP in the same location. The existing invert will be maintained at elevation 24.54 within the stone wall. The outfall replacement work has been designed to minimize disturbance to the riverbank and includes erosion and sediment control measures. The Applicant complies with Standard 1.*

HSR: Agreed

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. *It appears that the Applicant has included a larger area for woods (7,046 sf) under proposed conditions compared to existing conditions (5,624 sf). HW recommends that the Applicant adjust the increased surface area modeled as woods in the HydroCAD model to be open space/grass.*



HSH: The HydroCAD model has been revised to show 5,624 sf of woods in the proposed condition with the remaining 1,422 sf being entered as grass cover (good condition) which is conservative. The newly planted shrubs and trees nearest the Shawsheen River was previously counted towards woods. Table 2 within the Supplemental Data Report has been updated per the comments.

- b. *Per Section IX.E.6. of the Andover Stormwater Bylaws, the calculation of runoff volumes and peak rates shall be based on precipitation data provided in NOAA Atlas 14. HW recommends that the Applicant revise the precipitation depths used under existing and proposed conditions accordingly.*

HSH: The HydroCAD model has been revised to use precipitation values from NOAA Atlas 14. All flows and volumes have been revised within Table 2 of the Supplemental Data Report.

- c. *HW reviewed the HydroCAD modeling provided by the Applicant, including the watershed maps, drainage areas, and times of concentration (Tc). The comments above should not significantly alter the final flows or volumes. Once the above comments are addressed it appears that the Applicant has adequately designed the proposed stormwater management system to comply with Standard 2.*

HSH: The HydroCAD model and Supplemental Data Report has been revised to address all comments relating to Standard 2.

3. *Standard 3 requires that the annual recharge from post-development shall approximate annual recharge from pre-development conditions.*

- a. *The Applicant has noted that the site does not currently provide groundwater recharge and that infiltration practices are not feasible due to utility infrastructure. HW concurs with the Applicant that it has met Standard 3 to the maximum extent practicable by increasing the pervious areas. No further action required.*

HSH: Agreed



4. *Standard 4 requires that the stormwater system be designed to remove 80% Total Suspended Solids (TSS) and to treat 0.5-inch of volume from the impervious area for water quality.*

a. *The Applicant has proposed three catch basins which are connected via a closed pipe system to a water quality unit labeled DMH-5. The water quality unit (type CDS 2015-4) discharges to DMH-6 which then discharges to the existing outfall. HW recommends that the Applicant provide the water quality unit sizing calculations to verify that the applied 87.3% TSS removal credit is reasonable.*

HSH: Water quality unit sizing calculations have been provided using the Contech CDS design tool. A printout of the results has been provided showing the revised 89.28% TSS removal granted by the design tool. The previous 87.3% was based on the previous inputs and was not revised properly. A second document citing third party testing and verification of the treatment amount has also been provided as Appendix D of the Supplemental Data Report. The findings show that the system has the ability to remove greater than 80% of the stormwater solids.

b. *The O&M Plan notes that DMH-4 will have a deep sump. The plans do not appear to reflect this. HW recommends that the Applicant review the plans and the O&M Plan and adjust as needed.*

HSH: Note #4 on Sheet 4 of the plan set has been revised to state that a sump shall be installed within DMH-4 and DMH-6.

c. *The Applicant has taken 10% TSS removal credit for sweeping of the parking lot. HW recommends that the Applicant confirm that the method to sweep the parking lot is consistent with Volume 2, Chapter 1, Page 9 of the MSH.*

HSH: The street sweeping has been revised to include 5% TSS treatment in accordance with Volume 2, Chapter 1 of The Massachusetts Stormwater Handbook. The street sweeping section of the Operation and Maintenance Report has been revised to meet all standards associated with a 5% treatment.



5. *Standard 5 relates to projects with a Land Use of Higher Potential Pollutant Loads (LUHPPL).*
 - a. *The proposed development is not considered a LUHPPL therefore, Standard 5 is not applicable.*

HSH: Agreed

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 proposed development is not within a critical area, Zone II or an IWPA area, therefore, Standard 6 is not applicable.*

HSH: Agreed

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 proposed development is considered redevelopment. The Applicant has reduced impervious cover, will improve the water quality of the proposed stormwater runoff, and will shift the proposed building out of the floodway. Once the Applicant has adequately addressed all comments in this letter it is HW's opinion that the project will improve existing conditions and comply with Standard 7.*

HSH: Agreed



8. *Standard 8 requires a plan to control construction related impacts including erosion, sedimentation, or other pollutant sources.*
 - a. *The Applicant has provided a detail for a proposed construction entrance. However, the Demolition and Erosion Control Plan does not demonstrate where the construction entrance should be installed. HW recommend that the Applicant add the construction entrance to Sheet 2 of 11.*

HSH: A stabilized construction entrance has been added to Sheet 2 of 11 of the plans.
 - b. *HW recommends that the Applicant add silt sacks to catch basins in Haverhill Street that are within 100 feet of the construction entrance.*

HSH: A note has been added to Sheet 2 stating that “silt sacks shall be installed at all catch basins within 100 feet of the construction site within Haverhill Street.”

9. *Standard 9 requires a long-term operation and maintenance (O&M) plan shall be developed and implemented to ensure that stormwater management systems function as designed.*
 - a. *As noted above the method to sweep the parking lot to obtain 10% TSS removal should be consistent with Volume 2, Chapter 1, Page 9 of the MSH. The O&M Plan notes that the parking lots will be swept quarterly using a mechanical sweeper. This method receives 0% credit.*

HSH: The street sweeping section of the O&M report has been revised to include mechanical street sweeping on a monthly average which corresponds to a TSS treatment of 5%.
 - b. *The Applicant has included language in the O&M Plan regarding the garage floor drains. HW understands that the Applicant has received permission from the Board of State Examiners of Plumbers and Gas Fitters to tie the garage floor drains into the stormwater system to be treated with Stormceptors (HW notes that the proposed CDS unit is similar to a stormceptor). The floor drain connection is not obvious on the plan set. HW recommends that the Applicant add the connection pipe.*



HSH: A garage drainpipe has been included on Sheet 4 of the plans. The final invert and location of the pipe is to be coordinated with the Plumbing Engineers plans and designs within the creation of the construction documents. Approximate slope, length and invert has been shown on Sheet 4.

- c. *HW recommends that the Conservation Commission require receipt of the long-term stormwater maintenance on an annual basis as a condition of approval.*

HSH: Agreed

- d. *HW recommends that the Conservation Commission include a condition of approval prohibiting vehicle washing on the property.*

HSH: Agreed

- e. *HW recommends that the Applicant include a statement indicating how future property owners will be notified of the presence of the stormwater management system and the requirement for proper operation and maintenance.*

HSH: The proposal calls for the construction of new units that are meant to be rental units. Therefore, the owner of the parcel will remain responsible for the Operation and Maintenance.

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

- a. *The Applicant has indicated they have not provided an illicit discharge. HW recommends that the Town of Andover requires that receipt of a signed Illicit Discharge Compliance Statement be obtained prior to land disturbance.*

HSH: Concur. A signed Illicit Discharge statement has been included in this submission.

11. *Compensatory Storage within Floodplain:*

- a. *The Applicant has provided Pre and Post compensatory flood storage calculations up to the 100-year floodplain elevation (elevation 38). HW is satisfied that the Applicant has provided compensatory flood storage for the proposed development as slightly more than a 1:1 ratio.*

HSH: Agreed



If you have any further questions or comments, please do not hesitate to contact Howard Stein Hudson's Chelmsford Office.

Sincerely,

Howard Stein Hudson

Matthew Baker, E.I.T.
Engineer in Training – Civil

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