

# Horsley Witten Group

*Sustainable Environmental Solutions*

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February 18, 2015

Emilie Cademartori  
Town of Wenham  
Zoning Board of Appeals  
Wenham Town Hall  
2<sup>nd</sup> Floor  
138 Main Street  
Wenham, Massachusetts 01938

RE: Peer Review for Maple Woods  
Comprehensive Permit Application

Dear Ms. Cademartori and Board Members:

The Horsley Witten Group, Inc. (HW) is pleased to provide the Wenham Zoning Board of Appeals (ZBA) and the Wenham Conservation Commission with this follow up peer review of the Maple Woods Comprehensive Site Plan submission located at 62 Maple Street in Wenham, Massachusetts. Supplemental and revised materials for the above-referenced project have been submitted to address comments presented by HW in our initial Peer Review letter dated January 5, 2015.

The following documents and plans were reviewed by HW:

- Response Letter addressed to the Wenham Zoning Board of Appeals and the Wenham Conservation Commission, prepared by Meridian Associates, dated January 28, 2015;
- Stormwater Analysis and Calculations for 62 Maple Street, Wenham, Massachusetts, prepared by Meridian Associates, revised February 18, 2015;
- Stormwater Management Report for 62 Maple Street, Wenham, Massachusetts, prepared by Meridian Associates, revised February 4, 2015;
- Landscape Plan and Landscape Details for Maple Woods, Wenham, Massachusetts, prepared by Ulrich Bachand Landscape Architecture, LLC, revised January 22, 2015; and
- Permit Site Development Plans for 62 Maple Street, Wenham, Massachusetts, prepared by Meridian Associates, revised February 18, 2015 including:
  - Cover Sheet
  - Record Conditions Plan, Sheet 2 of 7
  - Permit Site Grading Plan, Sheet 3 of 7
  - Permit Site Utility Plan, Sheet 4 of 7
  - Permit Site Details, Sheet 5 of 7
  - Permit Site Details, Sheet 6 of 7
  - Permit Site Details, Sheet 7 of 7

Based on the materials submitted to date, HW has added our follow-up comments below in *italicized font*.

### **Stormwater Management Review**

Under the Comprehensive Permit Law, this project is required to meet the Massachusetts Stormwater Management Standards (MASWMS) in accordance with the Massachusetts Wetlands Protection Act. Therefore we have used the MASWMS as the basis for organizing our comments.

1. **MASWMS Standard #1**: Standard 1 states that no new stormwater conveyances may cause erosion in wetlands of the Commonwealth.
  - a. The Applicant proposes to discharge the emergency stormwater overflow from the subsurface infiltration facility into the adjacent wetland system to the north. The HydroCAD modeling indicates that this pipe will have minimal or no discharge and a riprap apron has been proposed to further minimize any potential erosion therefore it is unlikely to cause erosion into the adjacent BVW. It appears that the Applicant is in compliance with Standard 1.

*No further comment required.*

- b. The 12-inch emergency discharge pipe is proposed within the 30-foot no disturb zone. HW recommends that the Applicant pull the discharge pipe as far from the edge of the BVW as possible.

*The Applicant has pulled the emergency overflow outside of the 100-foot buffer zone.*

- c. For clarity, HW recommends the Applicant illustrate the emergency overflow pipe with inverts on the Permit Site Grading Plan, Sheet 3 of 6.

*The elevations of the emergency overflows have been added as requested.*

2. **MASWMS Standard #2**: Standard 2 requires that post-development runoff does not exceed pre-development runoff off-site.

The Applicant has described the pre- and post-development watershed areas in the stormwater report and provided the discharge values to the wetland resource area to the north and west of the proposed development. HydroCAD calculations were included in the Stormwater Analysis and Calculations section of the Stormwater Management Report. HW offers the following comments regarding the HydroCAD calculations:

- a. For clarity HW recommends the Applicant provide the pre- and post-development watershed maps with the subcatchment areas and design points clearly labeled consistent with the descriptions found in the Stormwater Analysis and Calculations.

*Existing Conditions and Proposed Conditions Watershed Maps have been provided as requested.*

- b. The Applicant has provided the Unofficial Soil Logs for the three test pits in the vicinity of the subsurface infiltration system on Sheet 6 of 6. All three tests pits indicate the soil is loamy medium sand consistent with a Rawles infiltration rate of 2.41 inches/hour. The Applicant has utilized an exfiltration rate of 8.27 inches/hour in the HydroCAD modeling. HW recommends the Applicant adjust their HydroCAD calculations utilizing the 2.41 inches/hour rate or further justify their use of 8.27 inches/hour with additional soil testing.

*The Applicant has revised the HydroCAD calculations utilizing an exfiltration rate of 2.41 inches/hour as requested. The primary infiltration system has increased in size slightly and a second infiltration system is now proposed to treat the roof runoff in the rear of the building.*

- c. The proposed roof drain from the proposed Apartment Building is not clearly shown entering the infiltration chambers. HW recommends that the Applicant verify that the roof drains are directed appropriately to the subsurface infiltration chambers. HW also recommends that the Applicant verify that the architect is aware of where the roof runoff is to be collected to coordinate the building design accordingly.

*The Applicant has clearly shown the roof drain pipes to the proposed infiltration system located in the rear of the building.*

- d. To verify the design meets the requirements outlined in the MASWMS, HW recommends the Applicant conduct additional test pits within the area proposed to be subsurface infiltration chambers prior to final approval. In accordance with Volume 2, Chapter 2, page 90, a minimum of three test pits should be conducted for each infiltration system.

*Additional soil testing has been conducted as requested. The location of the test pits are shown on the Record Conditions Plan and the test logs are provided on the Permit Site Details, Sheet 6 of 7.*

- e. HW recommends that the final design includes clear specifications for any fill material to be placed beneath the subsurface infiltration system. The Applicant should provide specifications for the fill maintaining the exfiltration rate utilized in the final approved HydroCAD model.

*A note regarding the fill specifications for the soil to be located beneath the infiltration systems has been provided on the Permit Site Details, Sheet 6 of 7.*

3. MASWMS Standard #3: Standard 3 requires that the annual recharge from post-development shall approximate annual recharge from pre-development conditions.
  - a. The Applicant has provided recharge calculations in accordance with the MASWMS, however HW recommends that the calculations be revised utilizing an exfiltration rate of 2.41 inches/hour as discussed previously.

*The recharge calculations have been revised utilizing an exfiltration rate of 2.41 inches/hour as requested.*

4. MASWMS Standard #4: Standard 4 requires that the stormwater system be designed to remove 80% Total Suspended Solids and to treat 1.0-inches of volume from the impervious area for water quality.
  - a. The Applicant has provided the required documentation and calculations per the MASWMS. It appears that the Applicant is in compliance with Standard 4.

*No further comment required.*

5. MASWMS Standard #5: Standard 5 is related to projects with a Land Use of Higher Potential Pollute Loads (LUHPPL). This standard is not applicable to this project.

*No further comment required.*

6. MASWMS Standard #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. This standard is not applicable to this project.

*No further comment required.*

7. MASWMS Standard #7: Standard 7 is related to projects considered Redevelopment. This standard is not applicable to this project.

*No further comment required.*

8. MASWMS Standard #8: Standard 8 requires a plan to control construction related impacts including erosion, sedimentation or other pollutant sources.

- a. HW recommends that the Applicant provide additional erosion and sedimentation controls around the emergency overflow pipe.

*The emergency overflow has been relocated; therefore additional erosion controls are no longer necessary.*

- b. HW recommends that the catch basins within Maple Street within 100-feet of the access driveway be provided with inlet protection during construction.

*A note has been added to the Permit Site Grading Plan requiring inlet protection within the two catch basins on Maple Street closest to the project entrance.*

- c. The Applicant has provided a Construction Period Pollution Prevention Plan for a Proposed Stormwater Management System in the Stormwater Report. The document is not consistent with the Erosion Control and Sedimentation Notes provided on Sheet 6 of 6. There is a reference to a rain garden and a drainage swale which are not apparent on the design plans. HW recommends that a detail be provided for the storm drain inlet protection and that the Area Drain be staked in the field to avoid snow being deposited over it in the winter. The Conservation Commission may choose to provide final authorization on the acceptable placement and the removal of the siltation devices.

*The Construction Period Pollution Prevention Plan has been revised as requested. If an Order of Conditions is issued for this project, the Conservation Commission may choose to add a Special Condition requiring they have final authorization on the acceptable placement and the removal of the siltation devices.*

- d. The property will be disturbing more than 1 acre of land and will therefore be required to develop a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Stormwater Program. HW recommends that the Applicant provide the Wenham Conservation Commission with a copy of its SWPPP and Notice of Intent to EPA prior to construction.

*If an Order of Conditions is issued for this project, the Conservation Commission may choose to add a Special Condition requiring the Applicant to provide the Wenham Conservation Commission with a copy of its SWPPP and Notice of Intent to EPA prior to construction.*

- e. HW recommends that note 2 of the Erosion Control and Sedimentation Notes on Sheet 6 of 6 be revised to state that stock piles should be located at least 100 feet from the limits of the BVW.

*Note 2 has been revised as requested.*

9. MASWMS Standard #9: Standard 9 requires a Long Term Operation and Maintenance Plan to be provided.

- a. The Applicant has provided a Long Term Operation and Maintenance (O&M) Plan. The plan includes an O&M schedule and identifies the person or party responsible for the ongoing O&M. HW recommends that the Conservation Commission reference the O&M plan in any conditions they develop during their review process. The Applicant appears to be compliance with Standard 9.

*No further comment required.*

10. MASWMS Standard #10: Standard 10 requires an Illicit Discharge Compliance Statement to be provided.

- a. To be in compliance with Standard 10, HW recommends that the Applicant provide an Illicit Discharge Compliance Statement signed by the property owner.

*The Applicant has provided a signed Illicit Discharge Compliance Statement as requested.*

11. Additional Comments: As part of our review process HW noted the following items that the Applicant should consider.

- a. It appears that a drainage easement may be necessary for the emergency overflow pipe.

*The drainage easement is no longer necessary because the emergency overflow has been relocated.*

- b. The Applicant has proposed an 18-foot wide fire access around two sides of the proposed building. HW recommends that the proposed surface material be labeled on the drawings for verification that this fire access will be porous.

*The surface of the 18-foot wide fire access has been labeled as Grasspave2 which is considered porous.*

- c. The Applicant has also proposed a walking path to the south of the parking lot. HW recommends that the proposed surface material be labeled on the drawings for verification that this walking path will be porous.

*The surface of the walking path has been labeled as permeable pavers which are*

*considered porous.*

- d. HW recommends that the Landscape Plan incorporated with the Comprehensive Permit drawings be provided to the Wenham Conservation Commission to verify the proposed plantings within the 100 foot buffer zone are native species.

*A Landscape Plan with Details has been provided as requested.*

- e. HW recommends that the Subsurface Infiltration Facility profile detail be verified for consistency with the minimum depth to estimated seasonal high groundwater.

*The typographical error has been corrected on the Subsurface Infiltration Facility profile detail as requested.*

- f. HW recommends that the Subsurface Infiltration Facility #1 plan view detail be revised to include the inlets from the roof drain, the stormceptors, the area drain and the outlet to the emergency overflow, including all invert elevations.

*The plan view detail has been revised as requested.*

- g. For clarity the Applicant should revisit the LID Measures marked as incorporated on the Checklist for Stormwater Report. The use of country drainage and bioretention cells is not apparent on the design plans.

*The MassDEP Checklist for Stormwater Report has been revised as suggested.*

## **Conclusion**

HW is satisfied that the Applicant has responded adequately to our previous comments and concerns. The Applicant is advised that provision of these comments does not relieve him/her of the responsibility to comply with all Commonwealth of Massachusetts laws, and federal regulations as applicable to this project. Please contact Janet Carter Bernardo at 857-263-8193 (jbernardo@horsleywitten.com) if you have any questions regarding this review.

Sincerely,

HORSLEY WITTEN GROUP, INC.



Janet Carter Bernardo, P.E., LEED AP  
Senior Project Manager

Cc: Meridian Associates