



June 1, 2022

Ms. Valerie Oorthuys, Town Planner
Bolton Town Hall
663 Main Street
Bolton, MA 01740

Re: Sixth Peer Review – Comprehensive Permit Application
Mallard Lane, Bolton MA

Dear Ms. Oorthuys:

The Horsley Witten Group (HW) is pleased to provide the Bolton Zoning Board of Appeals (ZBA) with this letter report summarizing our sixth review of the residential development proposed along South Bolton Road between Wheeler Road and Spectacle Hill Road in Bolton, MA. Ducharme & Dillis Civil Design Group, Inc. have prepared the Comprehensive Permit Plan set and Stormwater Report on behalf of James Morin (Owner). The proposed development includes eight (reduced from eleven) detached age-restricted single family residential dwellings with one common driveway. The 4.70-acre undeveloped parcel includes an off-site wetland area as shown on the project plans. HW understands through conversations with the Bolton Conservation Agent that a Determination of Applicability was issued by the Bolton Conservation Commission indicating the need for the Applicant to file a Notice of Intent (NOI) with the Conservation Commission for work proposed within the 100-foot buffer to the wetland area.

The following additional documents and plans regarding the stormwater and site design were received by HW in response to our fifth review issued on April 19, 2022:

- Memorandum prepared by the Bolton Board of Health providing Mallard Lane comments, dated May 24, 2022 (1 page).
- Letter re: Revised Plans and Additional Information, Mallard Lane - Comprehensive Permit, Bolton, MA from Dillis & Roy Civil Design Group, Inc., dated May 31, 2022 (1 page).
- Letter re: Sight Distance Calculations, Mallard Lane - Comprehensive Permit, Bolton, MA prepared by Dillis & Roy Civil Design Group, Inc., dated May 27, 2022 (3 pages).
- HydroCAD model calculations, prepared by Dillis & Roy Civil Design Group, Inc., printed May 31, 2022 (7 pages).

- Comprehensive Permit Plan, Mallard Lane, Bolton, MA, prepared by Dillis & Roy Civil Design Group, Inc., revised May 27, 2022 which includes:
 - Title Sheet C1.0
 - Existing Conditions Plan C1.1
 - Layout Plan C2.0
 - Grading & Drainage Plan C3.0
 - Grading & Drainage Details 1 C3.1
 - Grading & Drainage Details 2 C3.2
 - Erosion Control Plan C4.0
 - Erosion Control Details C4.1
 - Utilities Plan C5.0
 - Utilities Details C5.1
 - Landscape Plan C6.0

Stormwater Review

HW offers the following comments concerning the stormwater management design per the requirements of the Massachusetts Department of Environmental Protection (MassDEP) Massachusetts Stormwater Handbook (MSH) dated February 2008.

The following comments correlate to our April 22, 2022, peer review letter. Follow up comments are provided in ***bold italicized underlined font***. Comments previously addressed have been removed for simplicity.

1. *Standard 1 states that no new stormwater conveyances may discharge untreated stormwater directly to or cause erosion in wetlands of the Commonwealth.*
 - a) ***April 19, 2022: Previously addressed.***
 - b) ***April 19, 2022: Previously addressed.***
2. *Standard 2 requires that the stormwater management systems be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.*
 - a) The Applicant provided the HydroCAD model for the 2-year, 10-year, 25-year, and 100-year storm events. The precipitation rates utilized are not comparable to the NOAA Atlas 14, the Cornell Extreme Precipitation, or the Technical Paper-40 (TP-40) rates for Worcester County. HW recommends that the Applicant clarify where the precipitation rates used were derived from and adjust to use the higher values from the commonly used references mentioned. HW understands that MassDEP is in the process of revising the Massachusetts Stormwater Handbook and will likely be requiring the use of the NOAA Atlas 14 depths of precipitation.

HW 1/26/22: The Applicant has not provided a revised Stormwater Report as of January 26, 2022. HW's comment stands.

HW 3/21/22: The Applicant has provided a revised Stormwater Report and has revised the precipitation rates. The drainage maps were not provided so it is difficult to review the revised drainage areas. HW recommends that the Applicant provide revised maps or clarify the numbering system used in the calculations.

April 19, 2022: The Applicant has provided the drainage maps as requested. It appears that an offsite area southwest of the parcel may flow onto the project site

and be collected by catch basins 7, 9, and 10 and piped to Infiltration Area B. The area is primarily woodlands and may have minimal impact on the size of the stormwater system. HW recommends that the Applicant confirm that this offsite area flowing onto the project site will not impact the proposed system.

June 1, 2022: The Applicant has provided a slight depression between elevations 368 and 370 which will retain and recharge the stormwater runoff flowing down the hill off the western property boundary. HW recommends that this depression be maintained by the Homeowner's Association.

- b) ***June 1, 2022: Previously addressed.***
 - c) ***April 19, 2022: Previously addressed.***
 - d) ***June 1, 2022: Previously addressed.***
 - e) ***June 1, 2022: Previously addressed.***
 - f) ***June 1, 2022: Previously addressed.***
 - g) ***June 1, 2022: Previously addressed.***
 - h) ***April 19, 2022: Previously addressed.***
 - i) ***June 1, 2022: Previously addressed.***
 - j) ***June 1, 2022: Previously addressed.***
 - k) ***April 19, 2022: Previously addressed.***
3. Standard 3 requires that the annual recharge from the post-development site approximate the annual recharge from pre-development conditions based on soil type.
- a) ***June 1, 2022: Previously addressed.***
 - b) ***June 1, 2022: Previously addressed.***
 - c) ***HW 3/21/22: The Applicant is proposing Cultec Woven Geotextile fabric beneath all of the chamber systems. HW recommends that the Applicant confirm that the two woven fabrics proposed are appropriate for Infiltration System A and Infiltration System B.***
- April 19, 2022: The Applicant has adequately responded to this comment and adjusted the fabric beneath Infiltration Area A and in the plan view of Infiltration Area B. However, the cross section for Infiltration Area B indicates a Cultec No 66 woven fabric presumable beneath the entire system. HW suggests that prior to construction the Applicant coordinate with Cultec to confirm the correct fabric is utilized to allow for the higher permeability rate.***
- June 1, 2022: The Applicant has revised the fabric proposed beneath the infiltration chambers. 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 0.5-inch of volume from the impervious area for water quality.
- a) ***April 19, 2022: Previously addressed.***

5. *Standard 5 relates to projects with a Land Use of Higher Potential Pollutant Loads (LUHPPL).*
 - a) ***April 19, 2022: Standard 5 is not applicable to this site.***
6. *Standard 6 relates to projects with stormwater discharging into a critical area, a Zone II or an Interim Wellhead Protection Area of a public water supply.*
 - a) ***April 19, 2022: Standard 6 is not applicable to this site.***
7. *Standard 7 relates to projects considered Redevelopment.*
 - a) ***April 19, 2022: Standard 7 is not applicable to this site.***
8. *Standard 8 requires a plan to control construction related impacts including erosion, sedimentation or other pollutant sources.*

- a) HW recommends that the Applicant include a tree protection detail and clearly illustrate on the plans any specific trees to be protected and the proposed tree line. HW further recommends that trees greater than 10-inch diameter be located on the existing conditions plan and trees within the Town right of way be clearly documented.

HW 1/26/22: A tree protection detail has been added to the plans. No specific trees have been identified on the plans. HW again recommends that trees greater than 10-inch diameter be located on the existing conditions plan and trees within the Town right of way be clearly documented.

HW 3/21/22: HW's previous comment stands.

April 19, 2022: The Applicant has included the existing trees along the frontage of the property adjacent to So. Bolton Road. It appears that most of the trees in this area will need to be removed to install the Infiltration Basin and Subsurface Chamber System A. HW recommends that trees to be protected are clearly labeled on the Erosion Control Plan (Sheet C4.0) and reviewed in the field prior to land disturbance.

June 1, 2022: HW's previous recommendation to the ZBA stands.

- b) **June 1, 2022: Previously addressed.**
- c) ***April 19, 2022: Previously addressed.***
- d) ***April 19, 2022: Previously addressed.***
- e) ***April 19, 2022: Previously addressed.***
- f) **June 1, 2022: Previously addressed.**
- g) 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. The Applicant has noted on that it will provide the Town of Bolton with a copy of its SWPPP prior to construction.

HW 1/26/22: The Applicant states that a filing will be made with the EPA and a copy of the SWPPP will be provided to the Town prior to construction. The ZBA may choose to include receipt of the SWPPP prior to construction as a condition of approval.

June 1, 2022: HW's prior recommendation to the ZBA stands.

9. *Standard 9 requires a Long-Term Operation and Maintenance (O&M) Plan be provided.*

The Applicant has provided an O&M Plan for this project in the Stormwater Report. HW has the following comments:

- a) Subsurface infiltration areas are noted to be maintained "regularly" this should be modified to state twice per year per the MSH.

HW 1/26/22: The Applicant states that the O&M has been updated accordingly. A revised O&M has not been received as of January 26, 2022. HW's initial comment stands.

HW 3/21/22: HW's previous comment stands. Additionally, HW reminds the Applicant to include maintenance of the infiltration basin (including the sediment forebay) to the O&M Plan.

April 19, 2022: The Applicant has included an O&M Plan dated February 28, 2022 in the Stormwater Report. HW recommends that prior to land disturbance a simple figure is included with the O&M Plan labeling each of the stormwater practices requiring inspections and maintenance.

June 1, 2022: HW recommends that as a condition of approval the ZBA requires receipt of a signed and complete O&M Plan prior to land disturbance.

- b) The O&M Plan should clearly document who is responsible for the long-term maintenance of the stormwater practices.

HW 1/26/22: The Applicant states that the parties responsible will be determined at a later date and will be provided in the SWPPP.

April 19, 2022: The Applicant has included an O&M Plan, dated February 28, 2022, in the Stormwater Report. The O&M Plan has a page designated for the responsible party to be completed.

June 1, 2022: HW recommends that as a condition of approval the ZBA requires receipt of a signed and complete O&M Plan prior to land disturbance.

- c) A simple figure should be attached to the O&M Plan noting the location of the various stormwater practices.

HW 1/26/22: The Applicant states that the O&M has been updated to include a figure outlining the stormwater practices. A revised O&M has not been received as of January 26, 2022.

HW 3/21/22: HW has not received a revised O&M Plan as of 3/21/22.

April 19, 2022: The Applicant has included an O&M Plan, dated February 28, 2022, in the Stormwater Report. HW recommends that prior to land disturbance a simple figure is included with the O&M Plan labeling each of the stormwater practices requiring inspections and maintenance.

June 1, 2022: HW recommends that as a condition of approval the ZBA requires receipt of a signed and complete O&M Plan prior to land disturbance.

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

- a) To comply with Standard 10 an Illicit Discharge Compliance Statement signed by the property owner must be provided to the Town prior to the discharge of stormwater.

HW 1/26/22: The Applicant states that a statement will be signed by the property owner prior to the discharge of stormwater.

April 19, 2022: The ZBA may choose to include receipt of the Illicit Discharge Compliance Statement prior to construction as a condition of approval.

June 1, 2022: HW recommends that as a condition of approval the ZBA requires receipt of a signed Illicit Discharge Compliance Statement.

11. *Water and Wastewater Comments:*

- a) **June 1, 2022: Previously addressed.**

- b) The Applicant has proposed a single location for the septic tanks for all 11 homes. HW recommends providing tanks closer to the homes to allow for solids to settle prior to discharging down the entire length of the roadway. The Applicant informed HW that the wastewater design will be changed to provide individual septic tanks for each house. HW recommends that a revised plan be submitted illustrating the locations of the septic tanks.

HW 1/26/22: The Applicant has elected to utilize the septic tank configuration depicted on the Comprehensive Permit Plans opposed to individual tanks at each unit. HW defers to the Board of Health.

April 19, 2022: HW has no further comment and defers final acceptance of the wastewater system to the Board of Health.

June 1, 2022: The Board of Health has provided a memorandum. HW has no further comment.

- c) **June 1, 2022: Previously addressed.**

- d) It is unclear if the well should be considered a community water service based on the number of people served. This should be clarified by the appropriate Town Department and MassDEP. HW recommends that formal documentation approving this well as a community well be provided to the ZBA prior to a decision.

The Applicant has revised the plans to include individual wells on each lot. HW recommends that the Applicant confirm that the well locations will conform to the Well Regulations (Section 4.1 Well Location Requirements), specifically the setback distances to public/private ways and common drives (50-feet) and sewer line/force mains (50-feet), as well as all of the other dimensional requirements.

HW 3/21/22: HW's previous comment stands. It appears that the wells proposed for Units 1, 3, 6, and 8 are within 50 feet to the property line, the Applicant has requested a waiver for these 4 Units. HW defers to the Board of Health. The well for Unit 1 is within 50 feet of the sewer force main and the well for Unit 8 is within 50 feet of the common driveway, HW does not believe that waivers have been requested for these setbacks.

April 19, 2022: The Commonwealth of Massachusetts Private Well Guidelines, updated July 2018, includes the setback requirements of Title 5, which requires that a potable well or suction line be located a minimum of:

- ***10 feet from a building sewer constructed of durable corrosion resistant material with watertight joints, or 50 feet from building sewer constructed of any other type of pipe.***
- ***50 feet from a septic tank.***
- ***100 feet from a leaching field.***

The following additional minimum setback distances from potable wells are listed in the Private Well Guidelines as guidance to local Boards of Health:

- ***Property line 10 feet***
- ***Public /private Roadway 25 feet***
- ***Surface water/wetlands 25 feet***

HW recommends that the Applicant confirm that all sewer pipes will be constructed of durable corrosion resistant material with watertight joints. HW defers to the Bolton Board of Health for any setback variances granted.

June 1, 2022: The Board of Health has provided a memorandum. HW has no further comment.

- e) ***April 19, 2022: In a letter to the ZBA, there was a question regarding the sewerage pump from Lot 1 and the potential for a power outage. In accordance with paragraph 15.229 of 310 CMR (Title 5), the local Approving Authority may approve pumping of sewerage from a single-family dwelling to a septic tank provided that the volume of sewerage pumped is less than 25% of the design flow. HW recommends to the BOH confirm that the Applicant complies with the various requirements listed under paragraph 15.229 and require that the Applicant provide additional storage volume in the pump chamber.***

June 1, 2022: HW defers further comment to the Board of Health.

12. Additional Comments:

- a) ***April 19, 2022: Previously addressed.***
- b) ***June 1, 2022: Previously addressed.***
- c) ***June 1, 2022: Previously addressed.***
- d) ***April 19, 2022: Previously addressed.***
- e) ***April 19, 2022: Previously addressed.***
- f) ***April 19, 2022: Previously addressed.***
- g) ***June 1, 2022: Previously addressed.***
- h) ***June 1, 2022: HW defers acceptance of the Landscape Plan to the ZBA.***
- i) ***June 1, 2022: Previously addressed.***
- j) ***April 19, 2022: Previously addressed.***

- k) In accordance with the Federal Highway Administration, stopping sight distance to an intersection should be 200 feet from a road posted at 30 miles per hour. HW recommends that the Applicant confirm the available sight distance for exiting the site. It appears that the sight distance to the east on South Bolton Road may be adequate however the stopping sight distance to the west may be short. HW further recommends that no plantings are proposed within the sight distance triangle in either direction.

HW 1/26/22: The Applicant will confirm the posted speed limit at the site and update plans to include a sight distance triangle. The Police Chief has stated that the road is unposted at 40 miles per hour. Our previous comment stands.

HW 3/21/22: HW's previous comment stands.

April 19, 2022: The Applicant has suggested that South Bolton Road be established as a 25 mile per hour road. HW recommends that the Applicant work with a traffic engineer and the Bolton Police Department to create a safe intersection. For the ZBA's consideration the following table lists the various stopping site distances and Intersection Sight Distance (ISD) as determined by AASHTO. The ISD is measured along the major road, 15 feet back from the edge of the lane at the driver's eye level.

The Applicant notes on Sheet C2.0 that the stopping sight distance to the west of Mallard Lane is 220 feet and to the east is 302 feet. HW notes that there is a stone wall proposed at the intersection on both sides of Mallard Lane. HW recommends that the Applicant confirm that the stone wall will not be higher than eye level of a typical driver.

| Speed (mph) | Stopping Sight Distance (ft) | Design Intersection Sight Distance (ft) |
|-------------|------------------------------|---|
| 25 | 155 | 280 |
| 30 | 200 | 335 |
| 35 | 250 | 390 |
| 40 | 305 | 445 |
| 45 | 360 | 500 |

June 1, 2022: The Applicant has provided a letter to the ZBA regarding the sight distance and the proposed mitigation. HW defers acceptance of the mitigation to the ZBA and the Bolton Police Department.

Wetlands Review

As of June 1, 2022, a response to the wetland review has not been received by HW.

The Applicant has not appreciably responded to HW's initial wetlands comments from our initial October 14, 2021 letter or the January 11, 2022 letter. While the project design has been modified somewhat, our comments regarding impacts to wetlands and associated buffer zones

still stand. Rather than repeat our original comments here, we refer the Board to our January 11, 2022 letter. Where the Applicant has partially addressed any of our original 6 comments, we note this below. Please note: new wetlands comments listed below continue the previous numbering sequence, beginning with #7.

One of our original points raised was the potential for the largest of the wetland areas (Wetland A) to serve as vernal pool habitat, which has been documented by a local school group. Should there be any question of the vernal pool status for Wetland A, it is now the appropriate time of year to make said determination.

7. HW recommends that the vernal pool status of Wetland A be confirmed as it relates to the protection of vernal pool habitat in light of the proposed project.

In response to HW's comment #5, regarding relief sought from the local wetlands bylaw and regulations, the Applicant has outlined the specific relief sought from the Bolton Wetlands By-Law Section 233-2 to allow alterations depicted on the plans within the adjacent upland resource area and buffer zones to wetland resource areas.

HW feels that it is important for the Town to understand the implication of the requested relief. This includes relief from the wetland setbacks relating to proposed grading, pavement, and a retaining wall associated with the main road; setbacks from proposed wells for four of the eight proposed units, placement of a stormwater outfall, and one of the units (Unit 7) as outlined in the table below.

We note that many of the requested reliefs pertain to work within 100 feet of Wetland A, where under existing conditions, this wetland appears to be forested to the north, east (off site), and south, and southwest, with the existing gravel road passing just to the west. As pointed out in HW's wetlands comment #3, the proposed project will infringe upon the 100-foot vernal pool habitat.

| Relief Sought | Distance to Wetland (feet) | Wetland Designation |
|-----------------|----------------------------|---------------------|
| Grading* | 30 | A, B |
| Pavement | 56 | A |
| Retaining wall | 44 | A |
| Drainage Outlet | 62 | A |
| Well (Unit 1) | 73 | A |
| Well (Unit 6) | 100 | A |
| Well (Unit 7) | 57 | B |
| Well (Unit 8) | 78 | B |
| Unit 7 | 90 | B |

**Grading is proposed along the western side of Wetland A.*

8. HW recommends that the Applicant quantify the amount of lost forested vernal pool habitat that will occur as a result of the proposed site grading and installation of the proposed road as currently designed and assess how the loss of this forested habitat would affect the vernal pool habitat.

9. HW recommends that the Town seek to have the Applicant qualify and quantify how the proposed wells for Units 1 and 6 will affect the water levels in the potential vernal pool within Wetland A.
10. HW recommends that the Town seek to have the Applicant qualify and quantify how the proposed stormwater outfall will affect the water levels and the water quality in the potential vernal pool within Wetland A.
11. HW recommends that the Applicant quantify how much of the vernal pool habitat will be lost as a result of site grading and installation of the proposed road.

Conclusions

HW recommends that the Bolton Zoning Board of Appeals require that the Applicant provide a written response to address the comments listed under the Wetlands Review as part of the permitting process. 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 jbernardo@horsleywitten.com or at 508-833-6600 if you have any questions regarding these comments.

Sincerely,

Horsley Witten Group, Inc.



Janet Carter Bernardo, P.E.
Associate Principal



Amy M. Ball, PWS, CWS
Senior Project Manager – Senior Ecologist