



April 19, 2022

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

Re: Fifth 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 fifth 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 fourth review issued on March 21, 2022:

- Soil test logs TH-1 to TH-8, conducted on April 8, 2022.
- Letter to Bolton ZBA, prepared by Brittany Bethune & Christopher Hoyt, no date (3 pages).
- Letter to Bolton ZBA, prepared by Hancock Associates, dated April 5, 2022, (6 pages).
- Letter re: Mallard Lane, Comprehensive Permit, Bolton, MA from Dillis & Roy Civil Design Group, Inc., dated March 30, 2022 (23 pages).
- Letter re: Waiver Request Letter, Comprehensive Permit – Mallard Lane, Bolton, MA from Dillis & Roy Civil Design Group, Inc., dated March 30, 2022 (2 pages).
- Stormwater Report for Mallard Lane in Bolton, Massachusetts, prepared by Dillis & Roy Civil Design Group, Inc., revised February 28, 2022 (248 pages).
- Turning Movement Exhibit Plan, Mallard Lane, prepared by Dillis & Roy Civil Design Group, Inc., dated March 30, 2022 (1 Sheet).

- Comprehensive Permit Plan, Mallard Lane, Bolton, MA, prepared by Dillis & Roy Civil Design Group, Inc., revised March 30, 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 March 21, 2022, peer review letter. Follow up comments are provided in ***bold italicized 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 be 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.

- b) Pipe sizing calculations were not included in the submittal, HW recommends that the Applicant provide sizing calculations for a 25-year storm event using the rational method.

HW 1/26/22: The Applicant has not provided a revised Stormwater Report as of January 26, 2022. The Applicant stated that pipe sizing calculations were provided but were not included in the submission; HW's original comment stands.

HW 3/21/22: HW recommends that the Applicant provide pipe sizing calculations as originally requested. In addition, pipe sizes and elevations do not appear to be indicated on the plans. HW recommends that the Applicant include this information on the Grading & Drainage Plan.

April 19, 2022: The Applicant included the peak flow rates to each catch basin in the HydroCAD model. Typically, drainage pipes are sized using the rational method as originally requested in November 2021. However, the peak flows to each basin listed in the HydroCAD model are within a reasonable range for HW to accept the calculations as provided. No further comment.

- c) ***April 19, 2022: Previously addressed.***
- d) There appears to be an error for the rim elevation for DMH-2. HW recommends that the Applicant review and revise as needed.

HW 1/26/22: The elevation for DMH-2 has been revised. HW has no further comment.

HW 3/21/22: The revised plans do not include a schedule for the proposed structures. HW recommends that this table be added back to the plans so that the elevations can be verified.

April 19, 2022: The Applicant has included the Drainage Structure Schedule on Sheet C3.2 with the Proposed Road Profile. HW has no further comment.

- e) There appears to be only 2.5-feet of cover over several pipes. HW recommends that the Applicant confirm that this is adequate for loading under pavement and that the drainage structures will be able to be constructed with inverts at the proposed elevations.

HW 1/26/22: The Applicant has specified ductile iron pipe for drainage pipes 1 and 2 with 2-feet of cover. It appears that there is actually less than 1-foot of cover over these pipes at the structures. HW recommends that the Applicant confirm that this is adequate for loading under pavement and that the structures will be able to be constructed with the inverts at the proposed elevations.

HW 3/21/22: The revised plans do not include a schedule for proposed structures. HW recommends that this table be added back to the plans so that elevations can be verified. HW recommends that the Applicant confirm adequate loading and constructability for all pipes/structures.

April 19, 2022: The Applicant has included the Drainage Structure Schedule on Sheet C3.2 with the Proposed Road Profile, the proposed pipes appear to have adequate cover. HW has no further comment.

- f) The proposed roofs are directed towards the closed drainage system and through the proprietary treatment devices prior to infiltration. Roof runoff is considered “clean” and could be infiltrated directly from the downspouts. HW recommends that the Applicant investigate this option to decrease the amount of flow through the proprietary treatment device.

HW 1/26/22: The Applicant states that the roof runoff is intended to be recharged through sub-surface systems to preserve the maximum amount of space around units. HW again suggests infiltrating directly from the downspouts to individual sub-surface units in order to decrease the flow through the proprietary treatment as well as decreasing the size of infiltration areas A and B, possibly decreasing the required clearing/grading along the roadway.

HW 3/21/22: HW's 1/26/22 comment stands.

April 19, 2022: The Applicant has stated that its design will capture the roof runoff and the stormwater from these impervious areas will be infiltrated via one of the proposed infiltration practices. HW agrees with the overall design, our suggestion is to pipe the roof runoff rather than allow it to sheet flow over driveways and lawns. The design as proposed is adequate. HW has no further comment.

- g) As currently shown, there is a maximum of nine feet of cover over Infiltration Area A. The grading appears off, the proposed grades tie back to the existing grades however the entire area will need to be cleared and excavated to install the subsurface system. HW recommends that the Applicant revisit the proposed grading over Infiltration Area A and confirm that the amount of cover is suitable over the proposed structures.

HW 1/26/22: The Applicant has reduced the amount of proposed cover to approximately 6-feet. However, it appears that the proposed grades can still be reconfigured to reduce the fill and should tie back to the existing topography at the property line. As shown the existing contours that are illustrated to remain will be impacted when the subsurface infiltration system is installed.

HW 3/21/22: The design has been revised from a subsurface infiltration chamber system to a surface Infiltration Basin. HW has no objection to the revised practice however, we recommend that additional details be provided for the proposed basin.

April 19, 2022: The Applicant has provided a cross section on Sheet C3.2 for the proposed Infiltration Basin. The size of the basin appears reasonable, as designed the bottom of the basin is approximately 10 feet below the existing surface. The original test pits conducted in this area indicate that no groundwater was found 10 feet below the surface. The Applicant conducted additional test pits on April 8, 2022. It appears that TH-7 is located in the area of the proposed Infiltration basin. TH-7 was dug 15 feet below the surface and no water was observed. HW has no further comment.

- h) ***April 19, 2022: Previously addressed.***
- i) There is no emergency overflow for the infiltration chambers. The 100-year storm peak elevation is only four-inches below the flood elevation of the chambers for Infiltration Area B. HW recommends that the Applicant include an emergency overflow should there be a clog or failure in the future.

HW 1/26/22: The plans have been revised to include overflow pipes for both infiltration areas. Dimensions have not been provided on the riprap for the flared ends. The Applicant has not provided a revised Stormwater Report as of January 26, 2022. HW recommends that the Applicant include these overflow pipes in the HydroCAD model and provide riprap sizing calculations, as applicable.

HW 3/21/22: Subsurface Infiltration Area A has been relocated to the west side of the proposed driveway; the overflow appears to be via the adjacent catch basins. HW recommends that the Applicant confirm the intended overflow system.

April 19, 2022: *The Applicant has confirmed that the proposed catch basins, CB-1 and CB-2 will be the inlets to Subsurface Infiltration Chamber System A as well as the emergency overflow. The HydroCAD model indicates that the water in the catch basins will not rise to the top of the grates during a 100-year storm event. HW has no further comment.*

- j) The calculations provided refer to a sediment forebay but it does not appear that a sediment forebay is proposed. HW recommends that the calculations be revised as needed.

HW 1/26/22: The proposed infiltration systems have been redesigned to include isolator rows. Although this is not defined as a sediment forebay, the proposed stormwater system will achieve adequate pretreatment to achieve the required TSS removal. HW has no further comment.

HW 3/21/22: The new surface infiltration basin proposed includes a sediment forebay. HW recommends that the Applicant provide the details and elevations on the plans.

April 19, 2022: *The Applicant has provided a cross section on Sheet C3.2 for the proposed Infiltration Basin and the Sediment Forebay. The size of the forebay appears reasonable. HW has no further comment.*

- 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) The Applicant has indicated that the hydrologic soil group (HSG) is A, B, and B/D as listed on the Natural Resources Conservation Services (NRCS) soil survey. Subsurface test pits were conducted on-site specifically for the proposed subsurface wastewater treatment system, but these locations are not shown and soil logs were not provided. It does not appear that any test pits were performed for the proposed subsurface stormwater system. In accordance with Volume 2, Chapter 2, page 97 of the MSH the Applicant is required to conduct a minimum of two test pits within each infiltration system. HW recommends that the Applicant conduct additional testing as required in the MSH.

HW 1/26/22: The Applicant has provided information for soil test pits performed in March of 2020. There are two test pits located in Infiltration Area A and one in Infiltration Area B. HW defers to the Board if additional testing is required prior to approval.

HW 3/21/22: Our original comment stands. In addition, there is a new infiltration area proposed for the roadway entrance and it does not appear that any testing has been performed in this area.

April 19, 2022: The Applicant conducted additional soil testing on April 8, 2022.

- ***TH-5 and TH-6 are located off of South Bolton Road in the vicinity of Infiltration Area A. Both test holes were excavated to 156" (13 feet) below the surface with a soil texture of sand.***
- ***TH-7 was excavated to 15 feet below the surface in the vicinity of the Infiltration Basin with a soil texture of sand.***
- ***TH-8 was excavated in the vicinity of Infiltration Area B to 156" (13 feet) below the surface with a soil texture of sand.***

It appears that the Applicant has adequate separation to groundwater and that the exfiltration rate utilized is acceptable. HW has no further comment.

- b) The separation distance to estimated seasonal high groundwater (ESHW) is not clear from the information provided, and the Applicant is proposing to infiltrate the stormwater entering the systems from a 100-year storm event. HW recommends that the Applicant determine the elevation of the ESHGW and provide a mounding analysis in accordance with Volume 3, Chapter 1, page 28 of the MSH if applicable.

HW 1/26/22: The Applicant has provided an elevation for ESHGW on Sheet C3.1 but this value differs from that shown on the soil test data on Sheet C1.1 for Infiltration Area A (El. 343 in the detail vs. El. 346 in the soil data). It appears that the bottom of the infiltration area may be in the water table. HW recommends that the Applicant review the elevations, adjust as needed, and provide a mounding analysis if required.

HW 3/21/22: Although the design has been changed from a subsurface infiltration chamber system to a surface infiltration basin, the comment from 1/26/22 stands.

April 19, 2022: The Applicant conducted additional soil testing on April 8, 2022, as noted above. It appears that the Applicant has adequate separation to groundwater and that the exfiltration rate utilized is acceptable. HW has no further comment.

- 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.

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) prior to land disturbance.

- b) HW recommends adding construction fence surrounding the infiltration areas during construction to protect from compaction due to equipment. Adjustment of the construction sequence may be required for the infiltration area underneath the cu-de-sac.

HW 1/26/22: The plan has been revised to include construction fencing around the proposed infiltration areas. It does not appear that any revisions have been made to the construction sequencing as suggested.

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

April 19, 2022: The Applicant has included the construction sequence on Sheet C4.1. HW has no further comment.

- c) **April 19, 2022: Previously addressed.**
- d) **April 19, 2022: Previously addressed.**
- e) **April 19, 2022: Previously addressed.**
- f) Snow storage areas are noted to be away from wetlands but are not clearly indicated on the plans. HW recommends adding locations for snow storage to the plans.

HW 1/26/22: Sheet C2.0 has been revised to indicate potential snow storage locations. These areas are located along the western side of the road, behind the berm, sidewalk, and community mailbox location. These locations may be difficult for snowplows to store snow from the roadway. HW recommends that the Applicant confirm that the locations shown are feasible.

HW 3/21/22: HW's previous comment stands, with the exception of the removal of the community mailbox.

April 19, 2022: The Applicant has adjusted the snow storage areas as shown on Sheet C2.0. HW has no further comment.

- 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.

HW 3/21/22: HW's previous recommendation to the ZBA stands.

April 19, 2022: HW's previous 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.

- 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.

- 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. The Applicant has stated that a plan was included however one was not received by HW. 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.

11. *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.

12. *Water and Wastewater Comments:*

- a) The Applicant is utilizing a flow of 150 gallons per day per two-bedroom unit for the wastewater flow. Floor plans submitted clearly show three bedrooms for all three proposed home styles. HW recommends that the Applicant revise the design flow to reflect 110 gallons per day per bedroom. Typically, the 150 gallons per day per two-bedroom unit is reserved for apartment style/nursing home buildings, not single family detached homes. The Applicant has stated that it has documentation from MassDEP stating that these detached houses can each be considered one unit. HW recommends that this documentation is provided to the ZBA prior to a decision.

HW 1/26/22: The Applicant states that it intends to use the flow specified for housing for the elderly (150 gallons per day per two-bedroom unit) and that the number of bedrooms will be clarified by the Applicant. It appears that there may need to be a deed restriction on the units to restrict the age of the residents (i.e. no minors/children). This may be in conflict with the Housing and Community Development (DHCD) policy "Local Initiative Program Policy Regarding Restrictions on Children in Age-restricted 55+ Housing).

HW 3/21/22: The number of units has been reduced from 11 homes to 8 homes. Additional information for the sewage disposal system has not been provided. HW defers to the Board.

April 19, 2022: The Applicant has included the Sewage Disposal Calculations on Sheet C5.1. HW has no further comment.

- 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.

- c) HW recommends that the Applicant add the proposed drainage pipe, sewer gravity pipe as well as the sewer force main to the road profile on Sheet C3.2 with pipe sizes and manhole structures clearly labeled. There is approximately 1,500 feet of sanitary pipe proposed to be installed and there appear to be alternative designs that may be preferable. Long lengths of sewer pipe increase the likelihood of clogs.

HW 1/26/22: The Applicant states that the sewer gravity pipe has been depicted on the profile and additional inverts and details will be depicted on the Subsurface Sewage Disposal System Design plans to be submitted to the Board of Health at a future date. HW defers to the Board of Health.

HW 3/21/22: HW's previous comment stands. The road profile is no longer included in the plan set.

April 19, 2022: The Applicant has revised the proposed design and is proposing a gravity sewer connection from 7 houses and a force main connection from one house. The 6-inch sewer main has been included on the Profile, Sheet C3.2. HW has no further comment.

- 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.

- 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.**

13. Additional Comments:

1. **April 19, 2022: Previously addressed.**
2. The Applicant states in the narrative that the project has been laid out in a manner that works with the existing topography. During the site visit the Applicant stated that the cut/fill for the site was balanced by the design engineer. It appears that there may be a significant amount of earthwork (both cut and fill) for the proposed roadway and throughout the site. Several steep slopes (2:1) and a retaining wall 12-feet in height at one point are proposed. HW recommends that the Applicant revisit the proposed grading, provide slopes at 3:1 to the maximum extent practicable and provide cut/fill calculations. Furthermore, HW recommends that the Applicant estimate the number of truck trips required for the proposed grading (either fill or soil removal).

HW 1/26/22: The Applicant has stated that erosion control blankets have been specified on 2:1 slope and that approximately 79 truck trips will be required for excess material export (1,300 cubic yards).

HW 3/21/22: The roadway location has been revised slightly along with the proposed grading. The length of the wall along the eastern property line has been reduced. HW recommends that the Applicant confirm the proposed grading in this area, it appears that the proposed 360 contour is shown tying into the existing 355 contour.

April 19, 2022: The Applicant has adjusted and clarified the proposed grading. HW has no further comment.

3. There are several discrepancies in the document submitted, the number of bedrooms varies in different locations in the documents and the plans do not reference the site being permitted as an over 55 development. The existing conditions narrative does not mention the gravel drive and states that most of the development occurs outside of the

100-foot buffer zone however there is a retaining wall proposed just outside of the 25-foot buffer zone. HW recommends that the Applicant revisit the narrative and revise as applicable.

HW 1/26/22: The Applicant has agreed to reply to this comment and provide the requested narratives. However, as of January 26, 2022, HW has not received this information.

HW 3/21/22: Previous comment stands. As of March 21, 2022, HW has not received this information.

April 19, 2022: The Applicant has provided a revised Stormwater Report that appears to describe the site and the proposed development accurately. HW has no further comment.

4. ***April 19, 2022: Previously addressed.***
5. ***April 19, 2022: Previously addressed.***
6. ***April 19, 2022: Previously addressed.***
7. There are a few areas on the plan where grading appears to be incomplete (behind homes 1, 3, 8, and 9 and Infiltration Area A). Additionally, there are a few areas on the plan where existing topography is missing (behind homes 2 and 3 and Infiltration Area A). HW recommends that the Applicant revise the plans to include grading for these areas.

HW 1/26/22: The plans have been revised to show additional survey and proposed grading. HW has no further comment.

HW 3/21/22: Proposed grading has changed with the revised layout. It is difficult to verify the proposed grading due to the lack of contour labels (both existing and proposed). HW recommends that the Applicant include additional contour labels for verification.

April 19, 2022: The Applicant has added additional contour labels. HW notes two minor discrepancies, which do not appear to impact the design.

- ***On Sheet C3.0, the existing 350 contour adjacent to So. Bolton Street on the northeast corner of the site has been called out as 355.***
 - ***On the northeast side of the property, adjacent to 342 So. Bolton Street, the proposed 358 contour does not appear to have been tied back correctly.***
8. HW recommends that a Landscape Plan be provided. At a minimum, a proposed tree line should be indicated on the plans to show any existing trees to remain and to provide buffers to neighboring properties.

HW 1/26/22: The plan set includes a landscape plan that indicates a proposed tree line, proposed street trees, and some proposed buffer areas. An abutter has expressed concern about proposed landscaping/screening. HW defers acceptance of the landscape plan to the Board.

HW 3/21/22: Previous comment stands.

April 19, 2022: The Applicant has included the Landscape Plan as Sheet C6.0. The Applicant has included 14 maple trees along the proposed roadway as well as 4

green giant arborvitaes along the west property line as a screen to the abutters 342 So. Bolton Road. HW defers acceptance of the Landscape Plan to the ZBA.

9. HW recommends that existing and proposed grades be added to the roadway profile and that the scale for the profile be comparable to the site layout. Additionally, pipes (water, sewer, drainage, etc.) should be shown on the profile to check for conflicts.

HW 1/26/22: The roadway profile has been revised to include sewer and drainage pipes. The proposed houses will have individual wells. The Applicant has stated that the sewage disposal system design and plans will be submitted to the Board of Health once waivers associated with the Comprehensive Permit are established.

HW 3/21/22: The roadway profile has been removed from the plans. HW recommends that this be included. Our previous comment stands.

April 19, 2022: The Applicant has included the Profile for Mallard Lane on Sheet C3.2. The existing grades as well as the proposed sewer and drainage pipes have been included. HW has no further comment.

10. ***April 19, 2022: Previously addressed.***
11. 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

Wetlands Review

As of April 19, 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 few outstanding comments as well as 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