SHERBORN CONSERVATION COMMISSION

19 Washington Street, Sherborn, MA 01770

MEMO

TO: Sherborn Zoning Board of Appeals (ZBA)
cc: Jeremy Marsette, Town Administrator

FROM: Michael Lesser, co-chair, on behalf of the Commission

DATE: March 20, 2024

RE: Proposed Conditions for the Farm Road Homes Project

In this new memo, specific conditions are proposed for the ZBA to include in order to meet Sherborn Wetland By-Law and Regulation issues if the project is to be approved. However, the DEP Stormwater Standards issues will be addressed in a separate new memo.

In this project, there is:

- a small disturbance of the buffer zone for the western bordering vegetated wetlands (BVW) as part of the construction of a large septic field located on the edge of the buffer zone;
- the western BVW and buffer zone are down-gradient of a large amount of septic field effluent hydrological impacts and a range of contaminants;
- significant alteration of 100% of the outer (50-100-foot) buffer zone that is on the property, and alteration of a significant area of the inner/no-alteration (50-foot) buffer zone for two overlapping wetland resources under the Sherborn Wetlands By-Law: isolated land subject to flood and isolated vegetated wetland.

In summary, in addition to significant concerns about the current project design meeting DEP Stormwater Standards, the Commission concerns in this memo are primarily related to:

- Buffer Zone Restoration and Mitigation Planting Plan: impacts on altered buffer zones to wetland resources of isolated land subject to flooding and isolated vegetated wetlands and the need for at a minimum to have an adequate restoration buffer zone planting plan;
- Septic System Impacts Review and Monitoring: The significant septic field is located at the edge of the buffer zone for a bordering vegetated wetland (BVW) can have both:

(a) water quality (such as high nitrogen concentrations that can affect groundwater quality and wetland functioning) and

(b) hydrological change impacts (such as hydrologic changes that exceed DEP standards).

Under the Sherborn wetland by-law and regulations, and unlike state wetland regulations, isolated wetlands and land subject to flooding have a 100-foot buffer zone. Given the size and extent of proposed alterations in this buffer zone, it is important to protect this area as part of

the Comprehensive Permit process. Generally, the Commission does not permit new alterations in the buffer zone - especially if this zone is currently unmanaged or is currently managed in accordance with wetland values - and the Commission requests the avoidance or reduction of such alterations. In instances when buffer zone alterations are ultimately permitted, the Commission typically requires comparable mitigation.

This memo has the following parts with proposed specific condition wording:

A. Wetlands-related Buffer Zone Restoration and Mitigation Conditions
1. Mitigation for Tree Removal/Cutting in the Buffer Zone
2. Restoration of altered buffer zone areas between the entry driveway and house walkways and the pond and isolated wetland resources
3. Management of the unaltered buffer zone adjacent to the wetland resources
4. Mitigation/Restoration in altered buffer zone areas beyond the entry driveway and house walk-ways
5. Other Wetlands Related Conditions

B. Septic System Related Conditions related to Wetlands

C. Additional Recommendations Beyond Wetland Resource Areas and Their Buffer Zones That Support Wetlands and Other Environmental Protections

A. Wetlands-related Buffer Zone Restoration and Mitigation Conditions

The isolated wetland resources and their buffer zones are important for a number of wetland interests under the state and local laws including: contributing to quality and quantity of groundwater and related private drinking water supplies, including pollution prevention; flood control/storm damage prevention; and wildlife habitat.

The “Landscape Improvements Plan” (dated 07-17-2023 if this is the latest) does not sufficiently address these issues and only drafts a rough sketch of a planting plan: “wetland restoration and bottom of detention basins NE WETMIX” and five trees.

As to water quality, having a well-vegetated buffer zone and eliminating sources of pollution/contamination are critical. Therefore, we propose a number of conditions, though a previously requested study would have better informed these conditions.

As to water quantity and flood control, maintaining the capacity of the isolated wetlands area is important, and this is part of stormwater management and compliance with the DEP stormwater standards.

As to wildlife habitat, again, how the buffer zone is vegetated and then managed is important and addressing these concerns overlaps with the recommended water-quality work. Furthermore, wildlife habitat of importance to wetland species extends well beyond the 100-foot buffer zone.

In the currently proposed project, there are limited options for mitigation within jurisdictional areas of wetlands protection, as the other buffer zone areas are mostly unaltered. Therefore, many of the Commission's proposed conditions are primarily limited to restoration:

- how the buffer zone area that will be altered/disturbed by the proposed project will be restored (e.g. landscaped/planted) and managed in the future and
- how the buffer zone that is planned to be undisturbed by the proposed project will be managed.

Given the current design of the project, buffer zone restoration and mitigation has several components: (i) the buffer zone area between the pond and the entry driveway and walkways to houses (29-32), (ii) the buffer zone area altered by the driveway and walkways and beyond, and (iii) mitigation tree removal/cutting in the buffer zones.

➔ Wording of Specific Conditions

Notes to ZBA on Permit Conditions:

A. If possible, please include the following wording as it both gives the applicant some flexibility as well as enables adjustments based on the project's final implementation. This type of conditioning is sometimes used by the Commission for large or complicated projects.

> **"As an alternative to the following conditions, the applicant can submit a planting and management plan or specific changes for review and approval by the Conservation Commission."**

B. **Commission priorities:** There are three sections below. If the ZBA does not include all of these proposed conditions, the order of priority is #2, #3 and #5 (as a group) and then #1 and lastly #4.

C. It is unusual for the Commission to put forth some of the details below as usually it is worked out as part of the permitting process. However, in this case, the Notice of Intent process under the state Wetlands Protection Act will not enable us to condition this restoration and mitigation, whereas the Sherborn By-Law and Regulations via the ZBA do.

D. Under standard Commission permitting, there would be mitigation for the area of buffer zone that is converted to impervious area, such as by road and houses. In this case, as noted, the current plan does not enable such mitigation, which could be an equal or greater area with protected mitigation plantings.

E. The wetland markers under section 5 below are now standardly done as part of Commission permitting.

1. Mitigation for Tree Removal/Cutting in the Buffer Zone

Trees cut in jurisdictional areas shall be mitigated as follows, according to the Sherborn Tree Policy, based on the size of the tree removed. Tree size is classified as the trunk diameter 4.5 feet above the ground (DBH, or Diameter at Breast Height). Mitigation is not needed for cutting dead trees.

1. For each large tree removed (12" DBH or larger) one native canopy tree shall be planted. A canopy tree is a type that, when mature, will have sufficient height (40 feet or more) and crown width (20 feet or more) to shade a large area.
2. For each small tree removed (less than 12" DBH) one native tree shall be planted.

3. Multiple native shrubs may be substituted for each required tree if the area of tree removal will retain an extensive shade canopy, or already contains native saplings that will quickly replace the removed tree.

Replacement plantings shall:

1. Be planted as close to the removed tree as possible, or else closer to the wetland edge.
2. Be a species native to northeastern North America.
3. Have a trunk diameter of 1.5" or greater. Two smaller 1" diameter trees may be substituted for each one required 1.5" diameter tree.
4. If shrub substitutions, shrubs must be potted in #2 nursery containers or larger.
5. The plantings shall have 100% survival for a period of two growing seasons or replacement plantings will be done.

2. <u>Restoration of altered buffer zone areas between the entry driveway and house walkways and the pond and isolated wetland resources</u>

Having a densely vegetated buffer zone on the newly graded and altered buffer zone areas is necessary to help with water quality and pollution prevention as well as wildlife habitat. The restoration plantings shall include some of the replacement trees mitigation as well as native shrubs and native herbaceous groundcover. Plantings shall be installed on the graded slope down to the toe of slope between the impervious surfaces and the unaltered buffer zone surrounding the wetlands and pond, in order to provide filtration and slowing of any runoff. Plantings shall not be installed in undisturbed buffer zones.

- Groundcover will be spaced in a manner to achieve complete coverage within two years, either with plugs and/or native appropriate seed mix (such as from New England Wetland Plants).
- Shrubs: The number of mitigation shrubs will be one for every 30 square-feet of altered buffer zone in this area. These appropriate native shrubs can be planted in groups and be a minimum size of one gallon container.
- Trees: A minimum of five native trees will be planted in this area, which can be counted as part of the tree mitigation if required.

To the extent practicable, the stormwater detention in this area will be designed as rain-gardens, or have rain-garden-like features, to maximize water quality and wildlife habitat values.

3. <u>Management of the unaltered buffer zone adjacent to the wetland resources</u>

The unaltered field must be mowed no more than annually and such mowing will be after October 1 and when the ground is sufficiently dry. This requirement to maintain the open field reflects its ongoing value for wildlife habitat. It is preferred that the field is mowed every other year as the dead plants are important habitat for pollinators.

4. <u>Mitigation/Restoration in altered buffer zone areas beyond the entry driveway and house walk-ways</u>

All plantings in this area will be native species. To the maximum extent practicable, this area will be planted with mitigation trees if required as well as with shrubs and would be minimally managed to have better buffer zone values.

5. Other Wetland Buffer Zone Related Conditions

• → Markers to demarcate wetland jurisdictional areas that cannot be altered in the future without Conservation Commission permitting will be placed along the east of the entry driveway and southeast of the walk-way to houses 29-32 as well as along the edge of the buffer zone for the western bordering vegetated wetlands (BVW). These markers can be obtained from the Conservation Commission and can be mounted and maintained on permanent structures (such as concrete bounds, granite posts, boulders or equivalent). The location of the wetland markers can be done in concert with the Conservation Commission or its Agent or a minimum of three along the entry driveway, two along the house walkway, three near the septic field, and every 75 feet along the rest of the BVW buffer zone.

• The driveway/road in the buffer zone must be pitched so that runoff flows away from the wetland resource.

• The manual removal of invasive species is permitted and encouraged.

• Outdoor/Exterior Lighting can disrupt wildlife habitats. Lighting should be designed to avoid illuminating wetland areas, buffer zones and potential wildlife corridors. Requested conditions are:

→ All outdoor and street lighting in the wetland buffer zones (and preferably near, for example, about 30 feet of these zones) will: (i) be directed away from wetland resource and buffer zone, (ii) be of the minimum wattage and numbers to achieve safety needs, (iii) be of a warm color of 3000K or less (which is better for humans as well), (iv) have timers to turn off or greatly reduce wattage between approximately 10pm and 5am, and (v) have photocells to turn off lighting when ambient lighting is sufficient.

• → Pesticides and Fertilizer: No pesticide (which includes herbicides) or fertilizer use in buffer zone.

• → De-icing chemicals: No sodium chloride will be used in the buffer zone. (Consider whether to specify acceptable types.)

• → Snow Storage: No snow storage shall be permitted in the buffer zone, and any run-off from snow storage shall be appropriately treated before entering the buffer zone.

• → Fill: Incorporate and follow the wetland Regulation 5.2 on using fill in buffer zone under the local by-law and regulations; see text in Attachment 1 at the end of this memo.

• → Erosion/sediment control along the edge of the wetlands buffer zone shall be extended to any areas where there will be planned work, including any tree clearing or solar array work.

• → Coal-tar based asphalt sealants will not be used on the driveway due to the direction of stormwater run-off into the wetland buffer zone. (As in December 14, 2023 email with attached information, coal-tar sealants are very hazardous and there are readily available much less hazardous sealants, though still hazardous. The Conservation Commission recently has this

condition for a new home in Sherborn where the driveway drainage enters the buffer zone. Furthermore, this condition will be part of upcoming revision of local wetland regulations.)

B. Septic System Related Conditions

The development proposes a large septic field with capacity for 32 units and 76 bedrooms located upgradient of the large wetland complex to the west. There is a risk of contamination of the wetland waters that needs to be avoided.

- ➔ Overlapping with the DEP Stormwater Standards and the outstanding Board of Health issues, there are significant concerns about the potential adverse impacts of the septic system plume and mounding on the eastern-side BVW wetland resource hydrology and water quality.

In addition to these concerns and given the project's plan to generate a large source of treated septage effluent into an area of wetlands and private water wells, the Commission requests at least one of the following testing condition.

→ At the cost of the developer, before the start of construction, baseline groundwater quality tests for (i) nitrogen and (ii) one to two other septage indicators (e.g. caffeine or detergent brighteners, phosphorus or another indicator depending on cost and accuracy) will be done in two wetland areas selected by the Conservation Commission downgradient of the septic field Similar testing will be undertaken every three years (given uncertainty of travel time while balancing testing costs) after the start-up of the septic system use at the expense of the project's homeowners' association. The Commission also has the right to do additional testing at its own expense. All testing will be supervised by either the Conservation Commission or its designee.

If the ZBA does not incorporate the above requested testing condition, the Commission would then request, at a minimum, the following:

→ The developer grants permission to the Conservation Commission to undertake baseline testing (before septic system operations) of water quality within the wetlands and their buffer zone as well as periodic similar testing in perpetuity. Such testing will be done in the presence of the project owners to the extent possible. At the Commission's cost. (This condition is consistent with a past large affordable housing project permitting.)

C. Additional Recommendations Beyond Wetland Resource Areas and Their Buffer Zones That Support Wetlands and Other Environmental Protections

As noted above, the options for buffer zone mitigation are limited in this project; therefore, as part of mitigation for alterations of the buffer zone as well as for general open space and natural resource benefits, the alteration of other natural unmanaged areas should be minimized. For example, any tree cutting should be minimized.

Also, as part of overall mitigation and wetlands and environmental protection, the Commission also recommends that the following conditions are also applied to other parts or the entire project:

- No pesticides or at least only pesticides that are of low toxicity and preferably considered organic.
- No fertilizer except for slow release organic nitrogen.
- No de-icing with sodium chloride.
- Apply the Commission's fill regulation to the entire project is/as needed.

Attachment 1

From the Sherborn Wetlands Regulations: 5.3 Fill

All fill used in connection with any project under the jurisdiction of the Commission will be clean fill, containing no garbage, refuse, rubbish, industrial or commercial or municipal fill or waste, demolition debris, or septic sludge, including, but not limited to lumber, wood, stumps, plaster, wire, rubbish, pipes, lathe, paper, cardboard, glass, metal, tires, ashes, appliances, motor vehicles or parts of any of the foregoing. No fill containing levels of oil or hazardous materials above GW-1/S-1 Method 1 Standards, as described in the Massachusetts Contingency Plan (MCP) environmental regulations as revised, will be used in connection with any project under the jurisdiction of the Commission.

The source of any fill will be made known in writing to a member of the Commission at least one week prior to placement at the site. All environmental reports and results of chemical testing of such fill will be filed with the Commission at this time. The Commission reserves the right to require specific additional chemical testing of fill by a third party, at the applicant's expense, prior to placement at the site.