Sherborn Conservation Commission

19 WASHINGTON STREET
SHERBORN, MASSACHUSETTS 01770

MEMO

TO: Sherborn Zoning Board of Appeals (ZBA)

FROM: Sherborn Conservation Commission

DATE: April 28, 2021

RE: Comments on Tetra Tech April 20, 2021 ZBA letter on "Wetlands Protection Recommendations"

The Sherborn Conservation Commission (Commission) has the following comments in response to the peer reviewer (Peer Reviewer), Tetra Tech's, April 20, 2021 letter to the ZBA responding to the Commission's April 11, 2021 memo on the Coolidge Crossing project.

1. Sherborn General Wetlands Bylaw Waivers - General

   The Peer Reviewer has recommended that the ZBA *not* grant the applicant's requested blanket waiver from the Sherborn General Wetlands Bylaw (Wetlands Bylaw). Instead, they recommend that the applicant's "request for relief be specific and include a justification for granting such relief and a description of any specific mitigation offered in exchange." The Commission agrees with this assessment.

   The Peer Reviewer goes on to note the difficulty in balancing the application of the performance standards contained in Section 5.2 of the local regulations regarding the 50-foot No Alteration Zone (NAZ) with economic considerations. They suggest instead that the ZBA create conditions using the state's Massachusetts Wetlands Protection Act (WPA) performance standards for protection of Riverfront Area. While using the state's Riverfront standards has the potential to produce useful conditions, the Commission believes that because there is no riverfront on the project site, that applying such performance standards is impracticable. But, we agree with the spirit of the Peer Reviewer's suggestion, and we agree that specific elements of the Wetlands Bylaw and

regulations should not be waived. The specific elements are embedded in the conditioning comments/recommendations below.

2. Stormwater Management

As supported by the Peer Reviewer, the Commission again recommends reduction of impervious areas with the goal of lessening the alterations of wetland buffer zone, which is extensive in the stormwater system. Specifically, we recommend the following:

a. Formally include conditions that reduce parking (both size and number) in the final stormwater design to lessen buffer zone impacts, especially in the NAZ.

b. Use of porous/pervious asphalt where practicable.

The Peer Reviewer recommends against requiring pervious paving systems for high traffic paved surfaces. The Commission, however, would like the Peer Reviewer to more closely examine the option of porous asphalt and help create conditions based on the results of this examination.

The Commission specifically requests that the Peer Reviewer examine the extent to which porous asphalt would reduce temporary and permanent disturbance to the buffer zone from the stormwater management system. We request that the Peer Reviewer explore whether the project site is appropriate for the use of this material (e.g., scale, type of existing and planned base materials, etc.) and/or any constraints on its use. We specifically request the Peer Reviewer help articulate conditions for the use of pervious asphalt to help reduce or eliminate grading and detention basin work in the NAZ.

For wetlands protection, water quality is a major concern. We request that the peer reviewer also comment on the comparability of porous asphalt to the current on this issue. Some initial Commission research indicates good water quality treatment. See Appendix A for references.

Lastly, though the Commission is not tasked with examining economic elements of any project, we understand that such considerations play a role in the Comprehensive Permit process. Therefore, while we recognize a difference in initial cost and ongoing maintenance for pervious asphalt (e.g., 4 annual cleanings vs. 2 for impervious), some case studies (see Appendix A) show an overall lower total cost due to reduced stormwater management system costs, etc.

3. Stormwater Management: Long-Term Pollution Prevention Plan (LTPPP)

The Commission recommends that the LTPPP be revised to reflect the following:

a. Deicing and Salt Storage. Given proximity to wetlands, a condition should be created to specify that deicing products cannot include sodium chloride, with a preference for limiting use to magnesium chloride due to less chloride and less overall toxicity, and acetate-based deicers compared to calcium chloride. All deicers have some negative impacts on wetlands and groundwater and the conditions in the

Comprehensive Permit should be written to recommend that deicer use be minimized.

b. Snow Disposal. Conditions should be written so that snow storage will be required to be located outside of buffer zones with a designated area to be noted on the Site Plan on the eastern edge, which maximizes distance from wetland resources, and on a pervious area that does not enter the stormwater management system. If practicable, having snow removed from the site entirely should be considered.

c. Lawn, Garden and Landscape Management. The Commission would like to see a condition specifying that within the NAZ, no fertilizers and pesticides/herbicides will be applied. In the outer buffer zone (50-100 foot), only "organic" slow-release nitrogen fertilizers should be permitted, and again no pesticide/herbicide use should be allowed.

4. Wildlife Habitat

The Commission requests that the Peer Reviewer address the following two areas:

a. Wildlife Crossings. The Commission requests that the Peer Reviewer provide specific details on the wildlife crossings they suggest/support. Factors such as specific design, location, quantity and species accommodated should be listed/articulated in the conditions. We'd also request that these conditions require crossings on *both* sides of Building 2. Lastly, in articulating design, location, etc., the Commission requests that the Peer Reviewer address concerns that a) the six-inch size suggested may be too constrained (depending on species articulated) and b) such crossings are limited to paved areas, as this may not be the best design depending on types of species at issue.

b. Exterior Lighting. The Commission requests the addition of dimmers to the approximately five lights whose lighting overlaps the NAZ so that there is at least the option to reduce exterior lighting intensity in buffer zone areas. Where safety concerns allow, the addition of motion detectors on these lights should also be considered.

5. Landscape Plan for Jurisdictional/Buffer Zone Areas

The Commission recommends that the ZBA add conditions to the Comprehensive Permit acknowledging that the project is creating significant temporary and permanent alterations in wetland buffer zones. It should also state that the applicant's final landscaping plan for wetland jurisdictional areas should maximize protecting wetland values and functions, especially wildlife habitat and water quality protection. The Commission recommends at least adding specific conditioning of this type around the following:

a. In buffer zones where revegetation will occur after work and grading is completed, plantings should be selected to restore the pre-existing/ecologically healthy buffer zone contribution to wetland functions and values. This includes attention to pre-existing buffer zone structure with regard to herbaceous, shrub, understory and canopy layers using native species of a density that maximizes the buffer zone

contribution to wetland functions and values. This is particularly important in the NAZ. Suggestions in the existing application materials that grass will be planted in areas of the NAZ, such as behind certain buildings, should be rejected in favor of the aforementioned use of native species and structure for maximized buffer zone functions and values.

b. It is noted that the current Site Planting Plan does include a tree planting schedule. It is the Commission's opinion that this tree planting schedule should be treated as preliminary, and only indicative of what the final Landscaping Plan could be. The comment in a. above is repeated here, that the choice of trees in the buffer zones and especially in the NAZ (in terms of native species, density, etc.) should be conditioned to require maximization of pre-existing/ecologically healthy buffer zone contributions to wetland functions and values. Because of the preliminary nature of the current tree planting schedule, the Commission is not commenting on it in its current state. We've only made recommendations here as to what the final plan ought to contain.

c. Lastly, the Commission recommends gathering more information on mitigating buffer zone impacts and including conditions to address such mitigation in the Comprehensive Permit. Details on the two areas mentioned in the Peer Reviewer's April 21 letter (and the requested sketches) are needed in order for the Commission to provide specific comments about their inclusion in the final plans.

Finally, the Commission suggests that the ZBA could add a condition to the Comprehensive Permit stating that the final, detailed Landscaping Plan must be submitted to the Conservation Commission as part of any future NOI application, and that the plan must meet the satisfaction of the Commission with regard to the above-mentioned maximization of wetland functions and values.

APPENDIX A

1. Water Quality Treatment by Porous Asphalt

- https://www.unh.edu/unhsc/sites/unh.edu.unhsc/files/porous_ashpalt_fact_sheet.pdf
- https://www.unh.edu/unhsc/sites/unh.edu.unhsc/files/UNHSC%20GrMeadows-ECO%20Fact%20Sheet%205-11.pdf
- https://ascelibrary.org/doi/10.1061/%28ASCE%29EE.1943-7870.0000459
- Water Quality and Hydrologic Performance of a Porous Asphalt Pavement as a Storm-Water Treatment Strategy in a Cold Climate
- Robert M. Roseen, Ph.D., P.E., D.WRE, M.ASCE; Thomas P. Ballestero, Ph.D., P.E., M.ASCE; James J. Houle; Joshua F. Briggs; and
- " …. There was exceptional water-quality treatment performance for petroleum hydrocarbons, zinc, and total suspended solids with nearly every value below detection limits. Only moderate removal was observed for phosphorous, and treatment for nitrate (NO3) was negative."
- https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em9210.pdf

2. Removing pollutants

- The primary stormwater function of porous pavement is reducing the volume of runoff. Secondary functions include flow attenuation (retaining water and then slowly infiltrating it), and nutrient reduction.

  Two processes remove pollution:
  - Sediments settle out in the aggregate.
  - Pollutants can be sequestered or broken down by microbes in the aggregate and native soils below the system.

  The Center for Watershed Protection estimates the total amount of phosphorus removed for level 1 and 2 designs at 59 to 81 percent, and nitrogen removal at 59 to 81 percent. Runoff reduction was estimated at 45 to 75 percent (CWP&CSN 2008), although studies in Oregon indicate that a reduction of runoff of 95 to 99 percent is possible. Runoff reduction itself contributes to pollutant removal, simply by reducing the volume of pollutants going downstream. Other studies have found that porous pavement effectively removes suspended solids, metals, oils, and grease (UDFCD 2008).