

September 10, 2018

Wayland Conservation Commission  
Town of Wayland  
c/o Ms. Linda Hansen  
41 Cochituate Road  
Wayland, Massachusetts 01778

**Re: Loker Conservation and Recreation Area Improvement Project  
BSC Group Notice of Intent Peer Review**

Dear Conservation Commission Members and Ms. Hansen:

Weston & Sampson has reviewed the comments from BSC Group, Inc. that were provided to us by the Wayland Conservation Commission on September 5, 2018. These comments were provided as part of a peer review of the Notice of Intent submission for Loker Conservation and Recreation Area Improvement Project. Responses to these comments are provided in the enclosed document. As noted, a revised stormwater report is currently being updated to support our responses and will be submitted separately.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.



Brandon Kunkel  
Team Leader

Enclosed: Responses to BSC Group, Inc. peer review comments

## PROJECT REVIEW COMMENTS

BSC offers the Conservation Commission the following comments based on our review of the project and information detailed above.

### I. Procedural Items and/or misc. comments

- a. While the NOI application includes the WPA Form 3 application, the Wayland Wetlands Bylaw Application, as well as the Storm Water Management and Land Disturbance Bylaw application, none of these applications are signed by the applicant.

*WESTON & SAMPSON RESPONSE: The Wayland Conservation Commission (Nicole Thomson) confirmed the receipt of all required signature pages.*

- b. Was the NOI submitted to the DEP? It does not appear a file number has been generated by the DEP for this project as of 8/30/18.

*WESTON & SAMPSON RESPONSE: The NOI was submitted to MassDEP on 7/18/18, however, the DEP has indicated that they do not have a copy on their end. Another copy of the NOI was forwarded to the DEP on September 10, 2018.*

- c. Item 6 on the Wayland Wetlands Bylaw application requires a reference to the Title/Date of Plans submitted with the application. No information is provided. This information should be provided.

*WESTON & SAMPSON RESPONSE: Please refer to the plans enclosed in the submission which include the title and date.*

- d. The cover letter notes two copies of NOI application required. The Wayland Wetlands Bylaw requires 8 copies to be submitted.

*WESTON & SAMPSON RESPONSE: The Wayland Conservation Commission (Nicole Thomson) confirmed it was satisfied with the number of hard copies submitted.*

- e. The Wayland Wetlands Regulations note “The Conservation Commission does not permit an increase in the rate or volume of runoff for frequent storm events (0.5” rainfall, 1” rainfall, 2-year storm event) and generally requires no increase in volume for 10-year, 25-year storm events and generally for 100-year events.” These regulations also require runoff calculations for 1” rainfall, 10-year and 100-year storm events...” No calculations are included within the NOI for 0.5” and 1” storm events.

*WESTON & SAMPSON RESPONSE: Calculations have been revised to include an analysis using the 0.5” and 1” storm events. A full, revised stormwater report will be submitted separately.*

- f. Site Plans – The references to “R&B” and “R&R” occur throughout these plans. These abbreviations should be noted within the legend.

*WESTON & SAMPSON RESPONSE: These references could not be found in the plans.*

- g. Site Plans, Sheet L1.00 Overall Existing Conditions Plan - The three ponds are labelled as North, East and West Ponds. These are unlabeled on the other Site plan sheets, and identified as Ponds 1, 2 and 3 in Wetlands Report. It would be helpful to consistently label these ponds within the NOI submittal plans and materials.

*WESTON & SAMPSON RESPONSE: The plans were modified to include "North", "East", and "West" where applicable.*

- h. NOI application, Project Description, Project Location - notes "There is currently a paved access drive at Commonwealth Road that is remnant of the sites previous use as a Dow company facility." Based upon my discussion with Town staff during our site visit, I understand that the Dow company conducted testing on this site, and that a Phase I site investigation under the MCP was conducted for the property after Dow left the site. This information should be reviewed by the appropriate Wayland agencies, as there will be excavations and earth moving operations undertaken as part of the proposed athletic field construction.

*WESTON & SAMPSON RESPONSE: This was thoroughly investigated and vetted by a Weston & Sampson Environmental Engineer and Licensed Site Professional (LSP) which included testing on site. The environmental report was provided to the Town of Wayland and it is part of the project record.*

- i. NOI application, Project Description, Water Quality, page 2 references leachate sampling was conducted at the existing High School artificial turf, and that these studies indicated no significant water quality impacts resulted from the use of artificial turf. It would be useful to be provided these testing results, both for this project and for the proposed new turf field at the Wayland High School.

*WESTON & SAMPSON RESPONSE: Wayland Water Department conducted tests at the Happy Hollow wells on a regular schedule and indicated no significant water quality impacts. The results were indicated via a public comment by Paul Brinkman, Wayland Town Engineer, at the July 18, 2018 PMBC meeting.*

- j. Stormwater Management and Land Disturbance Bylaw Chapter 193 Application, Additional Information, page 3 – indicates "grass swales constructed." The locations of these grassed swales are not indicated on the site plans sheets.

*WESTON & SAMPSON RESPONSE: The stormwater design no longer requires swales and have been removed from the project, and the plans have been modified accordingly.*

- k. Stormwater Report/ Stormwater Modeling – while test pit information is provided, there is no mention as to how the infiltration rate used within the proposed infiltration areas has been determined.

*WESTON & SAMPSON RESPONSE: The stormwater report narrative has been revised to provide information as to how the infiltration rate was determined. A full, revised stormwater report will be submitted separately.*

## II. Technical Items

- a. Site Plans, Sheets L5.02, Grading Drainage & Utility Enlargement Plans, and L7.02 Construction Details, as well as Attachment C, Test Pit Summary and Logs – The proposed construction of a new parking lot to serve the athletic field will include the construction of an underground infiltration system to mitigate the increase of runoff from the new impervious area created by the parking area. The logs for test pits TP-5 and TP-6 near the edge of the proposed parking area ended at 5.6' to 7.3' below existing grade respectively. Boring B-5-L, located directly within the proposed infiltration area was ended at a depth of 6' below existing grade. The existing grade at Boring B-5-L is approximately 199.4, which puts the bottom of the excavation for this boring at elevation approximately 193.4. The bottom elevation of Test Pits TP-5 and TP-6 are approximately 194.4 and 194.7, respectively. No groundwater was observed in any of these excavations. It is standard practice to assume the groundwater elevation is at the bottom of the excavation if none is encountered above the depth of maximum excavation. In this case, a groundwater elevation of 193.4 would be used for design.

The proposed design of the infiltration system in this area will have a surface grade of approximately elevation 200, with the bottom of stone within these infiltration chambers at elevation 193.5. Per the MassDEP Stormwater regulations, the minimum distance from the anticipated groundwater elevation to the bottom of an infiltration system is 2.0'. Based upon the current available soils information, the proposed design does not meet the DEP groundwater separation criteria.

*WESTON & SAMPSON RESPONSE: We request that the commission approve the project with a condition requiring that the contractor perform confirmatory test pits at the time of construction to verify that the soil conditions assumed during design are consistent with actual conditions. We have had success with this approach in the past on similar projects. Conditional approval language that has been used successfully on prior projects is provided as follows for the convenience of the Commission:*

*“Prior to constructing any impervious surfaces associated with the proposed infiltration basins there shall be confirmatory tests to demonstrate adequate permeability for infiltration and acceptable seasonal high groundwater. The results of these tests shall be submitted to the Conservation Commission within ten days of the testing. The testing is required to confirm actual conditions are the same as the presumptions in the design of the BMPs. In the event there is a need to change the design to meet the requirements of the BMP, a revised submission shall be submitted to the Conservation Commission for their evaluation as to whether the revisions are within the parameters of the original project and the Permit may be amended or if the changes are such that a new application will be required.”*

- b. Stormwater Report Standard 1: No New Untreated Discharges/Site Plans Sheet L5.02, Grading, Drainage & Utilities Enlargement Plans – report indicates that no new untreated stormwater discharges will be created as a result of this proposed project. However, a review of the proposed grading as shown on Site Plan Sheet L5.02 indicates that untreated runoff from a portion of the proposed parking area will flow as sheet flow down the proposed very steep access driveway (a 13% driveway grade is noted on this plan). At least a portion of the sheet flow down a drive with this slope will bypass the catch basin grates, even if

special high inlet capacity grates are used on these catch basins structures. As there is no curb proposed on the new drive at the bottom of this driveway, it is likely that untreated stormwater will flow across the lower driveway and flow into the wetlands area around and eventually into the West Pond. In a similar manner, except for the first 160 feet or so, the site access drive from Commonwealth Road to the driveway accessing the proposed parking area and which continues to the proposed athletic field does not have curbing along either side of this paved drive. This driveway is crowned in the middle for most of its length, except where it meets the parking lot access drive. Runoff from the crown will flow off the edge of this drive along its length and into the wetlands and the West Pond as noted above.

*WESTON & SAMPSON RESPONSE: The access driveway/access road from Commonwealth Road and the access road to the field itself are a redevelopment of existing roads on the site that are presently not curbed. Due to the fact that we are redeveloping these existing access drives, we propose to meet the stormwater standards to the "maximum extent practicable" as allowed by the stormwater handbook. Under existing conditions, the parking lot at the top of the hill allows runoff to run down the access drive and the bypass condition noted above may occur under existing conditions. Proposed conditions will improve this potential bypass condition as less stormwater will be directed toward the access drive and more will be diverted on the onsite stormwater chamber system. To further improve upon existing conditions, we are proposing the addition of curbing along critical portions of the edges of the existing access drives. This will direct runoff to existing catch basins. The provision of additional BMPs does not appear to be practicable due to space limitations at these access drives without additional site disturbance and potential disturbance to resource areas.*

- c. Site Plans Sheet L5.02, Grading, Drainage & Utilities Enlargement Plans – Due to the steep 13% grade proposed for the access drive to the new parking area for the Loker Field, it is suggested that a vehicle barrier such as a guard rail be placed on the southern side of the driveway from Commonwealth Road opposite the parking lot drive. This barrier would act to prevent vehicles coming down the parking lot access drive from leaving the lower driveway.

*WESTON & SAMPSON RESPONSE: The site does not have a guardrail or other barrier currently. A barrier system would not serve to improve stormwater management or quality.*

- d. Site Plans Sheets L5.01 and L5.02, Grading, Drainage & Utilities Enlargement Plans - Understanding the sensitivity to the removal of existing trees within the Loker Recreation and Conservation area, considerable grading requiring the removal of existing trees is proposed off of the southwestern end of the parking lot, and at the southwestern end of the athletic field. Understanding that construction cost is an important consideration, has the potential of reducing the grading in these two areas by the use of retaining walls been evaluated?

*WESTON & SAMPSON RESPONSE: The use of retaining walls was investigated and it was determined that the Town of Wayland does not have the budget to include extensive retaining walls within the current scope.*

- e. Stormwater Report Narrative, Standard 3: Recharge – see comment IV a. above regarding lack of separation from bottom of system to bottom of soils excavations and assumed high groundwater elevation. Based upon this information, it is not certain that adequate recharge will take place.

*WESTON & SAMPSON RESPONSE: See response to Technical Item 2a above.*

- f. Stormwater Report Narrative, Standard 4: Water Quality – see comment 4a above regarding lack of separation from bottom of system to bottom of soils excavations and assumed high groundwater elevation, as well as comment 4b above indicating portions of the driveways serving the site will allow direct runoff of untreated stormwater into the West Pond and its surrounding wetlands. Based upon this information, it is not certain that “All stormwater from impervious areas on the site will undergo treatment to bring TSS levels within regulated limits (>80% removal).”

*WESTON & SAMPSON RESPONSE: The stormwater report narrative has been revised to address this item for consistency with the design approach described in responses above. A full, revised stormwater report will be submitted separately.*

### III. Turf Design

- a. The infill material is not specified in the NOI or site plans. BSC assumes traditional SBR crumb rubber infill will be used based on the comment on page 2 of the NOI, regarding studies performed on crumb rubber infill material leaching. Alternative infill materials are available for consideration such as acrylic coated crumb rubber, sand and Thermo Plastic Elastomer (TPE).

*WESTON & SAMPSON RESPONSE: Virgin crumb rubber will be specified.*

- b. Based on the proposed synthetic turf system design and the size of the crumb rubber granules, it is unlikely that crumb rubber infill will migrate through the synthetic turf, the stone drainage layer under the field, the stormwater drainage system and discharge into the adjacent wetlands. Infill migration could occur through tracking from athletes' shoes or maintenance equipment. However, these activities are not expected to discharge to or occur in or around the wetlands.

*WESTON & SAMPSON RESPONSE: No response required.*