

August 31, 2018

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

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Worcester, MA 01608

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**RE: Wayland Loker Conservation and Recreation Area Multi-Purpose Athletic Field
Wayland, MA
Notice of Intent Peer Review**

Dear Conservation Commission Members and Ms. Hansen:

BSC Group, Inc. (BSC) has completed a peer review of the Wetlands Notice of Intent submission for proposed Athletic Facilities at Loker Conservation and Recreation Area. This work is being undertaken under BSC's contract dated August 10, 2018, as approved by the Town of Wayland on August 17, 2018.

BASIS OF CURRENT REVIEW

For this peer review, BSC reviewed the following documents:

- *Notice of Intent, Loker Conservation and Recreation Area, Wayland, MA*, dated July 2018, prepared for Town of Wayland, prepared by Weston and Sampson, including Stormwater Management Report, Site Plans and Attachments for Appendix A through Appendix F.
- *Response Letter to Loker Field Submission*, submission to Conservation Commission for the August 23, 2018 meeting, prepared by Willow Brook Condominium Association (Abutters)
- *Response to Comments, Wayland High School Athletic Facilities NOI, Wayland, MA* dated August 16, 2018, prepared by Weston & Sampson, including attachments.
- **Various e-mails**, through August 30, 2018, between Linda Hansen, the Conservation staff, and BSC Group, including attachments.

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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.
- 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.
- 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.
- d. The cover letter notes two copies of NOI application required. The Wayland Wetlands Bylaw requires 8 copies to be 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.
- f. Site Plans – The references to “R&B” and “R&R” occur throughout these plans. These abbreviations should be noted within the legend.
- 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.
- 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.

- 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.
- 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.
- 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.

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.



- 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.
- 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.
- 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?
- 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.
- f. Stormwater Report Narrative, Standard 4: Water Quality – see comment IV a. above regarding lack of separation from bottom of system to bottom of soils excavations and assumed high groundwater elevation, as well as comment IV b. 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).”

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).
- 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.

Should you have any questions regarding our review and provided comments, please do not hesitate to contact Melissa at (617)-896-4517 or mkaplan@bscgroup.com or Frank at (617) 896-4471 or fdipietro@bscgroup.com.

Sincerely
BSC Group, Inc.

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