

September 2, 2021

Vannary Tan and David Glenn, P.E.
Stantec Consulting Services, Inc.
65 Network Drive, 2nd Floor
Burlington, MA 01803-2567

Re: Town of Millbury Improvements
Downtown Revitalization Project – Phase 2

Dear Ms. Tan and Glenn:

We are in receipt of your comments dated July 5, 2021, regarding the project noted above. Our responses are indicated below in ***bold italic*** text and are as follows:

STORMWATER MANAGEMENT

1. We request an individual cross section of each Rain Garden area and Bioswale identifying the existing and proposed elevations, seasonal high groundwater, existing utilities and surface features be provided for review.

Response: The drawings have been updated to include cross sections to the different types of rain gardens. We have several rain gardens that are similar and are providing sections of the different types. Due to experience with the soils in the area we have not conducted test pits at every rain garden location. The rain gardens are proposed in the public street and the Town does not want to dig up the street for test pits, it also has recently been repaved in several of the locations. We will include test pits in the contract to see if seasonal high groundwater is where expected prior to the construction of the rain gardens. This was acceptable in Phase 1 of the project.

2. We recommend the pre- and post-construction drainage maps be revised to include additional documentation/clarification on the Point of Interest (POI) for the project area is the Blackstone River.

Response: The existing and proposed stormwater runoff flows into catch basins on Grove Street, Elm Street and River Street. The catch basins flow to the existing municipal drainage network which discharges to the Blackstone River. Therefore, the stormwater runoff discharge point is the Blackstone River. Figures 2 and 3 have been revised to more clearly reflect the stormwater discharge point. The description of the existing and proposed hydrology has been revised in the memorandum to provide

clarification. The revised memorandum and figures are included with this correspondence.

3. We recommend construction schedule and sequence of redevelopment including clearing, demolition, rough grading, construction, final grading, paving and vegetative stabilization be addressed by BLC.

Response: The construction schedule will be provided to the Planning Board as the design progresses, the project bid dates are set and we establish a construction schedule.

MassDEP STORMWATER STANDARDS

1. Standard 1 – No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. The project is designed so that new stormwater conveyances does not discharge untreated stormwater into wetlands.

Response: Acknowledged.

2. Standard 2 – Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development discharge rates. As identified in the summary, the project will not result in an increase in peak flows under post- development conditions for the 2, 10, and 100-yr storm events.
 - a) We note that the location of POI-1 is in three separate locations, as shown in the existing and proposed drainage map. We recommend the pre- and post-construction drainage maps be revised to include additional documentation/clarification on the Point of Interest (POI) for the project area is the Blackstone River.

Response: The existing and proposed stormwater runoff flows into catch basins on Grove Street, Elm Street and River Street. The catch basins flow to the existing municipal drainage network which discharges to the Blackstone River. Therefore, the stormwater runoff discharge point is the Blackstone River. Figures 2 and 3 have been revised to more clearly reflect the stormwater discharge point. The description of the existing and proposed hydrology has been revised in the memorandum to provide clarification. The revised memorandum and figures are included with this correspondence.

- b) We recommend the Applicant address discrepancy between the pre-construction runoff of the HydroCAD model and Table 1.
 - i. In the HydroCAD model, peak runoff during the pre-construction 2-year storm event is 9.61 cfs. However, in the Stormwater Management Summary Table 1, the runoff is listed as 8.94 cfs

Response: Table 1 has been updated in the revised memorandum to reflect the results of the HydroCAD model.

- ii. In the HydroCAD model, the peak runoff during the pre-construction 10-year storm event is 18.60 cfs. However, in the Stormwater Management Summary Table 1, the runoff is listed as 15.55 cfs.

Response: Table 1 has been updated in the revised memorandum to reflect the results of the HydroCAD model.

- iii. In the HydroCAD model, the runoff during the pre-construction 100-year storm event is 38.41 cfs. However, in the Stormwater Management Summary Table 1, the runoff is listed as 31.74 cfs.

Response: Table 1 has been updated in the revised memorandum to reflect the results of the HydroCAD model.

- c) We recommend the Applicant address the discrepancy between the post-construction runoff of the HydroCAD model and Table 1.
 - i. In the HydroCAD model, the peak runoff during the post-construction 2-year storm event is 9.38 cfs. However, in the Stormwater Management Summary Table 1, the runoff is listed as 8.87 cfs.

Response: Table 1 has been updated in the revised memorandum to reflect the results of the HydroCAD model.

- ii. In the HydroCAD model, the peak runoff during the post-construction 10-year storm event is 18.28 cfs. However, in the Stormwater Management Summary Table 1, the runoff is listed as 15.42 cfs.

Response: Table 1 has been updated in the revised memorandum to reflect the results of the HydroCAD model.

- iii. In the HydroCAD model, the peak runoff during the post-construction 100-year storm event is 37.96 cfs. However, in the Stormwater Management Summary Table 1, the runoff is listed as 31.53 cfs.

Response: Table 1 has been updated in the revised memorandum to reflect the results of the HydroCAD model.

- d) The exiting drainage areas listed for EDA 100, EDA 200, and EDA 300 in HydroCAD does not match with the areas listed in Figure 2: Existing Drainage Map.

Response: The existing hydrology table on Figure 2 has been updated to match the HydroCAD model. The revised figure is included with this correspondence.

- e) The proposed drainage areas listed for PDA 300 in HydroCAD does not match with the areas listed in Figure 3: Proposed Drainage Map.

Response: The proposed hydrology table on Figure 3 has been updated to match the HydroCAD model. The revised figure is included with this correspondence.

- f) We request a hydraulic analysis for the 2 and 10-year storm events be provided for the proposed Rain Gardens and Bioswale areas to further evaluate the hydraulic conditions of each stormwater BMP with respect to the estimated peak discharge rates at each location.

Response: The proposed rain gardens and bioswales have been designed in accordance with the Massachusetts Department of Environmental (MassDEP) Stormwater Management Handbook and the Town of Millbury standards. Additional hydraulic analysis is not required.

3. Standard 3 – Loss of annual recharge to groundwater should be eliminated or minimized using infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type.

The Applicant has provided calculations for groundwater recharge for the Rain Gardens and porous pavers, which results shows there is no loss of annual recharge to groundwater. However, we recommend a test pit be performed within the rain garden areas to verify the soil texture and seasonal high groundwater.

Response: Four test pits were performed in the proposed rain gardens and bioswales in the parking lot on June 24, 2021 by GEI consultants. A copy of the geotechnical report is included with this correspondence. Additional test pits will be performed in the remaining rain gardens and porous pavement/paver areas during the construction process.

4. Standard 4 – Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:
- Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;
 - Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and
 - Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook

The submitted TSS removal worksheets show an improvement from existing conditions for total suspended solids (TSS) removal and water quality volume. However, we note the TSS removal at selected discharge locations is less than 80% and the total phosphorus removal is less than 50%.

Response: Acknowledged. The project is a redevelopment project and as such must comply with Standard 4 to the maximum extent practicable. The proposed design will reduce the total TSS load and the total phosphorous on site.

5. Standard 5 – For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Water Act, M.G.L. c. 21, §§26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

The project is not within a critical area; therefore, this standard is not applicable.

Response: As defined in the MassDEP Stormwater Management Handbook, the proposed site is not considered a Land Use with Higher Potential Pollutant Loads.

6. Standard 6 – Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, considering site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A “stormwater discharge” as defined in 314 CMR 3.04(2)(a) 1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

The project is not associated with stormwater discharges near a critical area; therefore, the standard is not applicable.

Response: Acknowledged.

7. Standard 7 – A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

This project is a redevelopment project and is required to meet the above Stormwater Management Standards.

Response: Acknowledged. The project is a redevelopment project and is required to meet Standards 1 (for existing stormwater discharges), 2, 3, 4, 5, and 6 to the maximum extent practicable. The project meets all of the standards with the exception of Standards 1 (for existing stormwater discharges), 3 and 4 which are met to the maximum extent practicable.

8. Standard 8 – A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

As part of the stormwater management plan, we recommend an erosion and sedimentation control plan be included on the site plan. We recommend construction phasing, label and identify areas of erosion and sediment controls be included on the plan.

In Stantec's opinion, the project will require coverage under the NPDES Construction General Permit and require the preparation of a Stormwater Pollution Prevention Plan (SWPPP). We recommend the SWPPP be provided to the Board prior to construction.

Response: A site preparation plan will be included in the construction documents plan set. The site preparation plan will include the location and type of erosion and sediment controls to be implemented. The project will not be constructed in phases therefore construction phasing will not be included on the site preparation plan. To comply with the Environmental Protection Act (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) the Project will submit a Stormwater Pollution Prevention Plan (SWPPP) to the EPA. A copy of the draft SWPPP is included with this correspondence.

9. A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

An operation and maintenance plan is included as part of the stormwater report submittal. In Stantec's opinion the standard is met.

Response: Acknowledged.

10. All illicit discharges to the stormwater management system are prohibited.

As stated by BL Companies, no illicit discharges are proposed to the stormwater management system. We recommend a signed illicit discharge statement be provided by the applicant.

Response: As discussed in the previously submitted memorandum, the stormwater runoff from the site will discharge into the existing drainage system. No statement will be provided with regard to the existing drainage system in portions of the system not included in the redevelopment project area. The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharge from within the project area.

GENERAL COMMENTS

1. We recommend test pit logs be provided in Attachment H – Geotechnical Report.

Response: As discussed above the test pit logs for the four test pits conduct on June 24, 2021 are included with this correspondence. Logs for the test pits to be conducted during construction will be provided to the town after they have been completed.

2. Site Drainage Details DN-04
 - a. Detail for overflow drain inlet be provided on the plans.

Response: The rain garden detail has been updated to provide more information on the overflow drain inlet. Sheet DN-11 is included with this memorandum.

We trust this addresses your concerns. Should you require additional information, feel free to contact me at 781-619-9521 or lennis@blcompanies.com.

Sincerely,

Elizabeth Ennis, P.E.
Senior Engineer