



June 7, 2022

Town of Billerica  
Planning Board  
365 Boston Road  
Billerica, Massachusetts 01821

Attn.: Ms. Isabel Tourkantonis                      Kristel Bennett  
          Director of Environmental Affairs            Director of Health

Re:     **161 Concord Road - Peer Review - Stormwater**

Dear Ms Tourkantonis and Ms Bennett:

BETA Group, Inc. has received a copy of documents submitted for a **Proposed GMP Lab Building 0 & 161 Concord Road Billerica, Massachusetts**. This letter is provided to outline BETA's findings, comments, and recommendations.

## **BASIS OF REVIEW**

The following documents were received by BETA and will form the basis of the review:

- **Site Plan Special Permit Package for Proposed cGMP Lab Building 0 & 161 Concord Road Town of Billerica, Middlesex County** dated May 11, 2022, prepared by Bohler, Boston, MA, including the following attachments:
  - Cover Letter
  - Project Narrative
  - Form S Application for Site Plan Special Permit
  - Special Permit Checklist
  - Concept Plan – Elevations
  - Quickclaim Deed
  - Site Aerial Exhibit
  - Certified Abutters List
  - Fire Truck Turning Exhibit
  - Certificate of Decision Site Plan Special Permit 9/18/07
  - Special Permit Modification Decision 4/30/08
- Site Plans (21 sheets) entitled **Proposed Site Plan Documents for Berkeley Location of Site: 0 & 161 Concord Road Town of Billerica, Middlesex County, Massachusetts Map #68, Block #22, Lot #1, Map #69, Block #29, Lot #1** dated May 11, 2022, prepared by Bohler, Boston, MA
- **Transportation Impact Assessment Proposed Lab/cGMP 0 & 161 Concord Road Billerica, Massachusetts** dated May 2022, prepared by Vanasse & Associates, Inc., Andover, MA
- **Drainage Report for Proposed cGMP Lab Building 0 & 161 Concord Road Town of Billerica, Middlesex County** dated May 11, 2022, prepared by Bohler, Boston, MA
- **Notice of Intent Proposed cGMP Lab Building 0 & 161 Concord Road Billerica, Massachusetts** dated May 11, 2022, prepared by Lucas Environmental, Quincy, MA.

Review by BETA will include the above items along with the following:

- **Billerica Board of Health Rules and Regulations** updated June 2014
- **The Town of Billerica Conservation Commission Wetlands Protection Regulations** dated 6/25/08
- **Massachusetts Stormwater Handbook** effective January 2, 2008 by MassDEP
- **Massachusetts Erosion and Sedimentation Control Guidelines for Urban and Suburban Areas** reprinted May 2003

## INTRODUCTION

The predominately wooded 22.8± acre project site, comprised of two lots, assessor's map 68 block 22 lot 1 and Map 69, block 29, lot 2, is located on the west side of Concord Road. The project parcel is within the Industrial Zoning District. Abutting properties are also in the Industrial Zoning District.

The Concord River flows along the northwest border of the parcel with associated vegetated wetlands, FEMA mapped 100-year flood and Green Engineering flood zones. A perennial stream is located off the site and along the north and northeast border. Plans indicate wetlands and stream in the south and southwest portions of the site. The property is not in proximity to estimated habitats of rare or endangered species. NRCS soil maps indicates the presence of Scituate fine sandy loam with Hydrologic Soil Group Rating (HSGR) D (slow to very slow infiltration).

Applicant proposes to construct a 197,900± sq. ft. footprint Lab Facility with associated parking, loading, landscaping, utility services, and stormwater management systems within the limits of the existing parking area.

The project includes work within wetland resource areas, including buffer zones to bordering vegetated wetlands areas and bordering land subject to flooding which will require obtaining an Order of Conditions from the Billerica Conservation Commission. The project will disturb more than an acre of land, as well as will be within or within proximity of mapped flood zones, and therefore will require a Stormwater permit from the Board of Health. Stormwater management systems will need to comply with the MassDEP Stormwater Management Standards and the Billerica Stormwater Management Bylaw and regulations.

## SITE VISIT

BETA conducted a site visit on 6/3/2022 to assess existing conditions. Due to the wooded nature of the Site, the visit was primarily conducted for those areas near to Concord Road. Field conditions were found to be generally in accordance with the existing conditions plan. Comments associated with this site visit are as follows and as noted throughout this report.

SV1. *Indicate proposed treatment of existing headwall located along the former Middlesex Turnpike (near wetland flag WFA-18. Determine destination of the culvert pipes which connect to this headwall.*

## BILLERICA BOARD OF HEALTH RULES & REGULATIONS

The project is subject to the requirements of Chapters 5 and 6 of the Board of Health Regulations. Per the Stormwater Management Bylaw, Chapter 6 of the BOH Regulations applies to the project as it will disturb greater than 1 acre of land. Conformance to Chapter 6 is discussed in the Stormwater Management section below.

Building floor elevation of 182' is 2 foot or more higher than the estimated seasonal high groundwater, based on test pits completed throughout the Site.

## ENVIRONMENTAL REGULATIONS (CHAPTER 5 OF THE BILLERICA BOH RULES AND REGULATIONS)

A portion of the project parcel is within the Green Engineering flood plain (Map 56). The Map depicts a flood plain associated with the Concord River (Elev. 122' ± NGVD) which extends onto a portion of the Site which will not be altered by the proposed development. A similar area is depicted on the FEMA FIRM map (Elev. 118.2'). The map also depicts a flood plain along the western boundary of the Site which generally follows the stream and wetlands in this area and crosses Concord Road to the southeast of the Site. The elevation of this flood plain varies from 122' ± NGVD near the Concord River to 170' ± NGVD near Concord Road.

The eastern Green Engineering Flood Plain, as depicted on Map 56, does not extend onto the Site.

- B1. *Provide information on anticipated noise, odors, and waste materials anticipated from the proposed use (§5.7.001(1)).*

## **STORMWATER MANAGEMENT**

The stormwater management design proposes to capture stormwater runoff in three subsurface detention systems. Conveyance to the subsurface systems is provided via catch basins, water quality inlets, and roof drains.

Overflow from subsurface systems is directed to three new outfalls which convey runoff to the east and west of the Site. Each outfall is located within the 100-foot wetland buffer zone and riprap aprons are provided to control erosion and sedimentation.

### **STORMWATER MANAGEMENT REGULATIONS (CH. 6 OF THE BILLERICA BOH RULES AND REGULATIONS)**

The project proposes to disturb land in excess of once acre within the Town of Billerica. It is therefore subject to the Stormwater Management Regulations and is required to obtain a Stormwater Management Permit from the Board of Health. Compliance with these regulations is outlined below and throughout the following sections.

- SV2. *Indicate the watershed basin that the project is located within and EPA's watershed and waterbody assessment and TMDL and/or impairment status of the downgradient waterbody. Indicate measures to address pollutant(s) of concern (§6.6.011(2)(b)(iv)).*
- SV3. *Provide comparison of pre- and post-development runoff volumes (§6.6.011(2)(b)(v)).*
- SV4. *Provide hydraulic calculations for the proposed culvert (§6.6.011(2)(d)(iv)).*
- SV5. *Revise all drainpipes to include a minimum of 2.5 feet of cover (§6.7.009(24)).*
- SV6. *Provide grate at outfalls greater than 24" in diameter to prevent ingress (§6.7.009(26)).*

### **MASSDEP STORMWATER STANDARDS**

The project is subject to the Massachusetts Stormwater Standards as outlined by MassDEP. Compliance with these standards is outlined below:

**NO UNTREATED STORMWATER (STANDARD NUMBER 1):** *No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. Three new outfalls are proposed under this project which will discharge to the 100-foot wetland buffer zone. Riprap aprons are proposed to control erosion and sedimentation.*

- SV7. *Provide sizing calculations for determination of riprap D50 and depth.*
- SV8. *Revise apron for FES-3 to match the calculated length required.*

**POST-DEVELOPMENT PEAK DISCHARGE RATES (STANDARD NUMBER 2):** *Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. The project proposes an increase in impervious area and changes to site hydrology. Increases in stormwater runoff will be mitigated via three subsurface detention systems. Calculations indicate a decrease in peak discharge rate to all watersheds.*

- SV9. *Revise routing to include at least 3 points of analysis: stormwater runoff to the Concord River, stormwater runoff to the western wetlands, and stormwater runoff to the eastern wetlands.*

- SV10. *Review grading design near the eastern site entrance. The proposed mound/berm appears to direct runoff towards the nearby existing catch basin which would constitute an increase in peak discharge rate to this location.*
- SV11. *Provide existing / proposed tree lines on the watershed plans.*
- SV12. *Correct the scale depicted on the watershed plans.*
- SV13. *Review flowpath used for existing hydroCAD model. Point "A" does not appear to be the most hydrologically distant point from the point of analysis.*
- SV14. *Clarify intended treatment of existing drainage structures along western driveway, including which will be removed and which will be retained. Provide information on proposed outfall location for structures to remain and for the existing stormwater basin. Provide sizing calculations for pipes to remain.*
- SV15. *Revise Pond 1P bottom elevation in HydroCAD to be consistent with the "Inside BTM" elevation on the plans.*
- SV16. *Review OCS details for consistency with plan view callouts and hydroCAD model.*

**RECHARGE TO GROUNDWATER (STANDARD NUMBER 3):** *Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to maximum extent practicable. NRCS soil maps indicate that soil in the area of proposed modifications is predominantly Scituate fine sandy loam with HSGR D (very low infiltration). Test pits conducted at the Site indicate the presence of fine sand and silt.*

The Applicant has opted to exclude infiltration from the design on the basis that subsurface soils are of a low permeability. As such, the required recharge volume has not been provided. Per the Stormwater Handbook, standard 3 need only be met to the maximum extent practicable for soils comprised of C and D soils.

- SV17. *Recommend a condition that an agent of the town observe native soils after excavation for basins to confirm design assumptions.*
- SV18. *Revise design of subsurface basins such that 8" orifice invert is equal to the bottom of the chamber. As designed, the lowest 1' of Pond 2P is incapable of drawdown.*
- SV19. *Revise design of subsurface basins such that the peak flood elevation does not exceed the top elevation of the system.*

**TOTAL SUSPENDED SOLIDS (STANDARD NUMBER 4):** *For new development, stormwater management systems must be designed to remove 80% (90% per BOH Regulations) of the annual load of Total Suspended Solids (TSS). The project includes treatment via proprietary water quality units. In some areas, treatment will be supplemented by deep sump catch basins. The resulting TSS removal rate are listed as 94%, and 96%, respectively.*

The project is required to treat the 1.0-inch water quality volume (See Standard 5). Water quality volume is provided via the proposed proprietary units in excess of what is required. A Long-Term Pollution Prevention Plan has been provided as part of the Operation and Maintenance Plan.

- SV20. *Provide calculations for provided phosphorus and nitrogen removal rates.*
- SV21. *Provide TSS removal for the front portion of the western driveway.*

**HIGHER POTENTIAL POLLUTANT LOADS (STANDARD NUMBER 5):** *Stormwater discharges from Land Uses with Higher Potential Pollutant Loads (LUHPPLs) require the use of specific stormwater management BMPs. The project is considered a LUHPPL under the definition of a parking lot with high intensity uses (1,000 vehicles*

trips per day or greater) and is required to comply with this section. A Spill Prevention and Control Plan has been provided with the Stormwater Management Report.

SV22. *Revise narrative to identify the Site as a LUHPPL.*

**CRITICAL AREAS (STANDARD NUMBER 6):** *Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas. The project is not located in a critical area – standard not applicable.*

**REDEVELOPMENT (STANDARD NUMBER 7):** *Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. The project is not a redevelopment – standard not applicable.*

**EROSION AND SEDIMENT CONTROLS (STANDARD NUMBER 8):** *Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities. As the project proposes to disturb greater than one acre of land, it will be required to file a Notice of Intent with EPA and develop a Stormwater Pollution Prevention Plan (SWPPP). An erosion control plan has been provided showing stabilized construction entrances, inlet protection, silt fence, and designated stockpile areas.*

SV23. *Provide Stormwater Pollution Prevention Plan (SWPPP) (§6.6.013(1)).*

SV24. *Provide estimate of total area expected to be cleared or disturbed by excavation, grading, or other construction activities (6.6.013(3)(c)).*

SV25. *Provide blank record-keeping forms (6.6.013.(3)(l)).*

SV26. *Provide description of construction and waste materials expected to be stored on-site (§6.6.013(3)(n)).*

SV27. *Provide description of provisions for phasing the project (§6.6.013(3)(o)).*

SV28. *Provide more substantial perimeter controls such as compost filter sock, given the presence of wetland resource areas.*

SV29. *Provide additional silt sacks at Catch Basins within Concord Road near to the Site.*

SV30. *Provide measures to prevent sedimentation into open excavations for subsurface infiltration systems during construction.*

SV31. *Provide inspection and maintenance requirements for temporary erosion controls.*

**OPERATIONS/MAINTENANCE PLAN (STANDARD NUMBER 9):** *A Long-Term Operation and Maintenance Plan shall be developed and implemented to ensure that stormwater management systems function as designed. A Stormwater Operation and Maintenance Manual was provided with the Stormwater Management Report.*

SV32. *Provide signature of owner on the Maintenance Agreement (6.6.012(2)(c)(vi)).*

SV33. *Include street sweeping on inspection form.*

SV34. *The Operations and Maintenance Plan shall be recorded with the Middlesex Northern Registry of Deeds prior to the issuance of a Certificate of Compliance with the Board of Health (BOH 6.6.012(2)(b)).*

SV35. *Indicate means of conveying operation and maintenance responsibility to new owners in the event of a change of ownership.*

**ILLICIT DISCHARGES (STANDARD NUMBER 10):** *All illicit discharges to the stormwater management system are prohibited. A signed Illicit Discharge Compliance Statement was provided with the submission – **complies with standard.***

## WETLAND RESOURCE AREAS

Wetland resources areas, delineated by Lucas Environmental, LLC, are depicted on the Site Plans and include vegetated wetlands, perennial streams, land subject to flooding, buffer zones and riverfront area.

A stream crossing is proposed which will cross over a stream in the southwestern portion of the property and its associated wetlands. Proposed work within the 200-foot Riverfront area and 100-foot wetland buffer includes portions of the parking lot, driveways, and retaining wall.

Erosion controls are shown on the plans to contain sedimentation for the work area.

Stormwater management improvements are proposed to mitigate peak rate of runoff, and provide water quality treatments of stormwater runoff from the site (see above).

*W1. Include a note prohibiting stockpiles of material within the buffer zone of wetlands.*

If we can be of any further assistance regarding this matter, please contact us at our office.

Very truly yours,  
BETA Group, Inc.



Stephen Borgatti, PE, MENG  
Project Engineer



Philip F Paradis, Jr., PE,  
Associate