

May 15, 2024

Ms. Breeka Lí Goodlander, Agent
Town of Franklin Conservation Commission
355 East Central Street
Franklin, MA 02038

**Re: Tri-County Regional Vocational Technical High School
147 Pond Street
MassDEP File No. 159-1291
Notice of Intent Peer Review**

Dear Ms. Goodlander:

BETA Group, Inc. (BETA) has reviewed documents and plans for the ***Tri-County High School development***, located at ***147 Pond Street*** in Franklin, Massachusetts. This letter is provided to present BETA's findings, comments and recommendations.

BASIS OF REVIEW

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

- Notice of Intent entitled ***Tri-County Regional Vocational Technical High School – Notice of Intent***; prepared Samiotes Consultants, Inc., dated March 2024. Attachments include:
 - Project Narrative;
 - WPA form 3;
 - Local Filling Fees and Forms;
 - Stormwater Checklist;
 - Certified Abutters List & Notification to Abutters;
 - WPA Form 4A – ANRAD;
 - Wetland Delineation Report;
 - Variance Requests; and
 - Various Figures (FEMA, NHESP and Zoning Maps)
- Stormwater Report entitled ***Stormwater Management Report***, dated March 2024, prepared by Samiotes Consultants, Inc.; stamped and signed by Stephen J. Powers MA P.E. No. 45896.
- Plans (6 Sheets) entitled ***Topographic Plan of Land***, dated May 3, 2023, prepared by Samiotes Consultants Inc.; stamped and signed by Daniel F. Fleming P.L.S. No.55476.
- Plans (56 Sheets) entitled ***Tri-County Regional Vocational Technical High School Notice of Intent***, dated March 18, 2024, prepared by Drummey Rosane Anderson, Inc.; stamped and signed by Stephen J. Powers MA P.E. No. 45896.

Review by BETA included the above items along with the following, as applicable:

- ***Massachusetts Wetlands Protection Act 310 CMR 10.00*** effective October 24, 2014
- ***Massachusetts Stormwater Handbook*** effective January 2, 2008 by MassDEP
- ***Stormwater Management Chapter 153 From the Code of the Town of Franklin***, Adopted May 2, 2007

- **Subdivision Regulations Chapter 300 From the Code of the Town of Franklin**, current through March 8, 2021
- **Wetlands Protection Chapter 181 From the Code of the Town of Franklin**, dated August 20, 1997
- **Town of Franklin Best Development Practices Guidebook**, dated September 2016

SITE AND PROJECT DESCRIPTION

The Site is a 59.96-acre parcel identified by the Town of Franklin Assessor's Office as Assessor's Map 259 Lot 4 located along the eastern side of Pond Street. The Site is bounded to the north and east by residential homes, to the west by Hilltop Road and residential homes, and to the south by commercial businesses and residential homes. The Site is currently improved by a school identified as Tri-County Regional Vocational Technical High School, paved driveways, paved parking lots, a solar array, various sports fields, and lawn areas. The remainder of the Site consists of mixed hardwood and softwoods upland vegetation, including but not limited to Eastern white pine (*Pinus strobus*), red maple (*Acer rubrum*), red oak (*Quercus rubra*), and black cherry (*Prunus serotina*). Wetland and stream complexes are present within portions of these vegetated areas. Topographic relief at the Site generally follows a west-to-east orientation.

Resource Areas Subject to Protection under the Massachusetts Wetlands Protection Act (M.G.L. ch.131 s.40) and its implementing regulations at 310 CMR 10.00 (collectively "the Act"), as well as the Town of Franklin Wetlands Protection Bylaw (Chapter 181) and its associated regulations (collectively "the Bylaw") are present at the Site and include:

- Inland Bank (to intermittent stream);
- Bordering Vegetated Wetland (BVW);
- Land Under Water (LUW); and
- Isolated Vegetated Wetland (IVW).

The boundaries of some onsite Resource Areas were previously confirmed by an Order of Resource Area Delineation (ORAD) issued under MassDEP File No. 159-1277 on March 22, 2024. Previously confirmed boundaries are as follows:

- BVW A1 to A30;
- BVW B1 to B40;
- BVW C1, C1-1R, C2R, & C3 to C12;
- BVW F1 to F25;
- IVW SW1 to SW6, SW100 to SW106, & BA1 to BA9; and
- IVW 200 to 219.

The ORAD also determined that various survey-located IVWs observed under the solar panels at the eastern portion of the Site are not jurisdictional under the Act or the Bylaw. Resource Areas not approved under the ORAD that are shown on the existing conditions plan include a BVW identified by flags E1 to E9, which is located east of the Site and projects Buffer Zone onto the Site.

The Site is not located within any Surface Water Protection Areas (Zone A, B, or C), or Wellhead Protection Areas (Zone I, Zone II, or Interim). There are no Outstanding Resource Waters (ORWs) or Areas of Critical Environmental Concern (ACEC) present, and the most recent Natural Heritage and Endangered Species Program (NHESP) mapping does not depict any Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife at the Site. There are no NHESP-mapped Certified or Potential Vernal Pools located within 100 feet of the Site.

Natural Resource Conservation Service (NRCS) soil maps indicate the presence various soil groups at the Site including Montauk fine sandy loam with a Hydrologic Soil Group (HSG) rating of C, Charlton-Hollis-Rock outcrop complex with a HSG rating of A, Hollis-Rock outcrop-Charlton complex with a HSG rating of D, and Urban land with no HSG rating.

Proposed work is associated with the demolition of the existing high school building and construction of a new school building. The existing building is located outside of any jurisdictional areas; however, portions of the associated, existing paved and landscaped areas are within Buffer Zone. Work within state and local jurisdiction, including the proposed high school building, includes the following activities (collectively referred to as “the Project”):

- Demolition of paved driveways, walkways, and parking areas;
- Removal of the existing solar field and associated electrical lines;
- Construction of the new 156,000 sf school building;
- Installation of new paved roadways and parking areas;
- Installation of lighting and utilities;
- Installation of stormwater best management practices (BMPs);
- Installation of erosion controls; and
- Landscaping and grading.

The Project also proposes to fill two (2) locally protected IVWs and impact the 0-25-foot No Disturb Zone and the 25-50-foot No Build Zone.

ADMINISTRATIVE AND PLAN COMMENTS

The plan set (as identified above) is missing information and requires additional information for clarity.

Table 1. NOI Plan

NOI Plan Requirements	Yes	No
Scale of 40’=1” or larger	✓	
North Arrow (with reference)		✓ (See comment A2)
Topographic contours (2’ intervals)	✓	
Existing Conditions Topography (with source and date of survey)		✓ (See comment A3)
Proposed Topography	✓	
Existing and Proposed Vegetation	✓	
Existing Structures and Improvements	✓	
Resource Areas and Buffer Zones labeled	✓	
Location of Erosion Controls	✓	
Details of Proposed Structures	✓	
Construction Sequence and Schedule		✓ (See comment W12a)
Registered PLS Stamp (Existing Condition Plans Only)	✓	
Assessors’ Reference	✓	
Abutting Property Assessors’ Reference	✓	
Survey Benchmark	✓	
Accurate Plan Scale	✓	

PLAN AND GENERAL COMMENTS

- A1. The Massachusetts Department of Environmental Protection (MassDEP) issued a DEP file number with no technical comments.
- A2. The north arrow reference should be provided on the plans per Bylaw Regulation Section 7.18.1.3.
- A3. Although the existing conditions topography is sourced and a date of survey is provided on the existing conditions plan, a note with this information should also be included on the NOI plans.
- A4. The plans indicate that property lines are sourced from MassGIS and do not constitute a formal boundary survey. BETA defers to the Commission on whether this is suitable for the purposes of this NOI filing; however, it appears to be appropriate given that a conventional topographic survey was conducted under the direction of a Professional Land Surveyor.
- A5. The Applicant's representative should provide their signature in Section F of the WPA Form 3. In addition, Section C1 should be completed to confirm the absence of NHESP Estimated Habitat of Rare Wildlife.
- A6. The abutter information provided in Appendix 1 appears to be associated with the previously submitted Abbreviated Notice of Resource Area Delineation (ANRAD). The Applicant should provide proof of notification to abutters associated with this NOI filing that meets the abutter notification requirements of 310 CMR 10.05(4)(a).

WETLAND RESOURCE AREAS AND REGULATORY REVIEW

BETA conducted a regulatory review of the submitted revised documents and plans, focusing on compliance with Resource Area definitions and Performance Standards set forth in the Act. BETA's Engineers conducted a Site visit as part of the stormwater management review; however, wetland boundaries were not reassessed due to an ORAD being in effect.

The Applicant has provided an NOI filing that generally describes the Project and characterizes the proposed impacts to Buffer Zone and IVW. However, the NOI is missing detailed information pertaining to filling of onsite IVWs and how impacts to locally protected Resource Areas (IVWs and Buffer Zones) have been avoided, minimized, and mitigated. Specifically, detailed wetland replication plans have not been provided. Construction phasing and sequencing plans should be submitted to demonstrate that the depicted locations of erosion and sediment controls, as proposed, will be effective in preventing additional Resource Area impacts. A Variance request should also be submitted that explicitly identifies the sections of the Bylaw Regulations from which a Variance is being sought, and the associated Alternatives Analysis requires revisions to meet the requirements of the Bylaw Regulations and demonstrate compliance with avoidance/minimization/mitigation sequencing.

At this time, the Applicant has not provided sufficient information to describe the Site, the work, or the effects of the work on the interests of the Act.

RESOURCE AREA BOUNDARY COMMENTS

- W1. As noted during the ANRAD process, intermittent streams are present interior to the A-Series, B-Series, D-Series, and F-Series wetlands that have not been delineated. StreamStats and USGS topographic maps do not depict any of the stream channels observed interior to the previously mentioned BVW's; therefore, these streams are presumed to be intermittent with no associated Riverfront Area.

- W2. The G-Series IVW was identified as a Potential Vernal Pool through the issuance of the ORAD, which notes that a Vernal Pool assessment should be conducted prior to the end of construction associated with this Project and certified if appropriate. Given the distance between the limits of work and the boundary of the Potential Vernal Pool, BETA defers to the Commission on whether the Applicant should complete this study as part of the Project.
- W3. The BA-Series IVW was identified as a Potential Vernal Pool through the issuance of the ORAD, which notes that a Vernal Pool assessment should be conducted prior to the end of construction associated with this Project and certified if appropriate. Due to the proximity of this Potential Vernal Pool to the Project limits, BETA recommends that the Conservation Commission include a Special Condition setting forth a timeline for the assessment and certification (if applicable) of this Potential Vernal Pool before and/or during construction.
- W4. The low-lying ponded areas under the solar array were determined to be non-jurisdictional under the Act and the Bylaw as part of the ORAD process. Therefore, all jurisdictional Buffer Zones projected from these areas should be removed from the plans.

CONSTRUCTION COMMENTS

- W5. The Project as currently depicted will disturb more than one (1) acre of land; therefore, a Notice of Intent (NOI) must be submitted to the Environmental Protection Agency (EPA) under the Construction General Permit (CGP) and a Stormwater Pollution Prevention Plan (SWPPP) must be prepared.
- W6. The Civil Grading plan sheets (sheets C302 through C305) depict areas where grading is proposed outside of the limit of work and/or interior to the proposed tree line. The limit of grading should be confined to the limit of work and the grading plan sheets should be revised accordingly.
- W7. Proposed material storage and laydown areas should be depicted on the Project plans and located outside of jurisdictional areas to the extent feasible.
- W8. BETA offers the following comments on the proposed erosion and sediment controls per sheets C100 to C105:
- a. Erosion and sediment controls should be depicted on all sheets to demonstrate Project constructability.
 - b. Erosion / sediment controls as shown do not always correspond with the limit of ground disturbing work (i.e., along the secondary access road on sheet C100). The location of controls may be variable depending on the phasing of the Project. BETA recommends that the Applicant consider providing erosion and sediment control plans for different phases of the Project, inclusive of anticipated stabilization goals on a phase-by-phase basis.
 - c. Sediment controls are shown outside of the limit of work and interior to the B-Series wetland (sheet C103). Revise the limit of sediment controls in this location.
 - d. Sediment controls include use of silt fence and straw wattles. Silt fence is not a permitted erosion control measure in the Town of Franklin (Pg. 13 of Town of Franklin Best Development Practices Guidebook). The Applicant should coordinate with the Conservation Commission to determine the appropriate control measures for the Site. Twelve (12)-inch diameter compost filter tubes may be an appropriate option commensurate with the scope of the Project.

- W9. Clearly label all IVW impacts (both permanent and temporary) on the Project plans. It is recommended that this information be included on the Grading and Drainage plans.

MITIGATION COMMENTS

- W10. Based on the NOI plans, it appears that a portion of one of the onsite IVWs (SW1-6 /SW100-SW106 /BA1-BA9) will be filled. In addition, it appears that this IVW is proposed to be extended outside of its delineated limits as part of wetland replication efforts. The Landscape Plan (Sheet L404) indicates that this IVW will be seeded with a native wetland seed mix; however, there is no additional information regarding the proposed wetland replication. BETA offers the following comments on the proposed wetland replication:

- a. If wetland replication is proposed along the IVW and at the eastern extent of the Site, a replication plan and protocol describing proposed grading, target wetland complex type, proposed soil amendments, and proposed plantings must be provided to the Commission for review and approval.
- b. It is understood that wetland replication will consist of expanding/constructing IVWs in order to mimic the lost functions and values of the impacted IVWs. Given the isolated nature of these Resource Areas, it is recommended that signage prohibiting disturbances (including but not limited to litter and snow storage). In addition, the Commission could consider including a Special Condition in perpetuity that prohibits the use of these wetland replication areas as stormwater basins.
- c. It is assumed that the online of the eastern wetland replication area correlates with the proposed edge of wetland and does not include the requisite upland grading required to tie back into existing grade. The Applicant should confirm if the limits of work are sufficient in this area to accommodate grading above the replicated wetland boundary.

- W11. BETA offers the following comments on the Landscape Plans:

- a. Seed mix specifications for the conservation seed mix, the native wetland seed mix, and the fescue seed mix for lawn area should be provided to the Commission for review and approval approval.
- b. Clarify if the eastern property line upgradient of the E-Series wetland is proposed to be lawn area since no seed mix was specified. Consideration should be given to vegetating this area with native, herbaceous species to be mowed only once per year during late fall. BETA recommends a Special Condition requiring this mowing schedule for all areas where native, herbaceous species are established (i.e., areas of proposed conservation seed mix).
- c. The Applicant proposes several cultivars in the planting plan. Cultivars alter the natural fruiting and flowering processes of plant species and oftentimes diminish their value to native wildlife. It is recommended that cultivars be removed from the plan where present within jurisdictional areas and replaced with true native counterparts.
- d. Although not considered an invasive species in Massachusetts, dwarf fern leaf bamboo (*Pleioblastus distichus*) is a species of running bamboo that can become highly aggressive. Considering the large quantity proposed, BETA recommends that a native ground cover species that provides value to wildlife/pollinators be used in replacement of the dwarf leaf fern bamboo.

WPA PERFORMANCE STANDARDS COMMENTS

The Project does not propose any work within Resource Areas Subject to Protection under the Act; however, the Project does propose work within Buffer Zone (a Resource Area under the Bylaw) and IVW.

BYLAW REGULATORY COMMENTS

W12. The following materials must be submitted per the submission requirements of the Bylaw Regulations:

- a. A Construction Sequence and Schedule (Section 7.15);
- b. A completed Resource Area Impact Summary Form (Section 7.1.4); and
- c. A Functions and Characteristics Statement (Section 7.10).

W13. Section 4.4.1 of the Bylaw indicates that “mitigation offsets may be required by the Commission when the applicant proposes that more than 30% of the 50–100-foot Buffer Zone Resource Area is proposed to be impervious surface”. The Applicant should provide the Commission with calculations of proposed impervious area within the 50–100-foot Buffer Zone as it compares to existing conditions to allow the Commission to determine if additional mitigation measures are warranted.

W14. Based on review of the submitted NOI materials, a Variance request does not appear to have been provided to the Commission to seek approval for work within the 0-25-foot No Disturb and 25-50-foot No Build Buffer Zones or IVWs. Although an Alternatives Analysis pursuant to a Variance request is provided, the Applicant should provide the Commission with a written request that clearly identifies the sections of the Bylaw and Regulations for which a Variance is being requested for future documentation in an Order of Conditions.

The Alternatives Analysis should also be revised to be similar in format to that which is outlined under 310 CMR 10.58(4) as required by Section 7.13 of the Bylaw Regulations. The Applicant should provide additional information to support that there are no alternatives to the proposed location, configuration, and size of the new high school building in consideration of cost, existing technology, the proposed used, and logistics. This Analysis should document how impacts have been avoided, reduced, and/or mitigated for all Areas Subject to Protection that are relevant to the Variance request. For example, the Applicant should demonstrate that clearing limits within jurisdictional areas have been reduced to the extent feasible, and outline the mitigation proposed to offset these impacts.

W15. The Applicant proposes to fill two (2) IVWs totaling in a loss of 4,906 sf (IVW 200-219 totaling 2,496 sf; and IVW SW1-6 /SW100-SW106 /BA1-BA9 totaling 2,410 sf). Under the Bylaw, both IVWs are considered Freshwater Wetlands and are therefore subject to the requirements of Section 7.14 of the Bylaw Regulations to replicate altered wetlands at a minimum 2:1 ratio. A replication area plan and procedure should be provided in accordance with the specific requirements of the Bylaw Regulations.

STORMWATER MANAGEMENT

The proposed stormwater management design consists of four subsurface stormwater systems located beneath parking and loading areas. Stormwater runoff will be conveyed to these systems via a closed drainage system consisting of catch basin to manhole connections with water quality units. Roof leaders are proposed to convey stormwater runoff from the building to the eastern subsurface system. Overflow from the two western systems is proposed to discharge to a new outfall upgradient of the “B-Series” wetlands located in the southern area of the Site. Overflow from the two eastern systems is proposed to discharge upgradient of the “A-Series” wetlands also located in the southern area of the Site.

A separate field drainage system consisting of underdrain and trench drains is proposed to collect stormwater runoff from the athletic fields. The system is proposed to connect to existing conveyance infrastructure for discharge to the existing Tri County Drive drainage system.

Additional proposed stormwater management features include a vegetated swale along the northeastern limit of work.

GENERAL

- SW1. Indicate proposed treatment of all existing catch basins, manholes, outfalls, and pipes. Per the utility plans, existing utilities are to be retained unless otherwise noted, but retaining existing catch basins will conflict with the proposed drainage systems.
- SW2. Clarify if an underdrain is proposed for the northeastern soccer fields. Underdrains are referenced on Sheet L202 but not identified for these fields on the Landscape Grading Plans.
- SW3. Identify the proposed subsurface systems as “StormTrap” systems on the plans or details for consistency with the O&M Plan.
- SW4. In coordination with the Town, evaluate if installation of additional catch basins along the southern/western side of Tri-County Drive is appropriate. Based on the existing conditions plan, there is a distance of over 1,000 ft. between a catch basin at the Old West Central St. intersection and a catch basin near the athletic fields.
- SW5. Recommend including flow arrows along all pipe spans to clarify stormwater design.
- SW6. Recommend providing additional catch basin(s) at the southern driveway to minimize stormwater runoff flowing onto the roadway. Due to the steepness of the driveway evaluate if additional measures are needed to ensure stormwater is captured.
- SW7. Review proposed drainage manholes to ensure that a sufficient angle is provided between all pipe connections. Several manholes are shown to require 4 or more pipe connections with minimal vertical and angular separation which may pose constructability issues. Revise manhole diameter as required.
- SW8. Review design of drainage pipes. Several pipes appear to have inadequate cover and insufficient depth for frame and grate/cover. Recommend providing table comparing required/provided cover for all structures to ensure constructability or including in hydraulic calculations.
- SW9. At the discretion of the Town, consider providing a grate or similar measure at the 24” headwall entrance to prevent access.
- SW10. Confirm that all roof drainage can be conveyed to the rear of the building as designed. The building plans show a complex roof with multiple elevations and distinct roof drains.

- SW11. Clarify outlet design for all subsurface systems. The hydroCAD models indicate a multi-stage outlet design with weir and orifices, but no outlet control structures or similar measures are provided for these systems. Provide detail to demonstrate how outlets will be constructed.
- SW12. Provide sizing calculations for vegetated swales.
- SW13. Provide additional contour labels, spot grades, and callouts for vegetated swales and headwalls located along the north/northeast side of the Site. Ensure that proposed grading will properly convey flow to the outlet pipes. Indicate the destination of the pipe heading southwest from the eastern headwall.
- SW14. Review design of swale proposed west of the northeastern soccer fields. Determine if stormwater flow discharging from the swale will cause erosion along the 8' slope directly downgradient of its discharge point.

STORMWATER MANAGEMENT REGULATIONS (CHAPTER 153)

The project proposes to disturb land in excess of one acre within the Town of Franklin. It will be therefore subject to the Stormwater Management Regulations. The project is also required to comply with the Town of Franklin Best Development Practices Guidebook (BDPG). Although these regulations are not under the jurisdiction of the Conservation Commission, compliance with these regulations is outlined below and throughout the following sections to ensure that all comments related to stormwater management are provided in a comprehensive review document.

- SW15. Revise the stormwater management system to meet the criteria outlined in §153-16.B. It is anticipated that the project will qualify as a redevelopment and must retain the volume of runoff equivalent to 0.8 inches multiplied by the total post-construction impervious surface area or achieve 80% TSS removal and 50% total phosphorus removal by other means. BETA defers to the Town for final determination on the extent of compliance required for the project.

SUBDIVISION REGULATIONS - STORMWATER MANAGEMENT REGULATIONS (§300-11)

Additional requirements for stormwater management are outlined in §300-11 of the Town of Franklin Subdivision Regulations. Although these regulations are not under the jurisdiction of the Conservation Commission, compliance with these regulations is outlined below and throughout the following sections to ensure that all comments related to stormwater management are provided in a comprehensive review document.

- SW16. Provide comparison of pre- and post-development runoff volume. Post-development runoff volume shall not exceed pre-development volumes from the Site (§300-11.A(3)).
- SW17. Provide hydraulic calculations to demonstrate that the drainage system is designed to accommodate a 25-year storm frequency with a design velocity between 2.5 and 10 feet per second (§300-11.B(1)). Impacts to the existing drainage systems on Tri-County Drive should also be evaluated.
- SW18. Revise proposed drainage pipe to be reinforced concrete or request waiver (§300-11.B(2.a)).

MASSDEP REPORTABLE RELEASES

The MassDEP Waste Site / Reportable Release database does not identify any reportable releases within or near the Site.

MASSDEP STORMWATER STANDARDS

The project is subject to the Wetlands Protection Act and therefore must comply with the Massachusetts Stormwater Standards as outlined by MassDEP. Compliance with these standards is outlined below:

LOW IMPACT DEVELOPMENT (LID) TECHNIQUES

Proposed LID measures include use of country drainage for portions of the Site.

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.* The project proposes to retain existing discharge locations including several outfalls located upgradient of wetland resource areas. The two outfalls upgradient of the “B-Series” wetlands discharge to a paved waterway which extends to the toe of slope. No direct discharges to wetland resource areas are proposed. A new riprap apron is proposed at FES#1 to mitigate erosion potential.

- SW19. Provide riprap apron at all existing outfalls to remain or demonstrate that existing scour protection is sufficient.
- SW20. Provide calculations for sizing of riprap aprons.
- SW21. Verify condition of existing outfalls and confirm they are in suitable condition to convey post-development flows.
- SW22. Clarify outlet design for the southern baseball field underdrain. The proposed drain linework is a few feet east of the existing outfall. BETA notes that this span of pipe is inconsistent with the Landscape Grading Plans.
- SW23. Evaluate if check dams are required along proposed vegetated swales and include riprap aprons at bottom of each swale.
- SW24. Clarify if outlet “D” from manhole B2-07-DMH-EX is to remain. This drain pipe ultimately discharges to an existing outfall, down a paved waterway, into a plunge pool located within the B-Series wetlands.

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 to mitigate increases to runoff rates with the use of subsurface infiltration and detention systems. Calculations indicate a decrease in peak discharge rate to all points of analysis.

- SW25. Provide scale on watershed plans.
- SW26. Recommend turning off linework for non-drainage utilities on the watershed plans for legibility.
- SW27. Depict soil group boundaries on watershed plans and clarify why a rating of HSGR C has been applied to the entire project area. Based on NRCS mapping, portions of the Site should be HSGR A or unrated. BETA notes that test pits have only been conducted in a portion of the Site and it is unknown if the poor soil conditions logged in the test pits represent the entire Site.
- SW28. Provide names/labels on existing and proposed routing diagram POA nodes to clarify model.
- SW29. Depict limit of tree clearing on the post-development watershed plan.
- SW30. Provide labels for the northeastern and southeastern watershed areas on the pre-development watershed plan.

SW31. Provide table comparing pre- and post-development runoff volumes for each watershed area to evaluate flooding impacts to wetland resource areas and downgradient properties.

SW32. Review existing/proposed watershed narrative in the stormwater report:

- a. POA-3 is identified as the wetlands on the southern portion of the Site, presumed to refer to the "C-Series" wetlands. However, the watersheds stated to drain to this POA appear to actually drain to one of several closed drainage systems at Try County Drive. Clarify how these watersheds will discharge to the wetlands. Provide additional POAs as necessary to represent the existing closed drainage systems.
- b. POA-4, POA-5, and "POA" are each identified in the narrative as the wetlands just south of the solar fields of the Site. This appears to be a typo, as EWS-9, 10, and 12 respectively, each drain to a different location. Revise the description of each of these POAs.

SW33. Separate EWS-12/PWS-10 into several subcatchments with appropriate points of analysis. This watershed drains in several different directions and should not be considered a single subcatchment. BETA recommends generally dividing the watershed as follows:

- a. The northern and western portions of the watershed, which will drain offsite and will not be affected by the development.
- b. The southern portion that drains to the 30" RCP drain line west of the Site, towards Hilltop Road. Provide POA at this location to confirm that the peak flow to the system will not exceed its capacity. The "A-Series" and "B-Series" wetlands also appear to drain to this location.
- c. The southern portion that drains to the 12" RCP drain line south of the Site, towards Old West Central Street. Include stormwater runoff to catch basins and to the headwall inlet. Provide POA at this location to confirm that the peak flow to the system will not exceed its capacity.
- d. The southeastern portion that drains to the nearby "D-Series" wetlands. Provide POA at the wetlands to measure the impact of the new driveway on the wetland resource area.
- e. The northeastern portion that drains east towards the "E-Series" wetlands. This subcatchment should likely be combined with EWS-10.
- f. The easternmost portion that drains to the southeast to an unknown destination. Evaluate offsite topography to determine ultimate discharge point and provide new POA as necessary.
- g. Additionally, smaller portions of this watershed may drain to POA-1, 4, and 5 and should be included in the appropriate subcatchments.

SW34. Review routing for the following watershed/nodes:

- a. EWS-4. The existing conditions plan shows that this area is collected by a closed drainage system and conveyed to a drain manhole near the EWS 3 / 4 boundary. The DMH is identified as not found with no surveyed inverts, but shows one outlet pipe towards POA-2 and one outlet pipe towards POA-1. Provide information on which of these points of analysis the system discharges to.
- b. BMP-1. System BMP-1 is designed to overflow to BMP-2; therefore, BMP-1 should be routed to BMP-2 in the hydroCAD model.

- c. BMP-3. System BMP-3 is designed to overflow to BMP-4; therefore, BMP-3 should be routed to BMP-4 in the hydroCAD model.
 - d. PWS-6. This area is graded to drain to a pair of catch basins which discharge to BMP-4; therefore, PWS-6 should be routed to BMP-4. Recommend combining PWS-4, PWS-6, and PWS-9 into one subcatchment for simplicity.
- SW35. Revise boundaries of PWS-2 and PWS-10 to account for the wetland and replication areas. These areas are low points to which stormwater runoff will be routed. Model these areas as “impervious water surface” to account for a permanent pool.
- SW36. Review the following subcatchment boundaries:
- a. Northeastern portion of EWS-1. It appears that this area will be collected by a drainage ditch which discharges south to EWS-9.
 - b. PWS-1 and PWS-3. The boundary between these two watersheds does not appear to represent the proposed high point based on the grading plans.
 - c. Building portion of PWS-2. Based on the roof leader design, the roof area will be conveyed to BMP-1, rather than BMP-2.
 - d. Southern portion of PWS-2. Based on the drainage system design, the majority of this subcatchment will be collected by catch basins and conveyed west, rather than to BMP-2.
 - e. Boundary between PWS-4/9 and PSW-5. The proposed football field is designed with an underdrain which conveys stormwater to BMP-4. The entire field and all areas draining to it should be included in either PWS-4 or PWS-9.
- SW37. Revise limits of watersheds to include all areas, including offsite areas, that will drain to the proposed SCMs and closed drainage systems. Offsite areas to the north will drain to PWS-1 and PWS-3 and thus must be included in the appropriate BMP system sizing. Refer to previous comments relating to swales and headwalls located along the northern portions of the Site; the proper design of these conveyance systems will determine if upgradient areas drain to the BMPs or bypass them.
- SW38. Review HydroCAD model for the following subcatchments:
- a. EWS-1: Confirm that the time of concentration represents the flowpath from the most hydrologically remote point in the subcatchment. The easternmost portion of the subcatchment may be more appropriate. Include flow through pipes in the calculation.
 - b. EWS-7: Clarify the location of the 10,693 Sq. Ft. of area attributed to “paved parking.” Confirm that the overall area attributed to this subcatchment is consistent between the model and the watershed plans. Revise cover type for sheet flow to be “Woods.”
 - c. EWS-9 and EWS-10: Clarify the location of the areas attributed to “paved parking.” If these areas are intended to represent the solar array, then the cover type should be revised to reflect the final land cover type proposed below the panels per MassDEP Wetland Program Policy 17-1.
 - d. PWS-7: Review area modeled as “Woods.” The area depicted on the plans to remain wooded appears to be smaller than that used in the 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 the presence of Charlton-Hollis-Rock outcrop complex rated in Hydrologic Soil Group Rating (HSGR) A (high infiltration potential), Montauk Fine Sandy Loam and Paxton Fine Sandy Loam, rated in HSGR C (low infiltration potential), Hollis-Rock outcrop complex, rated in HSGR D (very low infiltration potential), and Urban Land with no assigned HSGR.

Test pits conducted at the Site indicate that subsurface soils are generally Sand, Sandy Loam, or Loamy Sand with shallow bedrock/ledge and areas of organics. Test pits identified shallow groundwater and bedrock throughout the Site. Two geotechnical reports have been prepared by O'Reilly, Talbot, & Okun (OTO) discussing the findings.

Subsurface infiltration systems have been designed with a Rawls Rate of 0.27 in/hr. reflecting HSGR C soils. Hydraulic conductivity tests were conducted by OTO at TP-101, 103, and 105 identifying a hydraulic conductivity "K" value of less than 0.1 ft/day (0.05 in/hr)

Groundwater recharge is proposed via two new subsurface infiltration systems. The project is expected to provide a recharge volume in excess of what is required.

Calculations have been provided indicating all BMPs will drawdown within 72 hours.

SW39. Add test pit locations to the Stormwater Management Plans. Recommend providing critical information to plans such as ESHGW elevations and refusal, as applicable.

SW40. The March 15, 2024 report by OTO is identified as a draft report. Provide final report.

SW41. Justify the use of a 0.27 in/hr. infiltration rate for the subsurface infiltration systems. Hydraulic conductivity tests indicate a much lower rate of 0.05 in/hr is reflective of the Site. BETA notes that the in-situ rate is below the minimum allowable infiltration rate of 0.17 in/hr and the geotechnical reports note that soils are not favorable for infiltration.

SW42. Test pits in the eastern portion of the Site were not completed to the proposed system bottom elevation for Detention System-1 and ledge was encountered in some test pits in proximity to the proposed system. Additional subsurface explorations should be conducted to ensure the system can be constructed.

SW43. Test pits in the area of Detention System-1 identified significant areas of organics. Discuss how these organics will be accounted for in the design and during construction.

SW44. Additional subsurface explorations should be conducted within the footprints of Infiltration System-3 and -4. Though several test pits have been completed in the general vicinity of these BMPs, none are located within the footprints and ledge was encountered in TP-103 and TP-104.

SW45. Detention Systems-1 and -2 are located below the groundwater elevation and the design calls for a watertight application to be provided by others. Options for the watertight application should be explored during the design process and requirements/specifications should be added to the plans to ensure the system will function as designed.

SW46. Revise Detention System-2 to account for bedrock encountered in test pit TP-110. Bedrock was encountered at elevation 376.5', above the system bottom elevation of 368.25. Also refer to comments related to groundwater.

SW47. Not all impervious area is directed to infiltration practices, provide a capture adjustment calculation (see MassDEP Handbook Vol 3, Ch 1, page 27-29).

SW48. The proposed grading in the eastern portion of the Site as well as the construction of the building and Detention System-1 and -2 will be below existing groundwater. It is anticipated there may be long-term seepage along the easterly slopes. Evaluate groundwater impacts to the slope, flow onto the site, downstream stormwater management systems, and any adjacent residences or wetlands.

SW49. Review model for the following systems:

- a. Detention System-1 & -2: The bottom and invert elevations are inconsistent between the model and the plans for both systems. Additionally, these systems have been designated as detention systems, but the only “invert out” elevations listed on the plans are above the respective system bottom elevations.
- b. Infiltration System-3 & -4: The bottom and invert elevations are inconsistent between the model and the plans for both systems.

SW50. Provide required mounding analysis where infiltration BMPs have less than 4 feet of separation to estimated seasonal high groundwater.

SW51. Revise drawdown calculations to use an exfiltration rate consistent with the Geotechnical Report.

TOTAL SUSPENDED SOLIDS (STANDARD NUMBER 4): *For new development, stormwater management systems must be designed to remove 80% of the annual load of Total Suspended Solids (TSS).*

The project includes the following treatment trains:

Treatment Train	SCM 1	SCM 2	Infiltration BMP	TSS Removal %
A	Deep Sump Catch Basin	Water Quality Unit	Subsurface Detention System*	>80%
B	Deep Sump Catch Basin	Water Quality Unit	Subsurface Infiltration System*	>80%
C	None	None	Athletic Field Underdrain	0%

*Portions of the Site will be treated by multiple subsurface systems in series.

The project narrative indicates that at least 80% TSS removal will be provided for treated impervious areas. The proposed infiltration BMPs have been sized to treat the required 1-inch water quality volume for their respective catchment areas. Significant areas of the Site will remain untreated.

Portions of the Site (PWS-5, PWS-7, PWS-8, PWS-10) will not receive any formal treatment except for catch basins.

Per Standard 5, the project may be required to provide at least 44% TSS removal as pretreatment for infiltration BMPs. Pretreatment is provided via deep-sump catch basins and water quality units.

A Long Term Pollution Prevention Plan has not been provided.

SW52. Provide required TSS removal for all impervious areas within the limit of work.

SW53. Review TSS removal calculation for PR-Watershed-5; the calculation lists catch basins, water quality units, and subsurface infiltration systems which are not proposed for this watershed.

- SW54. Revise TSS removal calculations to account for subsurface structures where no infiltration is proposed or is feasible.
- SW55. Provide TSS removal calculations for PWS-7, PWS-8, and PWS-10.
- SW56. Remove pretreatment devices from TSS worksheet for infiltration systems; the 80% TSS removal is inclusive of required pretreatment.
- SW57. Provide third party TSS removal rate documentation and sizing calculations for proprietary water quality unit. If manufacturer/model are to be determined in the future the minimum criteria for each unit should be specified.
- SW58. Provide calculations for required/provided water quality volume and/or water quality flow rate.
- SW59. Provide supporting information for the storage volumes provided, such as a hydroCAD printout of stage/storage.
- SW60. Provide Long-Term Pollution Prevention Plan.

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 includes a large parking lot. Per Standard 5, Parking lots with high-intensity uses (>1,000 vehicle trips per day) are considered LUHPPLs. The applicant has not provided trip generation data but given the large number of parking spaces (>500 spaces) it is possible it may exceed 1,000 vehicle trips per day and would be subject to this standard.

The project meets the additional treatment requirements for LUHPPLs (see standard 4) for areas within the treatment area. Subsurface structures are considered recommended BMPs for use in LUHPPLs. Source control and pollution prevention measures have not been provided.

SW61. Evaluate trip generation and provide the following, if necessary:

- Revise narrative to indicate the Site is a LUHPPL.
- Provide oil grit separator, sand filter, filtering bioretention area, or equivalent for treatment trains originating in any LUHPPL area. If the water quality units are intended to satisfy this requirement, provide documentation from manufacturer identifying their suitability for LUHPPLs.
- Provide Source Control and Pollution Prevention Plan.
- Indicate means of emergency shut-off or containment prior to discharge to an infiltration BMP.

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 narrative states the project qualifies as a redevelopment but that all standards will be met.

SW62. Based upon provided comments, evaluate if all standards can be met.

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, a Notice of Intent will be required to file with EPA including development of a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP was not provided with the submission. Erosion control measures are depicted on the plans (C100 to C105) including compost filter sock, stabilized construction entrance, temporary seeding, erosion control blanket, and inlet protection. A basic narrative on proposed erosion controls is provided as an attachment to the Stormwater Report and in the Notice of Intent. The narrative identifies measures for dust control, temporary sediment basins, diversion swales, check dams, dewatering practices, street sweeping, and stabilization requirements.*

SW63. The required EPA SWPPP will also need to be filed with the Department of Public Works as part of a Soil Erosion and Sediment Control Plan.

SW64. Provide inspection and maintenance requirements for construction-period erosion controls.

SW65. Provide detail for compost filter sock and clarify if silt fence is proposed per the “silt fence with straw wattle” detail. BETA notes that use of silt fence is typically prohibited in the Town of Franklin.

SW66. Provide detail for proposed erosion control blanket.

SW67. Clarify if all construction traffic will be limited to the southerly entrance. Stabilized construction entrances should be provided at all access point to the site from Tri County Drive.

SW68. In coordination with DPW, provide inlet protection at downgradient catch basins within Tri County Drive. Also, include inlet protection for proposed catch basins within the Site.

SW69. Clarify proposed location of construction staging area. The O&M Plan indicates it will be established “on the existing woodlands.”

SW70. Provide measures to protect open excavations for infiltration structures during construction.

SW71. Provide a general construction sequence including phasing of work on the plan.

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.*

SW72. Revise the O&M to include the following information, as required by the Handbook:

- Indicate stormwater management system(s) owners.
- The party or parties responsible for operation and maintenance, including how future property owners will be notified of the presence of the stormwater management system and the requirement for proper operation and maintenance.
- Provide map, drawn to scale, that shows the location of all stormwater BMPs in each treatment train and snow storage areas.
- Provide description of public safety features.
- Provide approximate annual maintenance budget.
- Provide signature of owner on the O&M Plan.

- SW73. Include operation and maintenance requirements for vegetated swales and headwalls add to maintenance checklist.
- SW74. Revise O&M requirements for infiltration and detentions systems to match manufacturer documentation, which suggests quarterly inspections for the first 12 months.
- SW75. Clarify how subsurface system inspection and maintenance is performed. The manufacturer documentation references a manhole that will be visually inspected, but no manholes are proposed in the system footprint. Depict any inspection ports or manholes in plan view.
- SW76. Clarify if isolator rows are proposed. A manual from ADS Stormtech is included in the O&M Plan but no such system is identified on the plans.
- SW77. Provide manufacturer documentation for inspection and maintenance of water quality units.
- SW78. Revise O&M Plan to remove information that does not pertain to the project e.g. "level spreaders" and "police equipment."

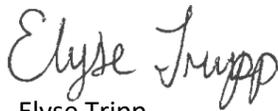
ILLICIT DISCHARGES (STANDARD NUMBER 10): *All illicit discharges to the stormwater management system are prohibited. A signed Illicit Discharge Compliance Statement was provided with the submission.*

REVIEW SUMMARY

Based on our review of the NOI submittal and Project plans, the Applicant has not submitted sufficient information to describe the Site, the work, and the effects of the work on the interests of the Act. In addition, the Project does not presently comply with the Massachusetts Stormwater Management Regulations.

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

Very truly yours,
BETA Group, Inc.



Elyse Tripp
Scientist



Jonathan Niro
Senior Project Scientist



Stephen Borgatti, PE, MENG
Senior Project Engineer



Matthew J. Crowley, PE
Senior Project Manager

cc: Amy Love, Town Planner
Bryan Taberner, AICP, Director of Planning & Community Development
Matt Crowley, P.E., BETA