

Town of Franklin

355 East Central Street
Franklin, Massachusetts 02038-1352



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DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

DATE: June 1, 2023
TO: Franklin Planning Board
FROM: Department of Planning and Community Development
RE: Maplegate Solar North
Site Plan

General:

1. The site is accessed through Bellingham at 160 Maple St, and located in the Industrial Zoning District.
2. The Planning Board approved an 81-P ANR plan on January 9, 2023, combining the lots indicated on the application, into one single lot.
3. The proposed project includes the construction solar panels, along with drainage.
4. The Applicant has filed a NOI with the Conservation Commission.

Comments:

1. Attached is BETA's review letter.
2. No new information has been received for this meeting.



May 25, 2023

Mr. Gregory Rondeau, Chairman
Franklin Planning Board
355 East Central Street
Franklin, MA 02038

Re: Proposed Solar Array, Parcel 1, 160 Maple Street, Bellingham, Norfolk County, MA
Site Plan Peer Review

Dear Mr. Rondeau:

BETA Group, Inc. is pleased to continue our engineering peer review services for the proposed project entitled Proposed Solar Array, Parcel 1, 160 Maple Street, Bellingham, Norfolk County, MA in Franklin, Massachusetts. This letter is provided to outline findings, comments, and recommendations.

BASIS OF REVIEW

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

- Site Plan Review Application Package, prepared by Bohler, Inc., Bedford, NH including the following:
 - Cover letter for Site plan Application, prepared by Bohler, dated April 12,2023
 - Application for Approval of a Site Plan
 - Certificate of Ownership
 - Certified Abutters List & Map
 - Copy of Fee Check
- Plans (47 sheets) entitled: Proposed Site Plan Documents for Nextgrid Mescalbean LLC, Bellingham & Franklin, Norfolk County. MA dated April 13, 2023, prepared by Bohler, stamped by John Kucich, PE No. 41530.
- Drainage Report – for Nextgrid Mescalbean, LLC, Proposed Solar Array, Parcel 1, 160 Maple Street, Bellingham, Norfolk County, MA, dated April 13,2023, prepared by Bohler, Stamped by John Kucich, PE #41530.

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

- Site Visit
- Zoning Chapter 185 From the Code of the Town of Franklin, current through March 01, 2016
- Zoning Map of the Town of Franklin, Massachusetts, amended July 13, 2016
- Stormwater Management Chapter 153 From the Code of the Town of Franklin, Adopted May 02, 2007
- Wetlands Protection Chapter 181 From the Code of the Town of Franklin, current through August 20, 1997
- Subdivision Regulations Chapter 300 From the Code of the Town of Franklin, current through January 01, 2016
- MassDEP Wetlands Program Policy 17-1: Photovoltaic System Solar Array Review, dated September 23, 2017

INTRODUCTION

The project site is the former Maplegate Country Club which is a total lot area of 144.6± acres. Access to the site will come from the existing driveway to the golf course clubhouse from Maple Street in Bellingham. The site development associated with this proposal will be limited to Parcel 1 which is approximately 69.5± acres. The proposed development is a 5,000-kW ground mounted Photovoltaic Power System. The limit of work for this system will be approximately 44.0 acres within parcel 1. The existing site improvements within the limits of the development include a club house, paved driveway, parking areas, gravel and paved cart paths, golf greens, driving range, landscaping, resource areas, and wooded areas. The site is surrounded by wooded land to the north, wooded land and Mine Brook to the east, Route 495 to the south, and commercial businesses, a solar field, and Maple Street to the west. Drainage patterns at the site vary but generally flow from west to east across the site to Mine Brook. The site is located within the Industrial Zoning District. The land west, north and south of the parcel are all within the same Industrial District. The parcels east of Mine Brook are located within the Single-Family III zone.

The project is partially within Water Resource District (MassDEP Zone II) along the eastern border adjacent to Mine Brook. The site is not in proximity to estimated habitat of rare or endangered species but is adjacent to NHESP Potential Vernal Pools to the North and South. The project is partially within a Zone AE FEMA mapped flood zone (area of 1% chance flood) along the eastern boundary of the site with variable elevations determined by a detailed analysis of Mine Brook. NRCS soil maps indicate the soils at the site are of Montauk fine sandy loam, and Scituate fine sandy loam. Each are rated in Hydrologic Soil Group (HSG) C (low infiltration potential).

The project proposes to develop the site with approximately 44 acres of ground mounted solar modules, 2 separate equipment areas composed of inverters, cabinets and transformers, security fencing, 20' wide gravel access driveway from the existing paved driveway into the clubhouse through the entire site with access to future development at the southern end of the array.

The proposed development will reduce the overall impervious surface area on site. Proposed impervious surfaces include the concrete pads for solar equipment and gravel access driveways. Stormwater management will deal primarily with conformance with Standard 2 for peak flow rate attenuation. Stormwater management features proposed include the construction of a stormwater detention basin along the easterly edge of the development. The project as currently depicted will disturb in excess of one acre of land and is required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and file a Notice of Intent with EPA. As currently shown, the project area will be located within the limits of the buffers to the existing wetland resource areas on site. A Notice of Intent has been filed with the Franklin Conservation Commission.

FINDINGS, COMMENTS, AND RECOMMENDATIONS

GENERAL

- G1. Recommend increasing text size of callouts to improve legibility, particularly on enlarged plans.
- G2. Revise plans to include any utility poles, overhead wires, or electrical conduit to be used for interconnection, as applicable.
- G3. Provide proposed contours for red-shaded areas to be re-graded to determine accurate limits of work, especially in those areas around the flagged wetlands where it appears that the only option available to reduce the grade is to fill the wetlands.

- G4. BETA recommends that the shaded areas, which identify areas where the existing grade exceeds 15%, be eliminated from the drawings outside the limits of work to avoid confusion.
- G5. BETA recommends a condition that no earth material be removed from the Site except for unsuitable construction and demolition debris.

ZONING

The Site is located within the industrial (I) Zoning District. The proposed use is a Large-Scale Ground-Mounted Solar Energy System, which is permitted within this district following Planning Board Site Plan Review.

SCHEDULE OF LOT, AREA, FRONTAGE, YARD, AND HEIGHT REQUIREMENTS (§185 ATTACHMENT 9)

As shown on the schedule on the Zoning table on Sheet C-301 of the set, the Site meets the requirements for lot area, depth, frontage, width, yard widths, building height, and impervious area coverage.

PARKING, LOADING AND DRIVEWAY REQUIREMENTS (§185-21)

The project proposes to retain approximately 1,100 feet of an existing paved driveway which connects to Maple Street in the Town of Bellingham. Proposed 18' or 20' wide gravel driveways will connect to this existing driveway to provide access to equipment areas and the southern end of the solar array. Notes on the plan indicate that the gravel driveway will also provide access to future development to the south.

The project does not propose a residential or nonresidential building; therefore, no parking is required. BETA anticipates that there is adequate space along at turnaround areas for maintenance vehicles to temporarily park without disrupting access.

- P1. BETA defers to the Town regarding the extent of the proposed access road. BETA recommends the Applicant consult with the Town of Franklin Fire Department to determine required driveway widths and the potential need for driveways around the array perimeter.
- P2. Provide plan depicting turning moments along the access roads. Confirm that the turning radius at curves and at turnaround areas is sufficient for a Town of Franklin Fire Apparatus.
- P3. Review width of existing access road to determine if two fire trucks could drive side-by-side and pass one-another if needed. This access route is fairly long and backing up to allow a vehicle to pass may be unsafe.
- P4. The proposed access gate is located at the end of an 1100+ foot long driveway with little opportunity for turnaround; therefore, a vehicle which cannot access this gate will have difficulty backing out of the Site. BETA recommends providing a turnaround area near the gate or moving the gate to allow the use of the driveway as a hammerhead.
- P5. Coordinate with Town Fire Department to determine means of emergency access through front gate, such as a knox box.

INDUSTRIAL DISTRICT PERFORMANCE CONTROLS (§185-22)

The project is located within an Industrial District and therefore must conform to these requirements. Given the nature of the project, BETA does not anticipate vibration, odor, or flashing related impacts.

- I1. As noted at the hearing, the inverter noise levels will be approximately 65 decibels. Based upon their proximity to the adjacent industrial building, BETA recommends that the applicant review

the abatement provided by the limited vegetation remaining and if necessary provide a barrier around these units to maintain a level of 10 decibels at the property line. (See I2)

- I2. Provide data on anticipated sound levels for transformer and related equipment (§185-22.A) and an analysis to ensure that remnant sound levels at adjacent receptors are below ambient levels.

EARTH REMOVAL REGULATIONS (§185-23)

The project includes significant disturbance which may result in earth removal greater than 15 cubic yards.

- E1. Indicate approximate earth removal volume to determine compliance with this section.

FLOODPLAIN DISTRICT (§185-24)

A FEMA-mapped 100-year floodzone (Zone AE) is located along the northern and eastern limits of the Site (Approx. elevation 183' to 184'). No work is proposed within this area, and all proposed grading is well above the flood elevation.

SIDEWALKS (§185-28) AND CURBING (§185-29)

No sidewalks or curbing are proposed under this project. As a solar facility, pedestrian access to the Site is not required. The project proposes to retain the existing driveway entrance, located in the Town of Bellingham, and therefore no new curbing is provided within the area 10' from the street lot line as required per §185-29.

SITE PLAN AND DESIGN REVIEW (§185-31)

The project has been submitted for Site Plan Review and is required to conform to the requirements of this section. The submitted planset appears to be in compliance with all drawing requirements and review criteria, pending further review by the Fire Department to determine access requirements.

WATER RESOURCES DISTRICT (§185-40)

The Site is partially located within the Town of Franklin Water Resources District and a Zone II Wellhead Protection Area. Proposed work in this area includes tree clearing, grading, construction of a small section of solar panels and fencing, and construction of an infiltration basin. The project does not include any use that would be prohibited in this district. Impervious surfaces proposed within the district are limited only to the footprint of the array racking footings.

- W1. Identify safeguards which will be implemented to protect against any accidental hazardous material release from the solar panels or ancillary equipment (§185-40.E.1).

STORMWATER MANAGEMENT

The stormwater management design proposes a detention basin to capture stormwater runoff from the northeastern portion of the array. Two outfalls from this basin are proposed to convey captured stormwater runoff to the east. The remainder of the Site will generally follow pre-development flow patterns with no stormwater BMPs proposed.

STORMWATER MANAGEMENT REGULATIONS (CHAPTER 153)

The project proposes to disturb land in excess of one acre within the Town of Franklin. It is therefore subject to the Stormwater Management Regulations. The project is also required to comply with the Town of Franklin Best Development Practices Guidebook (BDPG). Compliance with these regulations is outlined

below and throughout the following sections.

- SW1. Provide test pit data in the area of the proposed basin to determine Estimated Seasonal High Groundwater levels (§153-15.A(9)).
- SW2. Indicate composition of proposed "meadow seed mix." Proposed seed mix should include native vegetation to the extent practicable (BDPG Pg 6).

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

Additional requirements for stormwater management are outlined in §300-11 of the Town of Franklin Subdivision Regulations.

- SW3. Revise proposed drainage pipe to be reinforced concrete or request waiver (§300-11.B(2.a)).

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. The project proposes two new outfalls from the detention basin. Each outfall will discharge onto a new riprap apron. The northern outfall is within the 100-foot wetland buffer zone, while the southern outfall is outside all buffer zones.

- SW4. Provide callouts for riprap aprons on the plans. Revise dimensions of riprap aprons in plan view to be consistent with the details.

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 changes to site hydrology and ground cover which will impact stormwater flow to the one analyzed design point. Stormwater runoff will be mitigated via a net decrease in impervious area as well as a detention basin BMP. Calculations indicate a decrease in peak discharge rate and runoff volume to the design point.

- SW5. Depict existing treeline to remain and proposed limits of clearing on the post-development watershed plan.
- SW6. Revise post-development hydroCAD model to utilize a cover type of ">75% grass cover" for the array area. The establishment of meadow-like conditions in this area will be hampered by shading from the panels and length of time needed for vegetation to grow.
- SW7. Revise cover type for gravel driveways to be "Gravel Surface" with CN 96. The "Gravel Roads" cover type assumes a grassed shoulder is included in the contributing area.
- SW8. Review cover type area attributed to "paved parking" for subcatchment P1a; the area used is inconsistent with the area depicted on the plans, based on the portions of the access driveway and cart paths designated to remain.
- SW9. Review cover type area attributed to "gravel" for subcatchment P1a; the area used is inconsistent with the gravel driveway depicted on the plans.
- SW10. There are no proposed changes to the site north of the pond located northeast of the proposed entrance gate and a portion of this area will flow west towards Maple Street. BETA recommends

that the drainage analysis be restricted to the area south of the northern wetlands which are impacted by the development.

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 soils at the site are of Montauk fine sandy loam, and Scituate fine sandy loam. Each are rated in Hydrologic Soil Group (HSG) C (low infiltration potential). A portion of the analysis area is mapped as Freetown Muck with HSG B/D (very low infiltration potential when saturated).

Soil testing has not been conducted at the Site. The project narrative indicate that this will be completed prior to construction.

The project proposes a net decrease in impervious area; therefore, post-development annual recharge is anticipated to be an improvement compared to existing conditions.

SW11. Based on the size of the basin and proximity to wetlands, BETA recommends that soil testing be conducted in the footprint of the basin prior to approval.

SW12. Revise detention basin detail to remove erroneous reference to Landscape Plan and to exclude aspects which do not pertain to the project, e.g. flared end, riprap pad, and HDPE inlet pipe.

SW13. Provide a minimum of 4 test pits in the area of the proposed detention basin to establish Estimated Seasonal High Groundwater.

TOTAL SUSPENDED SOLIDS (STANDARD NUMBER 4): For new development, stormwater management systems must be designed to remove 80% (90% per Town Bylaw) of the annual load of Total Suspended Solids (TSS). No stormwater BMPs have been proposed with the capability of TSS removal. As noted in the project narrative, proposed impervious areas are limited to gravel drives and existing paved roadways which will see only minimal vehicle traffic for maintenance. TSS removal will also be achieved via impervious area disconnection.

The project is required to treat the 0.8-inch water quality volume per Town Bylaws. No infiltration or treatment BMPs are proposed to meet this requirement.

SW14. For a redevelopment Site, meet one of the following criteria (§153-16.B(2))

- a. Retain the volume of runoff equivalent to, or greater than, 0.8 inch multiplied by the total post-construction impervious surface area on the Site; and/or
- b. Remove 80% of the average annual post-construction load of TSS and 50% of the average annual load of total phosphorus.

SW15. Provide means of sediment control, such as a swale or berm, in areas where the proposed gravel road or paved driveway is in close proximity to wetlands (e.g. WF #285-#292, WF #181 - #191, #M Series, and #N Series).

SW16. Unless required for access, consider removing existing cart paths within the western portion of the property to mitigate impacts to water quality.

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 not considered a LUHPPL – not applicable.

CRITICAL AREAS (STANDARD NUMBER 6): Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas. The project includes stormwater discharges

to a Zone II Wellhead protection area located along the eastern perimeter of the Site which is a critical area. In addition, the WF #186 – WF #203 wetlands include a vernal pool which is considered a critical area. Detention Basins are not considered recommended BMPs for use in these critical areas. At least 44% pretreatment is required before discharging to an infiltration BMP and the project is required to treat the 1-inch water quality volume (Refer to Standard 4 above). A spill presentation and response plan has been included in the submission.

SW17. Based upon the existing grades and spot shots in the existing paved access driveway adjacent to the vernal pool, it appears that the runoff from this pavement will flow south away from the pond. BETA recommends that additional spot shots along the northerly edge of the pavement adjacent to the pond be conducted to confirm this runoff pattern and if necessary proposed revisions to the driveway to ensure that untreated runoff from the pavement does not flow directly into the pond.

REDEVELOPMENT (STANDARD NUMBER 7): Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. The project is considered a redevelopment under the definition of "Development, rehabilitation, expansion, and phased projects on previously developed sites, provided the redevelopment results in no net increase in impervious area." Existing cart paths and driveways will be removed to result in a net decrease in impervious area. As such, the project need only meet certain standards to the maximum extent practicable.

SW18. BETA recommends the Applicant complete the redevelopment checklist found in Volume 3 of the MA Stormwater Handbook to document which standards are being met only to the maximum extent practicable.

SW19. Show that portion of the existing access driveway that is to remain that will qualify for an LID Site Design Credit based upon the flow length to the receiving water.

SW20. BETA recommends that the applicant review the entrance driveway pavement area which is to remain and determine if some measure of treatment is possible to meet the definition of maximum extent possible.

SW21. There are areas outside the limits of work where existing cart paths and gravel access roadways and parking areas will be abandoned in place. In certain areas these surfaces will be cutoff at both end of the area. BETA recommends that the applicant review these areas which are directly adjacent to the limit of work where these impervious surfaces could easily be removed and loamed and seeded.

SW22. Provide calculations using performance curves to indicate the approximate TSS removal that will be provided by impervious area disconnection.

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). Erosion control measures are depicted on the plans include compost sock, silt fence, hay bales, inlet protection, stabilized construction entrance, dust control, erosion control blankets, filter bags for dewatering, and stockpile controls. A construction sequencing plan is included on Sheet C-608.

SW23. Provide expected date clearing will begin and estimate duration of exposure of cleared areas (§153-12.M).

- SW24. Remove hay bales from the proposed erosion control plan (BDPG Pg. 11)
- SW25. Recommend including a note or callout prohibiting the placement of stockpiles within wetland buffer zones.
- SW26. Revise construction sequencing to exclude any steps that do not pertain to the project (e.g. buildings, curbing) and include timing of array racking, fencing, and electrical connections.
- SW27. Revise construction sequencing to indicate timing of detention basin construction. Include a provision during restoration to remove any construction period sediment from the basin.
- SW28. Indicate if existing topsoil is to be retained and/or stockpiled and screened for re-use.
- SW29. The applicant is reminded that a Stormwater permit from the Franklin DPW is required based upon the size of the disturbance.

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.

- SW20. Provide owner signature (§153-18.B(5)).
- SW21. Include provision requiring a documentation submittal to the DPW confirming when maintenance has been satisfactory completed (§153-18.B(6)).
- SW22. Indicate the stormwater system owner(s) for the stormwater management system following construction.
- SW23. Indicate the party or parties responsible for maintenance.
- SW24. Indicate how future property owners will be notified of the presence of the stormwater management system and the need for maintenance.
- SW25. Provide BMP location map.
- SW26. Provide estimated operations and maintenance budget.
- SW27. Eliminate the reference to catch basins since there are none existing or proposed.
- SW28. Revise layout of detention basin and/or perimeter fence to allow maintenance vehicle access around the perimeter of the basin at the crest of the berm.
- SW29. Where solar array rows are perpendicular to topography, include regular inspection and maintenance of drip edges to mitigate creation of rills and gulleys.

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

- SW30. Provide signature of owner on the illicit discharge compliance statement.

WETLANDS PROTECTION

The Project proposes work within Areas Subject to Protection and Jurisdiction of the Franklin Conservation Commission, including the 100-foot Buffer Zones to a vegetated wetland, flood plains, and vernal pools. Work within these areas includes portions of the solar array, fencing, gravel access drives, grading, tree clearing, and construction of a detention basin. Therefore, the Applicant is required to submit an NOI to

Mr. Gregory Rondeau, Chairman

May 25, 2023

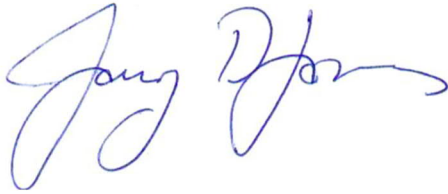
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the Town of Franklin Conservation Commission and must obtain an Order of Conditions to complete the proposed work.

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

Very truly yours,

BETA Group, Inc.

A handwritten signature in blue ink, appearing to read "Gary D. James". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Gary D. James, P.E.
Senior Project Engineer

cc: Amy Love, Town Planner