City of New Bedford
Department of City Planning
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PLANNING BOARD

UPDATED STAFF REPORT

REPORT DATE	PLANNING BOARD MEETING
January 21, 2020	January 29, 2020

Case #19-37: **SITE PLAN REVIEW**
John Vertente Boulevard Extension
Map: 135 Lot: 1, 3, 15, & 47

Applicant/ Owner: NBD Solar, LLC
80 Front Street
Marion, MA 02738

Applicant's Agent: Prime Engineering, Inc.
350 Bedford Street
Lakeville, MA 02347

Overview

Request by applicant for **Site Plan** review for new construction of a large scale ground mounted photovoltaic solar array located on **John Vertente Boulevard** (Map: 135 Lot: 1, 3, 15 & 47) on a 45.88± Acre site of which 21.53± Acres are located in the city of New Bedford in an Industrial C zoned district. Owner/Applicant: NBD Solar, LLC (80 Front Street, Marion, MA 02378).

Existing Conditions

The site is an approximately forty-two (42) acre wooded parcel with over 1,300 feet of frontage on John Vertente Blvd. Eighteen (18) acres of which are in New Bedford located on assessor's map 135, lots 1, 3, 15 and 47. The remaining twenty-four acres are in Dartmouth located on assessor's map 85, lots 8-3, 8-4 and 9. All seven parcels contain wetlands. There are over a dozen areas where historic sand and gravel mining has occurred. Where these excavations have come into contact with groundwater, wetland vegetation has developed. Wetland areas that exceed a quarter of an acre and average 6 inches in depth may be considered jurisdictional with regard to Isolated Land Subject to Flooding regulations. There are vernal pools present. These vernal pools are described in more detail in Appendix F, "Certified Vernal Pool Information" and Appendix G, "Vernal Pool Report."

Proposed Conditions

The applicant proposes to construct a five (5) megawatt AC ground mounted photovoltaic solar array. Approximately half of the solar array will be in Dartmouth, setback approximately two hundred (200) feet from the roadway and seventy-five (75) feet from other property lines. There will be two separate arrays as shown on the plans. The northwest array will span across the City/Town line with no proposed setback from that line since the parcel is in single ownership on both sides of the line. Both the northwest array and the southeastern array will be accessed from the John Vertente Blvd. frontage.

The array consists of "Terraglide" brand fixed-tilt ground mount racks, supported on pillars mounted with "TerraSmart" brand ground screws. Solar panels will be installed on these racks. Details and specifications of the "TerraGlide" system and a "TerraGlide" Landscape Installation Manual is provided in the application. The low amperage, low voltage cables on each row of panels will run to inverters in the racks under the panels which will convert the power from direct current to alternating current. At the end of each row, the cables will run underground to the inverters, transformers, meters and switches. Transformers will adjust the power from low voltage to high voltage. From there, the cables will continue underground to the southern portion of the array, at which point the cables will continue above the ground on utility poles southerly to the high tension lines that abut the southern property line of the site. The electrical connection to the grid will be on the cul de sac at the end of John Vertente Blvd. in Dartmouth.

The construction entrance to the proposed gravel access road will also be located at this cul de sac. The access road will run north and east but exist solely in Dartmouth. Per their conservation submission, trees will be cut to the wetland line but nothing will be stumped within twenty-five (25) feet of the wetlands. This area will be maintained for shrubs and herbaceous growth. The ground underneath the solar array panels will be planted with a (pollinator friendly) wildflower mix.

The solar panels will typically be eight feet high. The applicant states that since the ground is relatively level, only the front row of panels will be visible. Each of the 15,840 solar array panels is 78.74" long by 39.06" wide. Each panel will have a viewable area of 20.070 square feet and tilted at 20 degrees. 17.4% of the 42 acre site will be covered by solar panels while the remaining 82.6% will remain open space (calculations are below). As there is no solar specific

bylaw in the City of New Bedford, these panels are being permitted as a structure. As such, this meets city ordinance that requires a maximum lot coverage of 50% with 20% required green space.

Calculations of Lot Coverage

(15,840 panels) x (20.070 SF/panel) / 43,560 SF/acre = 7.298 acres of panels
7.298 acres of panel / 42 acres of land = .174 lot cover or 17.4%
100% - 17.4% = 82.6% of the 42 acres will remain open space

The control boxes will be set on concrete slabs that will be poured in place. The only ground surfaces areas which will be impervious are the transformers and electric control pads.

The applicant states that 20.5 acres will be cleared from the site in total. MEPA review will not be required because there is no need for any state permits. Approximately 7.3 acres will be utilized for the panels. The ground surface of this entire cleared area, except the gravel access road, will be seeded with a commercial pollinator seed mix and allowed to develop into a meadow by mowing it only once or twice a year. The applicant states that at most, a maintenance person will come to the site once a month to visually check the site. There will typically be no need to drive a vehicle onto the site.

Demolition & Site Preparation.

A silt fence will be installed throughout the perimeter of the site, trees will be cleared and tree stumps removed. A six foot tall chain link fence around the perimeter of the project area will be constructed. An erosion and sediment control plan calls for the contractor to ensure that no soil shall be left exposed (bare) in any of the construction areas of the site. The major erosion control techniques proposed include hay bale barriers, silt fences, inlet sediment traps, a stabilized construction entrance, and erosion control matting. Per the applicant, potential impacts to wetland and water resources within the project area from siltation and sedimentation will be mitigated. This is subject to Conservation Commission review.

Natural vegetation shall be preserved on site where possible in order to prevent erosion by providing continuous anchoring of the soil. Clearing of natural vegetation will be limited to what is necessary for the construction, operation and maintenance of the solar array or otherwise prescribed by applicable laws, regulations and bylaws. Top soil will not be removed from the site. The applicant guarantees that after clear cutting occurs, there will be no increased rate or volume of flow of stormwater and there will be no erosion and no source of water or air pollution.

The project proposes minimal earthwork. There are depressions that resulted from historic gravel mining, some with steep side slopes. These side slopes will be cut back and the site will be leveled out and spread with topsoil. These areas will be seeded with pollinator mix. The boulders are to be scattered throughout the site with particular attention given to maintaining the existing drainage patterns.

Hay bales and silt fencing shall be placed on site during construction to limit the transport of sediment into drainage systems, resource areas and waterways. The contractor is tasked with maintaining the fence in a functional condition throughout the duration of construction/demolition activities. Siltation barrier (silt fence and hay bales) construction details are provided in the application. Construction drawings indicate the locations of erosion control devices (Appendix B).

Parking & Loading. The applicant states that **t**here will be a maximum of one vehicle visit per month which will utilize the gravel access road. Other than authorized personnel, pedestrians and motorists will not be allowed on site. There will be no public access. Therefore, there will be no need for permanent parking or loading spaces.

Traffic Impact & Access Study. A traffic impact and access study has not been submitted with the application and is not seen as warranted at this time. At most one vehicle will visit the site per month.

Circulation. A maximum of one vehicle per month will utilize the gravel access road. Other than authorized personnel, pedestrians and motorists will not be allowed on site. There will be no public access. The once a month, single vehicle visit can easily be handled by the proposed access drive.

Landscaping. The applicant states that a thirty-foot wide, dense planting of evergreens trees will be maintained along the property lines. No plant list or landscape plan is shown. **The board may wish to inquire further about buffers to adjacent parcels and how screening will be accomplished.**

Snow Storage & Waste Receptacles. Snow and ice shall not be removed from panels or electrical equipment. Snow plowing of the access road to the site will be done as needed.

Stormwater. The application lists the following measures to be taken for stormwater management:

- None of the slopes on which the arrays are placed are greater than 3:1.
- An erosion control plan that includes a silt fence and wood-strand berms has been developed to prevent direct discharge to wetlands. Only minor grading is proposed for the project and will not channelize stormwater flow to the Buffer Zone.
- Land disturbance and grading is conducted in a phased and selective manner. The project is divided into 3 separate arrays. **Staff notes project narrative reads there are two separate arrays.** None of the arrays will require the stripping of topsoil. The arrays within the upland blog will preserve existing vegetation while the array in the wooded area will be protected with silt fence and 3' high wood-strand berm.
- Each array is within its own drainage area. The arrays within the upland bog are within self-contained drainage areas. The ground beneath all of the arrays will be covered with natural vegetation, either with the existing cranberry vines, or new meadow grass. In the case of the upland bog arrays, there will be no change in cover type. In the case of the northern array, given this area has HSG-A soils, the curve number for "woods" is the same for "meadow" (30). Since the curve number does not change, there is no need for BMP's (best management practices).
- It is proposed to preserve the top soil.

- Solar panel rows are spaced approximately 13' between rows. Adequate sunlight will reach the ground to support vegetation.
- Gaps between each panel will allow for stormwater to drip between the panels rather than sheet water off the entire array.
- The leading edge of the panels will be approximately 3' above the ground and in no case will be greater than 10 feet above the ground surface.
- No conveyances or outfalls are proposed.
- No work is proposed in a buffer zone of resource areas that border a critical area, as defined at 314 CMR 9.02, or in the estimated habitat identified on the most recent Estimated Habitat Map of State Listed Rare Species prepared by the Natural Heritage and Endangered Species Program.

Conservation Commission review resulted in the removal of a number of solar panels that were in the Outstanding Resource Waters (ORW) area located in the northern tip of the project.

Also as a result of collaboration with the Conservation Commission the applicant has replaced the "Clearing and Grubbing Plan" with the "Erosion and Tree Clearing Plan" and the "Buffer Enhancement Plan." Both the original and revised plans call for tree removal within the required 25' Setback from wetlands. This setback would be delineated by the proposed chain link and silt fencing. Between the fence and the wetlands all trees taller than eight (8) feet would be removed along with their branches. The tree stumps and the understory, less than eight (8) feet high would remain. Comments from Sarah Porter of the Conservation Commission describe the revised plan stating,

> "The cutting of vegetation in the 25' Setback (No Disturb Zone) was subject to a lengthy review by the Conservation Commission as it is a written policy to try and not to disturb this 25' Setback adjacent to the wetlands. Following review, it was determined that the northern 25' Setback did not need to have the vegetation cut. However, the south and east Setbacks are subject to vegetation cutting but the applicant shall replant these areas with low growing native shrubs and trees which have a high wildlife habitat value. The Conservation Commission felt that the plantings would mitigate for the impact from tree cutting."

The revised plans propose a series of four (4) zones within the 25' Setback calling for the replanting of progressively taller shrubs and trees culminating with the height of the existing 40' tall trees at the wetland line. These trees will have their branches pruned back to the wetland line. This plan will allow for sunlight to reach the solar panel arrays.

The annual recharge from the post development is expected to approximate the annual recharge from the pre-development conditions.

Crushed stone will surround the concrete slab at the transformer and control boxes in order to infiltrate the runoff from that slab (refer to Detail plan). Other than the transformer/control box slabs, there is no proposed impervious surface. This amounts to less than .02% lot coverage. Therefore, there is no need for artificial infiltration.

The stormwater management facilities are designed to require little or no intervention in operation and to require little or no maintenance once the project is built and stable vegetative cover is established. However, the drainage improvements shall be subject to the following maintenance schedule:

- Mowing: The field may be mowed at least once a year during the growing season. It is to be cut to a height of no less than 4 inches.
- Debris: All debris and litter are to be removed from the site.
- Re-seeding: Areas that have excessive erosion or slumping are to be regraded and seeded with wildflower mix during the spring or fall growing seasons as needed.

Signage. A sign providing 24 hour emergency contact information will be installed at the entrance gate.

Lighting. There is no regular lighting proposed since all maintenance and inspection will be done during daylight hours. If security lighting is needed, it will be motion activated, night sky compliant and shielded so there is no bleed-over to neighboring properties. There will be one lighting fixture at the equipment pad which will be 180 feet from the roadway. This light will seldom, if ever, be turned on. It will be shielded, downward shining, night sky friendly fixture.

Review Comments

As required under city ordinance, the case submittal documents were distributed to City Clerk, City Solicitor, Health Department, Inspectional Services, Engineering, Public Infrastructure, Conservation Commission, Fire Department and School Department.

Comments from Sarah Porter of the Conservation Commission were received and described earlier. No other comments were received as of the publication of this report; any additional comments received will be made available at the public meeting.

Master Plan Goal

The proposal is consistent with the master plan's goal to expand workforce opportunities and communicates a positive message for business development.

Materials for Consideration

The engineered plan submission is shown as "Proposed Large Scale, Ground Mounted Photovoltaic Solar Array On John Vertente Boulevard in Dartmouth and New Bedford, MA," dated 10-25-19 as revised through 12-20-19. Plans were prepared by Prime Engineering, Lakeville, MA and stamped by Richard J. Reheaume, PE. They were received and stamped by the Clerk's office on **1/22/19**. The plan set consists of the following sheets:

- Sheet #1 Cover Sheet
- Sheet EX Overall Existing Conditions Plan

- Sheet EX-1 Existing Conditions Plan 1
- Sheet EX-2 Existing Conditions Plan 2
- Sheet C-1 Erosion Control and Tree Clearing Plan
- Sheet C-1A Buffer Enhancement Plan
- Sheet C-2 Overall Site Plan
- Sheet C-3 Site Plan 1
- Sheet C-4 Site Plan 2
- Sheet D-1 Details
- Sheet OP Permanent Operation and Maintenance Plan

In addition to foregoing submitted materials the Planning Board may also wish to consider the Development Impact Report that contains the following:

- Narrative
- Appendix A Solar Panel Rack System Details
- Appendix B Erosion and Sedimentation Control Procedures
- Appendix C Permanent Stormwater Operation and Maintenance Program
- Appendix D Checklist for Stormwater Report
- Appendix E Interim Illicit Discharge Statement
- Appendix F Certified Vernal Pool Information
- Appendix G Vernal Pool Report

Site Plan Approval

In considering Site Plan Approval for the proposed project, the Board must find that the plan meets a number of objectives identified in Section 5470 of the City's (c.9) Zoning Ordinance including:

- **Adequate access to each structure for fire and service equipment;**
- **Adequate provision for utilities and stormwater drainage**;
- **Site alteration shall be designed after considering the qualities of the specific location, proposed land use, the design of buildin form, grading, egress points and other aspects of the development so as to:**
  - Minimize cut/fill volumes, removal of 6" caliper trees and larger, removal of stone walls , displacement of wetland vegetatio extent of stormwater flow increase from the site, soil erosion and the threat of air/water pollution;
  - Maximize pedestrian/vehicular safety to/from the site;
  - Minimize the obstruction of scenic views from publicly accessible locations;
  - Minimize visual intrusion by controlling layout/visibility of parking, storage and outdoor service areas viewed from public wa and residential areas;
  - Minimize glare from vehicle headlights and lighting fixtures;
  - Minimize unreasonable departure from the character, materials and scale of buildings in the vicinity;
  - Minimize contamination of groundwater from on-site wastewater disposal systems or operations on the premises involving th use, storage, handling or containment of solid/liquid wastes and hazardous substances;
  - Ensure compliance with the Zoning Ordinance;

Staff Recommendations

Site Plan Approval. Having reviewed the submitted materials, planning staff offers the following recommendations for conditions to the Planning Board should it act favorably on the requested site plan approval for the project:

- □ That the following specific conditions be applied to this decision:
  - □ A Landscape plan, depicting type and quantity of buffer area plantings, shall be submitted to the Planning office for review and approval prior to the issuance of a building permit.
  - □ Any changes to the plan as a result of conservation commission review shall be incorporated into this decision and approved plans shall submitted to Planning staff to determine if the modification requires further board approval.
- □ That the following general conditions also be applied to this decision:
  1. The project shall be completed according to the plans, notes, reports, and specifications submitted for consideration and final approval by the Planning Board.
  2. The project shall be undertaken in a manner consistent with the Memorandum from the Department of Public Infrastructure received and placed on file and the Planning Board incorporates the DPI memo as part of these conditions.
  3. The applicant shall submit final plan revisions to the Planning Division in the following formats: one (1) -11" x 17" Plan Set and one (1) CD or USB with Plan Set in PDF format and shall ensure that these same plans are properly submitted to the Department of Inspectional Services.
  4. The applicant shall ensure that a copy of the Notice of Decision, bearing the certification of the New Bedford City Clerk signifying no appeal has been made against the project's approval, be provided for the Planning Division Case file folder.
  5. That the applicant shall ensure a copy of the Notice of Decision bearing the certification of the city of New Bedford City Clerk, signifying no appeal has been made against the project's approval, be recorded at the Registry of Deeds.
  6. The applicant shall ensure that a copy recorded decision be provided for the Planning Division Case file folder.
  7. The applicant shall present any proposed modification from the approved plans for consideration to the City Planner for determination as to whether the modified plan must return before this Board for further review.
  8. The rights authorized by the granted approval must be exercised by issuance of a Building Permit by the Department of Inspectional Services and acted upon within one year from the date the decision was granted, or they will lapse.
  9. The developer and site contractor must schedule a pre-construction meeting with the Department of Public Infrastructure prior to the start of construction.

Materials Provided by the Applicant are available at: *https://www.newbedford-ma.gov/planning/planning-board-agenda-info-2020/*

John Vertente Blvd Map: 135 Lot: 1, 3, 15 & 47

NOTE: Property line is approximate; for discussion purposes, only. Aerial map is oriented north.