

MARCH 20, 2024

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Town of Sturbridge Conservation Commission
c/o Jeffrey Howland, PE
Interim Conservation Agent
301 Main Street
Sturbridge, MA 01566

RE: Proposed Photovoltaic System, 200 Haynes Street, Response to Peer Review and Public Comment

Dear Mr. Howland and the Sturbridge Conservation Commission,

BSC Group, Inc. (BSC) has reviewed the comments provided by EcoSystem Solutions, Inc., as contained in correspondence to the Sturbridge Planning Board, dated November 26, 2023 and January 23, 2024. In addition, this letter also provides responses to abutter comments received by the Town Planner, as contained in a memorandum to the Sturbridge Planning Board, dated January 11, 2023. The original comments are shown below and the Applicant's responses follow in italics.

Peer Review Comments from EcoSystem Solutions, Inc.

11/26/2023 General Wetland Peer Review Comments

1. I recommend the Applicant provide as detailed a construction sequence as possible, including times-of-year when work will occur. For example, what time of year will trees be felled, stumped, and tree materials removed?

BSC 3/20/2024 Response: The Applicant intends to begin work as soon as the necessary permits and authorizations are in place. There is no NHESP Priority Habitat or other jurisdiction that would enable the use of a time-of-year restriction for the activities proposed. Tree removal will take place according to construction authorization.

No further action required.

2. The site will have to be felled of trees and stumped. Will the trees and stumps be chipped on-site? Will any of this material be utilized for ESC's? If so, I recommend removing chips from the trunk and stems from the site while keeping the root tailings for ESC's on-site. Root tailings tend to be curved and 'grab' into the ground, while chips tend to float. Root tailings can be used as a cover, and be created into erosion and sedimentation control berms. This can supplement the proposed ESC's and, in my opinion, even replace the need for siltsoxx, which tend to flatten over time and sheathing tear and rent.

BSC 3/20/2024 Response: The tree clearing proposed is the minimum required to develop the proposed facility. Some existing Mountain Laurel specimens on the site will be saved and replanted as part of the Project planting plan. The slash from the felling of trees will be utilized in a manner that best suits the Project. On the Site Plan entitled, "Ground Mounted Photovoltaic System, 200 Route 15 – Sturbridge, Massachusetts," the Erosion Control and Sedimentation Plan on Sheet 3 of 9 shows the erosion and sediment control measures are coincident with the limit of work. The comment suggests either that the woody material be placed to encroach into the undisturbed vegetated buffer, or that it should be stockpiled at the interior of the limit of work where activities are proposed. Neither option is feasible or compliant with the existing Sturbridge Wetlands Bylaw and Regulations or the 3/7/2024 Decision of the Sturbridge Planning Board.

No further action required.

3. If tree trunks are to be removed from the site, will they be removed using the existing gravel entrance near the southwestern Property corner, or will the new entrance near the northwestern property corner be used? Is either entrance large enough to accommodate skid steers, cutting equipment, and logging trucks? Either way, a stone construction entrance will be required. The longer, the better.

BSC 3/20/2024 Response: The proposed northwestern entrance to the site is also the construction entrance. The existing southwestern entrance to the site is proposed to be stabilized and seeded. On the Site Plan entitled, "Ground Mounted Photovoltaic System, 200 Route 15 – Sturbridge, Massachusetts," the Erosion Control and Sedimentation Plan on Sheet 3 of 9 shows the specifications for the temporary construction entrance. It will be a minimum of 50' long and 20' wide, with 8' minimum depth aggregate over geotextile fabric. This is the standard installation for the EPA Construction General Permit. Applicant intends to begin work as soon as the necessary permits and authorizations are in place. There is no NHESP Priority Habitat or other jurisdiction that would enable the use of a time-of-year restriction for the activities proposed. Tree removal will take place according to construction authorization.

No further action required.

4. I have no comments about the types and locations where seed will be spread per the seeding schedule on Sheet 4 or 9. However, having worked on many large-scale solar project and peer reviewed even more, I find the inclusion of 'pollinator mix' seed mixes a bit of a joke, for lack of other terms. These kinds of seed mixes require a high level of care and upkeep to assure that they actually grow in as advertised. My personal experience has been that in most cases, the ground cover ends up being grasses and weeds unless the Commission requires close monitoring and re-seeding as needed. I recommend a Special Condition to this effect. Recommend the Applicant provide as detailed a construction sequence as possible, including times-of-year when work will occur. For example, what time of year will trees be felled, stumped, and tree materials removed?

BSC 3/20/2024 Response: On the Site Plan entitled, "Ground Mounted Photovoltaic System, 200 Route 15 – Sturbridge, Massachusetts," the Planting Plan on Sheet 4 of 9 shows the specifications for a diversified planting schedule developed by a BSC Landscape Architect, including the rescue of existing Mountain Laurel specimens on Site and the installation of perimeter habitat enhancement plantings required by the 3/7/2024 Decision of the Sturbridge Planning Board. The Planting Plan also shows 90 day Maintenance Period and 1 year Establishment Period Performance Standards that the Commission may reference in their Special Condition. Other anecdotal comments of the Peer Review are not relevant to the permitting the proposed Project.

No further action required.

5. My main concern for impact revolves around the BVW in the northern part of the Property, especially since the majority of it is located off-site. It is on land owned by Sturbridge Retirement. Please consider a Bond in case this off-site land is impacted in order to stave off complication in enforcement and potential civil actions among the parties involved. If sediment reaches areas off-site, the Applicant/Owner will have to obtain authorization from Sturbridge Retirement to perform the work. The Commission should try to anticipate this worst-case scenario and head-off problems associated with enforcement. The same applies to any wetlands to the south, and the residences in that area as well.

BSC 3/20/2024 Response: The Project is already subject to a bond to the Town in the amount of \$328,020.00 via the Sturbridge Planning Board Decision. The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment that the Peer Review references. The Applicant does not anticipate the need to gain authorization to access abutting properties at this time.

No further action required.

6. Other concerns, as they revolve around the Public Interest include:

- a. Public and Private Water Supply: the Co-op has two community wells to the east. Clearing land and grading affects runoff and the direction in which water flows. Assurance needs to be gained from the applicant in this regard, not to mention residences to the south, at a minimum.

BSC 3/20/2024 Response: The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment that the Peer Review references.

- b. Protection of Groundwater Supply: same comments as above, plus assurance that the BVW to the north, at a minimum, will be able to continue to be a groundwater source. This is mostly done through compliance with the Stormwater Standards.

BSC 3/20/2024 Response: The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment that the Peer Review references.

- c. Prevention of Pollution: the BVW has water quality functions in addition to its other functions. Sediment from this slope would significantly impair that ability.

BSC 3/20/2024 Response: The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment that the Peer Review references.

- d. Protection of fisheries: although I observed no streams on-site that would have fisheries, the BVW provides a water source for fisheries it eventually connects to.

BSC 3/20/2024 Response: Anecdotal comments of the Peer Review are not relevant to the permitting of the proposed Project.

- e. Protection of wildlife habitat: this is a significant concern to me, not only for the BVW but for the Buffer Zone associated with it. The forest on-site is of good to high quality, with no invasive or exotic species observed anywhere that I could see. I observed a large wasp nest in a tree while walking a cut-trail toward the summit. The trees are mature and there is good spatial heterogeneity in herbaceous, shrub, and tree layers. The presence of mountain laurel in the forest, although not a rare forest ecosystem, is not common, either. The cumulative effect is that wildlife habitat value at this site is high.

BSC 3/20/2024 Response: Anecdotal comments of the Peer Review are not relevant to the permitting of the proposed Project.

- f. Erosion and sedimentation control: The Interest under the local Bylaw is self-explanatory. The potential for significant erosion and sedimentation, as well as the distance it may reach from the source, is high. The BVW and Buffer Zone would be irreparably harmed if a significant sedimentation event occurred. What would be even more difficult is a cleanup.

BSC 3/20/2024 Response: The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment that the Peer Review references. Anecdotal comments of the Peer Review are not relevant to the permitting of the proposed Project.

- g. Protection of water quality: Similar to prevention of pollution, the BVW provides water quality functions that would be significantly impacted by a sedimentation event.

BSC 3/20/2024 Response: The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment that the Peer Review references.

- h. Protection of agriculture: Only in respect to tree harvesting, which is considered a form of agriculture. In this case, the forest would be harvested, which appears to be a positive toward this Interest, but if a solar array is constructed, this would be the last time it would be harvested for decades to come, if ever

BSC 3/20/2024 Response: Anecdotal comments of the Peer Review are not relevant to the permitting of the proposed Project.

No further action required.

11/26/2023 Supplemental comments to the 11/2/2023 CMG report

1. I do not believe that siltsoxx compost filter socks are enough to control potential erosion and sedimentation on-site and recommend that silt fence be installed directly below filter socks with a high quality fabric and stake spacing of 4 feet, at a minimum. The siltsoxx should be 100% biodegradable with no vinyl mesh, regardless of whether or not it is photo-degradable.

BSC 3/20/2024 Response: On the Site Plan entitled, "Ground Mounted Photovoltaic System, 200 Route 15 – Sturbridge, Massachusetts," the Erosion Control and Sedimentation Plan on Sheet 3 of 9 shows the specifications for the erosion and sedimentation controls, which include 12"-18" siltsoxx and steaked, silt fencing.

No further action required.

2. Sedimentation controls should be placed a minimum of five (5') feet off of any proposed slope in order to allow sediment to settle before reaching it. If this is not possible, I recommend reducing the scale of the project.

BSC 3/20/2024 Response: The entire project site hosts varying grades of slope. The location of sedimentation and erosion controls is coincident with the limit of work.

No further action required.

3. The stone construction entrance should extend farther into the site, preferably into and around the construction staging area.

BSC 3/20/2024 Response: On the Site Plan entitled, "Ground Mounted Photovoltaic System, 200 Route 15 – Sturbridge, Massachusetts," the Erosion Control and Sedimentation Plan on Sheet 3 of 9 shows the specifications for the temporary construction entrance. It will be a minimum of 50' long and 20' wide, with 8'

minimum depth aggregate over geotextile fabric. This is the standard installation for the EPA Construction General Permit.

No further action required.

4. The NPDES Construction General Permit (“CGP”) and SWPPP should be provided to the Commission when it becomes available, per Stormwater Standard 8. Due to the steep slopes present, the Commission should consider the Applicant to provide the weekly inspection logs / reports associated with the CGP in .pdf format. They may also consider having an outside professional monitor the site for erosion and sedimentation compliance under the CGP. The steepness of the slopes and potential for serious erosion and sedimentation of wetland resource areas is high at this site. I can guarantee that there will be significant precipitation events that will cause erosion on-site during construction.

BSC 3/20/2024 Response: The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment that the Peer Review references. Anecdotal comments of the Peer Review are not relevant to the permitting of the proposed Project.

No further action required.

5. Include the long-term operation and maintenance plan as an in-perpetuity Special Condition.

BSC 3/20/2024 Response: The 3/7/2024 Decision of the Sturbridge Planning Board includes the following Condition of Approval. “14. Prior to ground disturbance, the Stormwater Operation and Maintenance Plan shall be submitted to, and approved by the DPW Director, with proof of such approval provided to the Planning Department.” The Applicant will provide the same to the Conservation Commission.

No further action required.

6. Not only does Infiltration Basin 1 not include a sediment forebay, it does not appear to have an emergency overflow spillway.

BSC 3/20/2024 Response: Please see the revised, “Ground Mounted Photovoltaic System, 200 Route 15 – Sturbridge, Massachusetts,” Plan Set for Stormwater Peer Review resolutions. The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment that the Peer Review references.

No further action required.

7. In CMG’s comment 17, they state that the berm elevation for Infiltration Basin 1 should be a height that a minimum of 1ft. of freeboard be provided for the 100 year storm event. Given the very steep slopes leading down to the Co-op and residences associated with it, I recommend increasing this height if only to be overly cautious of a significant precipitation event.

BSC 3/20/2024 Response: Please see the revised, “Ground Mounted Photovoltaic System, 200 Route 15 – Sturbridge, Massachusetts,” Plan Set for Stormwater Peer Review resolutions. The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and

a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment that the Peer Review references. Anecdotal comments of the Peer Review are not relevant to the permitting of the proposed Project.

No further action required.

8. Are there any emergency overflow discharges for the subsurface infiltration systems?

BSC 3/20/2024 Response: Please see the revised, "Ground Mounted Photovoltaic System, 200 Route 15 – Sturbridge, Massachusetts," Plan Set for Stormwater Peer Review resolutions. The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment that the Peer Review references. Anecdotal comments of the Peer Review are not relevant to the permitting of the proposed Project.

No further action required.

1/23/2024 General Wetland Peer Review Comments

1. My comments and concerns remain the same as in my November 26, 2023 letter to the Commission. One saving grace on the south side of the Property is that there is a stone wall that runs east-west. If this wall is to remain, and there is no indication that it will or will not on the site plan, it would act as a better sedimentation control device than a chain-link backed silt fence barrier, which is something I recommend if the Commission seriously considers approving this project.

BSC 3/20/2024 Response: The stone wall referenced above marks the southern boundary of the parcel and is shown on the "Ground Mounted Photovoltaic System, 200 Route 15 – Sturbridge, Massachusetts," the Existing Conditions Plan on Sheet 2 of 9. It is located within the undisturbed vegetated buffer, and will remain.

No further action required.

Summarized Comments from Sturbridge Crossing to Conservation Commission

1/11/2024 General Abutter Comments

1. Pre-development and Post development Watershed Plans show that run-off will occur from area 4S to 4R. Area 4S is a peaked area on the southern border. Area 4R is a lower lying area on 30 Mashapaug (the other abutter on the southern border). The South Wetland map does include more of the 2-76 Bentwood property than on Watershed Plans referenced above. It also gives decreasing numerical elevations on 30 Mashapaug that show some likely gravitational flow to that area. However, the elevation lines are in a circular configuration around the peaked area suggesting that some run-off would spread in a fan like fashion in the direction of 2-76 Bentwood, as well. The South Wetland map does not include any numerical elevations on 2-76 Bentwood property making it difficult to believe our property is safe from run-off. We request that numerical elevations be added. This is a second request. Please explain why the applicant believes that run-off will only head to 30 Mashapaug.

The area around the sewer for Units 66-76 is a tank and leach field in a very low lying area on our property. The elevation is unknown. The land between this sewer and the southern border has an approximate 20-foot change of elevation that can visually be characterized as a drop-off. The location of the sewer and drop-off is unclear on the South Wetland map. We request that the location of the drop-off, sewer, and buildings be added. CMG (#8) requested that the location of the sewer be verified.

BSC 3/20/2024 Response: The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind. The purpose of MA DEP Stormwater Standards in design and a NPDES SWPPP in construction is to manage 100-year stormwater volume on site and prevent the type of sediment transfer that may cause injury to the abutting properties and the environment.

No further action required.

2. Pre-development Regarding CMG #31, the applicant was asked to correct and meet the 200' buffer setback from Sturbridge Crossing. The applicant's responded that "the site plans were adjusted accordingly." Please explain how. A comparison of number of rows in the array changed from 47 in the application to 41 in the South Border Wetland map. Is this what the applicant was referring to? From what point was the 200' buffer measured?

BSC 3/20/2024 Response: BSC 3/20/2024 Response: Please see the revised, "Ground Mounted Photovoltaic System, 200 Route 15 - Sturbridge, Massachusetts," Plan Set dated 3/6/2024 for Approved Delineations.

No further action required.

The Project as resolved the questions brought forth by EcoSystem Solutions, Inc. peer review and abutter comments. In addition to receiving a Decision of the Sturbridge Planning Board earlier this month. There were no questions or concerns of the wetland delineations conducted on the site. The concerns raised on this project are specific to stormwater management as it pertains to the Sturbridge Wetlands Bylaw and Regulations. The Project design complies with the MA DEP Stormwater Standards and is approved by the Planning Board pursuant to this requirement. Prior to ground disturbance, the Project NPDES SWPPP shall be submitted to the Planning Department and may also be furnished to the Conservation Commission in kind.

The Applicant respectfully requests the Commission vote to approve the project and issue a permit under the Sturbridge Wetlands Bylaw at the March 28, 2024 meeting of the Sturbridge Conservation Commission.

Please do not hesitate to contact us should you have further questions or concerns. We look forward to discussing the revised site plans at the next public hearing.

Sincerely,

BSC Group, Inc.



Adrienne D. Lennon

Senior Scientist