



YSG Solar Development Company, LLC
79 Madison Avenue, 8th Floor
New York, NY 10016
(212) 389-9215

Aleksandra Moch
13 Webb Avenue
Stamford, CT 06902
203-975-7834

August 25, 2022

RE: Briarcliff Solar Application for Special Use Permit

Dear Ms. Moch,

YSG Solar is in receipt of your comment letter dated July 24, 2022, regarding the 345 Scarborough Rd Solar facility. YSG solar is submitting the enclosed comment response table to address the comments received within the letter. The following new or revised documents are being submitted to supplement the prior application package and comment response table:

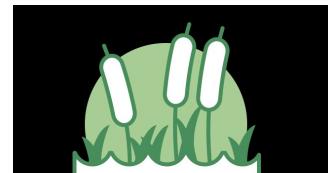
- Project Application Book (Text Only)
 - A compiled document is available upon request
- Briarcliff Manor Site Plan (REVISED)
- Heat Island Email Correspondence (NEW)
- Heat Island Effect Memo 08.15.2022 (NEW)
- Slope Letter (NEW)
- SavATree Tree Inventory Report (NEW)
- SWPPP (REVISED)

If you need any additional information, please email me at James.T@YSGSolar.com or call me at **716-440-8698**, to learn more.

Thank you,

Jim Taravella
YSG Solar
James.T@YSGSolar.com

cc: Christine Dennett, Village Clerk
David Turiano, P.E.



July 24, 2022

David J. Turiano, P.E.
Village Engineer
1111 Pleasantville Road,
Briarcliff Manor, NY 10510

Re: Briarcliff Manor Solar - 345 Scarborough Rd - Solar Farm – YSG Solar

List of references:

- Site plan by LaBella, dated May 10, 2022
- Tree Clearing by LaBella, dated May 10, 2022
- Storm Water Pollution Prevention Plan, by LaBella, dated May 2022
- Solar Farm Heat Island, memorandum by Jim Taravella, P.E., dated July 14, 2022
- Project Application Book, revised June 22, 2022

Dear Chairman and Members of the Planning Board,

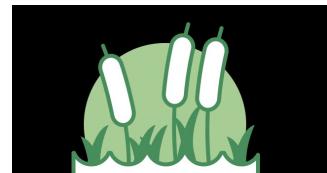
I have reviewed the above referenced material on behalf of the Village of Briarcliff Manor. The following comments are offered for your considerations:

A. Steep slopes

Section 200-15 of the Village Briarcliff Manor Code protects steep slopes. The proposed project engages areas of 15-25% and >25% slopes. The disturbance includes removal of deeply rooted trees and replacing the forested cover with solar arrays with a meadow environment. Uprooting trees and removal of the existing vegetative cover will create a significant soil disturbance making the area prone to erosion during the solar panel installation and a long time before the new meadow establishment. Newly seeded area will need from two to five years to develop a dense ground cover. Steeper slopes may not develop a full ground cover at all due to the seed loss to downslope erosion.

Unpredictable and severe rain events associated with climate change may easily erode unprotected soil. Protecting slopes during installation of the solar panels and during the first two growing seasons is crucial. The submitted material is not convincing, this goal will be successfully accomplished.

The proposed temporary silt socks used on the sloping areas are the right step to address the issue, but they are set too far apart and placed sparsely. Their compost fill will decompose before the new meadow has the chance to fully establish. A single lane of silt face encompassing 49 acres of disturbed land is not adequate to retain the massive erosion which is expected from the site. A more comprehensive soil erosion and sediment control plan should be provided. The Storm Water Pollution Prevention Plan is too



generic; therefore, it should be customized to address the proposed activities and the specificity of this site (steep slopes, presence of highly erodible soils such as Paxton, etc.)

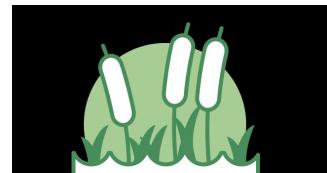
Eroding sites may have a long-range impact on the downslope areas including the roads which can easily convey mud into the watercourses directly and/or via the existing street drainage system. Gully erosion currently present on the slope within the wooded area will be worsen when trees are removed and soil disturbed. The applicant should consider avoiding slopes >25% and provide carefully designed measures for the 15-25% gradient.

B. Tree removal

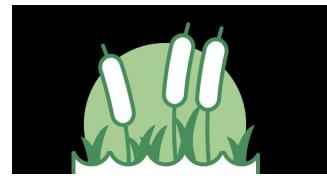
A tree inventory identifying species, their locations and evaluating their health within the wetland/watercourse buffers was requested.

C. Wetland/watercourse area – potential impacts:

- The area of the solar arrays will not encroach upon the 100-foot wetland/watercourse buffer, but to maximize the sun exposure trees will be removed from the wetland/watercourse buffer. While the site plan indicates several trees to be removed from the eastern edge of the wetland/watercourse buffer area, the Project Application Book states “no tree-clearing will take place within the wetland/watercourse areas and their buffers”. The Tree Clearing Plan however shows most of the existing trees growing and stabilizing the banks of Starta Brook to be removed. The same plan, indicates a similar impact to the northwestern wetland/watercourse buffer area. This clearing will have irreversible impact on both systems. Tree clearing will destabilize the buffer areas, expose them to erosion and cause loss and deterioration of their wildlife habitats. Removal of deeply rooted trees crucial to the stream banks stabilization will expose both channels to full sun increase water temperature, decrease oxygen content within the water column and impact aquatic organisms. These negative effects are not acceptable and they should be avoided at any cost. Removal of trees will eliminate their important functions they provide within the wetland buffer such as soil protection, formation and stabilization, storm water filtration and absorption, wildlife habitat support, carbon sequestration, air purification, etc. The clearing within the northwestern wetland/watercourse buffer area shown on the Tree Clearing Plan seems to be unjustified. This section of the western woodland does not interfere with the proposed sun harvesting project.
- The soil erosion and sediment control plan shows silt and orange snow fencing along the watercourse edges. If the applicant does not intend to perform any activities within the wetland/watercourse buffer areas such as tree clearing, all measures should be relocated to the edge of the disturbance, located outside of both wetland/watercourse buffers.



- The proposed underground electric conduit will cross the wetland/watercourse buffer. Due to the slopes on both sides of the brook trenching for its installation may cause soil erosion and impact the regulated area. Site inspection should be performed weekly or after every larger storm event with written report by a qualified consultant. Also, proper soil stabilization and permanent cover needs to be provided to enhance the existing wildlife habitat and ensure proper site stabilization in this area.
- The access to the site will be provided via the existing paved road. Paved surfaces are the prime conduits for storm water flow. During the site disturbance storm water runoff carry suspended sediment. Failure to maintain proper soil erosion and sediment control measures during the solar panel installation and prior to the permanent site stabilization may cause sedimentation to the watercourse and cause increased flows resulting in bank erosion. Lack of vegetative cover will increase the velocity of the flow and result in concentrated flows increasing site erosion. Weekly site inspection will be instrumental in controlling and preventing the impact.
- The wildlife habitat supported by the wetland/watercourse area is directly connected to the upland; therefore, the environmental review should include the proposed plant species offered to restore the site to ensure the maximum benefits to the wetlands/watercourses. The landscape plan offers buffer plantings without specifying the species and their sizes. Lack of this information does not allow the effort to be evaluated as a mitigation measure. The NYSDEC #6 seed mixture is not the most beneficial and wildlife-oriented mix. The area which encroaches upon the 100-foot buffer should be planted with more pollinator supportive choice.
- The site has been divided into 3 drainage sub-basins. The applicant should provide analysis of how each of them will be affected by the proposed project. When the existing hard surfaces in one area may decrease, the other sub-basins may experience an increase. As stated in the Storm Water Pollution Prevention Plan “maintaining existing drainage patterns as much as possible while continuing the conveyance of upland watershed runoff” is important. How the solar farm effect the sub-basin draining to the Starta Brook and the northwestern wetland/watercourse system?
- Lastly there is a concern, the solar panels replacing vegetated areas may have an impact on the storm water quality and quantity. Study had shown solar farms generate thermal impact on storm water runoff caused by the hot surfaces of solar panels during summer months. How the stormwater will be cooled off before it reaches the watercourse areas? The memorandum drafted by Jim Taravella, P.E., on the Solar Farm Heat Island confirms the solar array increases the surrounding air temperature. Due to the dark color of the panels, the surface is hotter than the surrounding landscape; therefore, during the summer time, the storm water runoff



draining from their surface becomes a source of thermal pollution to the receiving streams.

- New sources of renewable energy are crucial in combating the climate change and reducing the generation of greenhouse gases, but doing it at such high cost to the environment may not be the right move. When considering over twenty acres of lost forested cover, compromised slope protection and impacts to the health of the wetlands and watercourses, the environmental damage outweigh the benefits. The applicant should consider a different site for this project. A site which will reclaim a disturbed soils and/or contaminated area.
- The amount of submitted material is overwhelming. The submission lacks consistency and it will be difficult for board members to digest. It is recommended a comprehensive summary of the project and reports is provided which offers the most current revisions and points out the most important elements.

I trust you find the above comments helpful. Please feel free to contact me if you have any questions.

Regards,

Aleksandra Moch
Environmental Consultant



Briarcliff Solar Development
Comment/Response Table
8/25/2022

YSG Solar Development Company, LLC
79 Madison Avenue, 8th Floor
New York, NY 10016
(212) 389-9215

Comment Letters Provided by the Village of Briarcliff Manor	YSG/Briarcliff Solar LLC Response
Aleksandra Moch RE: Briarcliff Solar - 345 Scarborough Rd - Application for Special Permit (July 24, 2022)	
<p>A) Steep Slopes</p> <p>Section 200-15 of the Village Briarcliff Manor Code protects steep slopes. The proposed project engages areas of 15-25% and >25% slopes. The disturbance includes removal of deeply rooted trees and replacing the forested cover with solar arrays with a meadow environment. Uprooting trees and removal of the existing vegetative cover will create a significant soil disturbance making the area prone to erosion during the solar panel installation and a long time before the new meadow establishment. Newly seeded area will need from two to five years to develop a dense ground cover. Steeper slopes may not develop a full ground cover at all due to the seed loss to downslope erosion.</p> <p>Unpredictable and severe rain events associated with climate change may easily erode unprotected soil. Protecting slopes during installation of the solar panels and during the first two growing seasons is crucial. The submitted material is not convincing, this goal will be successfully accomplished.</p> <p>The proposed temporary silt socks used on the sloping areas are the right step to address the issue, but they are set too far apart and placed sparsely. Their compost fill will decompose before the new meadow has the chance to fully establish. A single lane of silt face encompassing 49 acres of disturbed land is not adequate to retain the massive erosion which is expected from the site. A more comprehensive soil erosion and sediment control plan should be provided. The Storm Water Pollution Prevention Plan is too generic; therefore, it should be customized to address the proposed activities and the specificity of this site (steep slopes, presence of highly erodible soils such as Paxton, etc.)</p> <p>Eroding sites may have a long-range impact on the downslope areas including the roads which can easily convey mud into the watercourses directly and/or via the existing street drainage system. Gully erosion currently present on the slope within the wooded area will be worsen when trees are removed and soil disturbed. The applicant should consider avoiding slopes >25% and provide carefully</p>	<ul style="list-style-type: none">• All erosion control measures discussed in the SWPPP and presented on the plans are approved methods by the NYSDEC.• In accordance with GP-0-20-002, erosion and sediment controls will remain in place and be maintained until such time that sufficient ground cover has been achieved to receive a notice of termination from the NYSDEC. To mitigate the potential for erosion and seed loss on sloped areas, rolled erosion control products are detailed on sheet C501 of the revised plan set for use on slopes greater than 3:1.• Section 3.7 of the SWPPP states that water bars are used on steeper sloped areas. These water bars are depicted on sheets C401, C402, and C403 of the revised plan set. Additionally, rolled erosion control products are detailed on sheet C501 of the revised plan set for use on slopes greater than 3:1.• The solar facility layout has been revised to minimize disturbance to areas that have steep slopes.• We have attached a letter laying out why we feel that the remaining steep slope disturbances are in compliance with §220-15 and should be approved by the Planning Board. As stated in the letter, it is the project's intent to maintain the current grading and seed it with a NYSDEC erosion control mix. Once established, the NYSDEC erosion control mix will enhance infiltration in addition to slowing and reducing stormwater runoff from this area, thus reducing gully erosion currently present, thus benefitting adjacent properties.
<p>B) Tree removal</p> <p>A tree inventory identifying species, their locations and evaluating their health within the wetland/watercourse buffers was requested.</p>	<ul style="list-style-type: none">• As indicated in a prior response, a tree inventory was initiated on July 13, 2022 and has been completed. Sheet C005 of the revised plan set depicts the locations of the trees inventoried.• The tree inventory report and table have been included with this submission.• The tree inventory requested by the Village and prepared by an ISA certified arborist, SavATree, has been attached to this submission. An online map of the inventory can be found here: https://arcg.is/1ieiGT.



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Comment Letters Provided by the Village of Briarcliff Manor	YSG/Briarcliff Solar LLC Response
<p>C) Wetland/watercourse area – potential impacts:</p> <p>1) The area of the solar arrays will not encroach upon the 100-foot wetland/watercourse buffer, but to maximize the sun exposure trees will be removed from the wetland/watercourse buffer. While the site plan indicates several trees to be removed from the eastern edge of the wetland/watercourse buffer area, the Project Application Book states “no tree-clearing will take place within the wetland/watercourse areas and their buffers”. The Tree Clearing Plan however shows most of the existing trees growing and stabilizing the banks of Starta Brook to be removed. The same plan, indicates a similar impact to the northwestern wetland/watercourse buffer area. This clearing will have irreversible impact on both systems. Tree clearing will destabilize the buffer areas, expose them to erosion and cause loss and deterioration of their wildlife habitats. Removal of deeply rooted trees crucial to the stream banks stabilization will expose both channels to full sun increase water temperature, decrease oxygen content within the water column and impact aquatic organisms. These negative effects are not acceptable and they should be avoided at any cost. Removal of trees will eliminate their important functions they provide within the wetland buffer such as soil protection, formation and stabilization, storm water filtration and absorption, wildlife habitat support, carbon sequestration, air purification, etc.</p> <p>The clearing within the northwestern wetland/watercourse buffer area shown on the Tree Clearing Plan seems to be unjustified. This section of the western woodland does not interfere with the proposed sun harvesting project.</p>	<ul style="list-style-type: none">As indicated on sheet C005 of the revised plan set, no trees will be removed from the watercourse area.As indicated on sheet C005 and sheets CD101-CD103, of the revised plan set, a single invasive tree, approximately 70 feet from the western bank of the watercourse, will be removed. In the southeastern corner of the proposed solar development approximately eight trees will be removed, none of which lies closer than 80 feet from the western bank of the watercourse. In total, approximately nine trees will be removed from the second 50 foot buffer surrounding the watercourse.The removal of nine trees, over 70 feet from the nearest bank will not have a destabilizing effect on the stream bank.As indicated on sheet CD101 of the revised plan set, no clearing will occur near or within the northwestern wetland/watercourse.The proposed Project will result in no air emissions, has been designed to minimize natural resource impact(s), and complies with the applicable air and water quality standards of the New York State Department of Environmental Protection (“NYSDEC”). In addition, the Project will not have an adverse environmental effect in the State of New York and will contribute to the State’s efforts in promoting the deployment of clean, renewable energy sources. As such, we do not feel this is providing any negative impact, and will continue to work in good faith with the village or the villages consultants to address any concerns.
<p>2) The soil erosion and sediment control plan shows silt and orange snow fencing along the watercourse edges. If the applicant does not intend to perform any activities within the wetland/watercourse buffer areas such as tree clearing, all measures should be relocated to the edge of the disturbance, located outside of both wetland/watercourse buffers.</p>	<ul style="list-style-type: none">As indicated on sheets C401-C403 of the revised plan set, the reinforced silt fencing has been relocated away from the watercourse.
<p>3) The proposed underground electric conduit will cross the wetland/watercourse buffer. Due to the slopes on both sides of the brook trenching for its installation may cause soil erosion and impact the regulated area. Site inspection should be performed weekly or after every larger storm event with written report by a qualified consultant. Also, proper soil stabilization and permanent cover needs to be provided to enhance the existing wildlife habitat and ensure proper site stabilization in this area.</p>	<ul style="list-style-type: none">With the revised solar layout and the results of the ConEd CESIR study, the point of interconnection no longer requires any conduit to be located within the wetland buffer area.
<p>4) The access to the site will be provided via the existing paved road. Paved surfaces are the prime conduits for storm water flow. During the site disturbance storm water runoff carry suspended sediment. Failure to maintain proper soil erosion and sediment control measures during the solar panel installation and prior to the permanent site stabilization may cause sedimentation to the watercourse and cause increased flows resulting in bank erosion. Lack of vegetative cover will increase the velocity of the flow and result in concentrated flows increasing site erosion. Weekly site inspection will be instrumental in controlling and preventing the impact.</p>	<ul style="list-style-type: none">Acknowledged - these are the requirements mandated by GP-0-20-002 and addressed within the SWPPP.
<p>5) The wildlife habitat supported by the wetland/watercourse area is directly connected to the upland; therefore, the environmental review should include the proposed plant species offered to restore the site to ensure the maximum benefits to the wetlands/watercourses. The landscape plan offers buffer plantings without specifying the species and their sizes. Lack of this information does not allow the effort to be evaluated as a mitigation measure. The NYSDEC #6 seed mixture is not the most beneficial and wildlife-oriented mix. The area which encroaches upon the 100-foot buffer should be planted with more pollinator supportive choice.</p>	<ul style="list-style-type: none">Sheets C601-C603 indicate that all disturbed areas within 50 feet of a wetland buffer will be seeded with a NYSDEC approved pollinator mix.Proposed buffer planting areas have been added to sheets C601 and C602 of the revised plan set.
<p>6) The site has been divided into 3 drainage sub-basins. The applicant should provide analysis of how each of them will be affected by the proposed project. When the existing hard surfaces in one area may decrease, the other sub-basins may experience an increase. As stated in the Storm Water Pollution Prevention Plan “maintaining existing drainage patterns as much as possible while continuing the conveyance of upland watershed runoff” is important. How the solar farm effect the sub-basin draining to the Starta Brook and the northwestern wetland/watercourse system?</p>	<ul style="list-style-type: none">The SWPPP describes the pre and post development analysis for this project. This project will provide a net reduction in impervious area, leading to a decrease in stormwater runoff.



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Comment Letters Provided by the Village of Briarcliff Manor	YSG/Briarcliff Solar LLC Response
7) Lastly there is a concern, the solar panels replacing vegetated areas may have an impact on the storm water quality and quantity. Study had shown solar farms generate thermal impact on storm water runoff caused by the hot surfaces of solar panels during summer months. How the stormwater will be cooled off before it reaches the watercourse areas? The memorandum drafted by Jim Taravella, P.E., on the Solar Farm Heat Island confirms the solar array increases the surrounding air temperature. Due to the dark color of the panels, the surface is hotter than the surrounding landscape; therefore, during the summer time, the storm water runoff draining from their surface becomes a source of thermal pollution to the receiving streams.	<ul style="list-style-type: none">• Briarcliff Solar requested a copy of the study referenced in this comment. Lauren Gualdino, of the Village, forwarded the following response via email from Ms. Moch (the email and printed copies of the articles are included with this submission): <i>"We had a discussion with Mike Nowicki about this. They have provided a study which concluded the temperatures over the solar farm is a couple or a few degree higher than the surrounding environment. This create a heat island effect so when the panels are generating/reflecting the solar heat, the heat is passed on storm water when flows over the surfaces. Here is a good reference: https://www.nature.com/articles/srep35070</i> <i>The same solar farm also came under scrutiny when an increasing number of bird deaths were reported on its premises. Many of their wings had been melted or burned off by heat from the solar farm's mirrors. check:https://sciencing.com/effects-solar-power-farms-environment-13547.html"</i>• The first article, "The Photovoltaic Heat Island Effect: Larger solar power plants increase local temperatures", was prepared by the University of Arizona. This article compares the ground temperature of bare ground below a solar installation with a vegetated landscape proximate to the site. The study makes it clear on page 2 that "<i>PV panels also allow some light energy to pass, which, again, in unvegetated soils will lead to greater heat absorption.</i>" No comparison was done with vegetated soils. The proposed Briarcliff Manor solar project will be vegetated and will not have bare earth beneath the panels.• The second article, "Effects of Solar Power Farms on the Environment", was written by David Laine. This article does reference avian wildlife being affected by the Ivanpah Solar Generating System in California's Mojave Desert. Unlike the proposed Briarcliff Manor solar farm, Ivanpah is not a photovoltaic solar farm. Ivanpah is a concentrated solar thermal plant. This type of facility uses mirrors to focus sunlight on a central tower. The receivers on the tower then generate steam to drive steam turbines. These two types of solar farms are not analogous with one another and have vastly different impacts as the article you shared illustrates.• <u>We have attached a response letter from our environmental consultant regarding your stormwater runoff concern.</u>
8) New sources of renewable energy are crucial in combating the climate change and reducing the generation of greenhouse gases, but doing it at such high cost to the environment may not be the right move. When considering over twenty acres of lost forested cover, compromised slope protection and impacts to the health of the wetlands and watercourses, the environmental damage outweigh the benefits. The applicant should consider a different site for this project. A site which will reclaim a disturbed soils and/or contaminated area.	<ul style="list-style-type: none">• The proposed development is an approved use within the zoning district. To ensure that there are no adverse effects to the environment Briarcliff Solar has been diligent in adhering to local, state, and federal laws and review processes for this project. This site was selected after an exhaustive search of suitable locations. The project is being proposed on a site that has been previously disturbed with an existing building, that if left to decay will provide a greater risk to the environment.
9) The amount of submitted material is overwhelming. The submission lacks consistency and it will be difficult for board members to digest. It is recommended a comprehensive summary of the project and reports is provided which offers the most current revisions and points out the most important elements.	<ul style="list-style-type: none">• The project booklet provides a summary of the project. In the interest of saving the Board of Trustees time, only revised portions of the project booklet have been resubmitted.• A revised fully compiled project book can be provided upon request, however due to its size and in the interest of saving paper, we recommend that the compiled book be provided electronically.