



VIA FEDEX
December 27, 2021

Town of Alfred
Attention: Janice Burdick
Town Clerk
Box 230
6340 Shaw Road
Alfred Station, NY 14803
town.alfred@gmail.com

Re: Request for Additional Information – Special Use Permit and Site Plan Review Application
Proposed 5568 Jericho Hill Road Solar Farm Project (Third Review)
Town of Alfred, Allegany County, New York

Dear Ms. Burdick:

At the Town of Alfred Town Board meeting on Thursday, December 09, 2021, and through correspondence received after the meeting, the Town Board has requested additional information on the proposed Jericho Hill Road Solar Project. Comments received from the Town Board in their correspondence dated December 08, 2021 are included below, along with our responses:

Memorandum dated December 08, 2021:

1. SEQR Determination

- a.) *"The SEQR review clock is requiring a determination of significance (environmental impact statement) which is slated for this coming December Town Board Meeting. There has been significant review and resolution of several identified issues and questions regarding the 5 MW Solar Array proposal. There is one critical issue (Impacts from stormwater runoff) which has not been satisfactorily addressed and reviewers are not in agreement with the SEQR Forms part 1 and 2 and 3 which conclude there will be minimum impact from stormwater runoff. The applicant choosing of Scenario 1, results in dismissal of responsibility to insure stormwater impact mitigation post construction and for the life of the facility. Careful evaluation has identified numerous instances where the Stormwater Management SWPPP for the project, as proposed, is faulty. The project by definition is indeed subject to classification under Scenario 2 where more intensive analysis and actual design of measures are required in the SWPPP plan to insure safe conveyance of stormwater not only during but post construction."*

"It is therefore my recommendation that the SEQR Determination of Significance be that of a Conditioned Negative Declaration"

"The primary Condition being that the Applicant comply with DEC Scenario 2 for development of a SWPPP covering during and post construction management of erosion and stormwater runoff from the site in accordance with the NYS Stormwater Management Design Manual, dated January 2015."



“The SEQR forms, summary conclusions and resolution should be updated and edited to accurately reflect the identified concerns and conditions under SEQR.”

Response:

- a.) As set forth in the NYSDEC Solar Panel Construction Stormwater Permitting/SWPPP Guidance, memo dated April, 8 2018. Solar panel projects that fall under Scenario 1 will only need to address erosion and sediment controls. Per Scenario 1, the following project must meet the guidelines stated below:
- 1.) Solar panels are constructed on post or rack systems and elevated off the ground surface.
 - 2.) The panels are spaced apart so that rain water can flow off the down gradient side of the panel and continue as sheet flow across the ground surface.
 - 3.) For solar panels constructed on slopes, the individual rows of solar panels are generally installed along the contour so rain water sheet flows down slope.
 - 4.) The ground surface below the panels consist of a well-established vegetative cover (see “Final Stabilization” definition in Appendix A of the CGP).
 - 5.) The project does not include the construction of any traditional impervious areas (i.e. buildings, substation pads, gravel access roads or parking areas, etc.)
 - 6.) Construction of the solar panels will not alter the hydrology from pre-to-post development conditions (see Appendix A of the CGP, for definition of “Alter the hydrology...”). Note: The design professional shall perform the necessary site assessment/hydrology analysis to make this determination.
- For the proposed Jericho Hill Road Solar Farm Project, all solar panels will be installed on posts driven into the ground. Although tracker arrays are proposed for this project, the modules will have a minimum clearance of 3 feet from the ground. In addition, the racking system will be installed with a clearance of 9 feet from the ground. Please refer to sheet C014 of the plan set for detail.
 - Each row of solar panels will be spaced twenty-seven (27) feet apart.
 - The drainage area for the project site has been categorized into three sub areas. All the panels will be located in the 2 sub areas that drain northwest as it does in pre-development conditions. Within these 2 sub areas, the panels are oriented relatively parallel. Although the tracker modules may orient east, in which the drip edge of the panels will face east, runoff will nonetheless drain west via sheet flow in a manner similar to that of pre-existing conditions. In addition, as stated in our previous response letter, 3 foot wide level spreaders will be installed to alleviate erosion concerns and reduce the time of concentration while also providing infiltration properties. However, the level spreaders will not be installed along the downslope edge of each row of panels. The level spreaders will instead be installed parallel with the existing contours at intervals of 50 feet. After further analysis, we believe this layout of the level spreaders will provide a more effective means to maintain sheet flow.
 - Existing ground below and between the solar panels will not be disturbed, excluding activities related to post driving operations. We acknowledge that ground disturbance will occur within the area of proposed tree clearing. However, final site stabilization will be completed following land clearing operations and therefore, sufficient vegetative cover will be established and maintained beneath all areas of proposed panels.
 - Although a majority of the project does not propose the construction of traditional impervious areas, a 791 SQ. FT. concrete equipment pad will be installed on site. The SWPPP for this project will propose the use of a grass filter strip to address the need for water quality treatment caused



by the impervious surface. As noted by LaBella in their previous comment letter dated November 23, 2021, the use of a grass filter strip is an appropriate technique. The limited use pervious gravel has been approved by the NYSDEC as a pervious surface, and therefore is not counted as impervious surface.

- Per the NYSDEC, altering the hydrology from pre to post-development conditions signifies that the post development peak flow rate has increased by more than 5% from the pre-developed conditions. The post development model has been revised to include the previously discussed driveway extension. Despite the additional driveway section, our HydroCAD analysis model has indicated no such increase in post-development peak flow rates as shown below:

Table I – Existing and Proposed Peak Discharge for the 1-year Storm (cfs)

Drainage Area	1 yr Design Storm Discharge	
	NY Alfred I, LLC. Solar Farm	
	Existing	Proposed
Existing Link DP-1 Proposed Link DP-1	11.30	9.22
Existing Link DP-2 Proposed Link DP-2	11.68	12.83
Existing Link DP-3 Proposed Link DP-3	9.91	9.91
Existing DA-A	11.30	-
Existing DA-B	11.68	-
Existing DA-C	9.91	-
Proposed DA-1	-	9.22
Proposed DA-2	-	12.83
Proposed DA-3	-	9.91
TOTAL DP	32.89	31.96

Table II – Existing and Proposed Peak Discharge for the 10-year Storm (cfs)

Drainage Area	10 yr Design Storm Discharge	
	NY Alfred I, LLC. Solar Farm	
	Existing	Proposed
Existing Link DP-1 Proposed Link DP-1	37.38	30.51
Existing Link DP-2 Proposed Link DP-2	42.00	45.96
Existing Link DP-3 Proposed Link DP-3	37.09	37.09
Existing DA-A	37.38	-
Existing DA-B	42.00	-
Existing DA-C	37.09	-
Proposed DA-1	-	30.51
Proposed DA-2	-	45.96
Proposed DA-3	-	37.09
TOTAL DP	116.47	113.56



Table III – Existing and Proposed Peak Discharge for the 100-year Storm (cfs)

Drainage Area	100 yr Design Storm Discharge	
	NY Alfred I, LLC. Solar Farm	
	Existing	Proposed
Existing Link DP-1 Proposed Link DP-1	99.25	80.99
Existing Link DP-2 Proposed Link DP-2	116.50	127.06
Existing Link DP-3 Proposed Link DP-3	104.67	104.67
Existing DA-A	99.25	-
Existing DA-B	116.50	-
Existing DA-C	104.6	-
Proposed DA-1	-	80.99
Proposed DA-2	-	127.06
Proposed DA-3	-	104.67
TOTAL DP	320.42	312.72

As depicted in the above tables, the post development peak flow rates for each design storm will decrease after this project is completed. The Jericho Hill Solar Farm project has adhered to every parameter set forth under Scenario 1, and therefore, the need for water quantity controls will not be necessary. Please refer to the enclosed NYSDEC Solar Panel Construction Stormwater Permitting/SWPPP Guidance, memo dated April, 8 2018, for further detail on the listed criteria under Scenario 2. In addition, the updated post-development HydroCAD report has been attached for further reference.

HydroCAD 10.0 by HydroCAD Software Solutions LLC was used to model the pre and post-development conditions for the Jericho Hill Solar Farm Project. HydroCAD is a computer aided design system used for modeling hydrology and hydraulics of stormwater runoff. The tools and calculations within HydroCAD is based on the TR-55 method, which is issued by the USDA Soil Conservation Service. The parameters required to calculate stormwater runoff are area, curve number, and time of concentration. Each drainage area is evaluated using the guidelines described in USDA Soil Conservation Service's TR-55 to determine the curve number and time of concentration. The runoff curve number (CN) is based on a weighted average of ground cover and soil type. Soil type data is gathered through the Web Soil Survey mapper, issued by the USDA Natural Resources Conservation Service. CN values for specific locations are determined from the tables presented in TR-55. Time of concentration (Tc) represents the amount of time it takes for runoff to travel from the hydraulically most distant point of the watershed to the point of analysis. Surface roughness, slope, channel shape and flow patterns are factors that affect the time of concentration. Stormwater runoff flows through the drainage area as sheet flow, shallow concentrated flow, open channel flow, or concentrated flow (such as in storm sewers). The figures and formulas in TR-55 are employed to compute travel times for sheet flow and shallow concentrated flow. The following data is then analyzed within HydroCAD to calculate the stormwater runoff volume and peak discharge rates. The TR-55 is an approved method of calculation according to Chapter 4 of the NYS Storm Water Design Manual, dated January 2015. Please refer to the enclosed TR-55 manual for further detail.



Further concerns were expressed at the December 09, 2021 Town Board meeting with respect to the structural integrity of the proposed limited use pervious gravel driveway and the extension of the proposed driveway to provide access to within 150 feet of all parts of the solar site. To help alleviate these concerns, the proposed driveway will extend approximately 626 feet east towards the southeast corner of the perimeter fence. A turnaround section and a access gate with Knox box for emergency vehicle access has also been added to the plans.

Coordination was established with Presto Geosystems to gather further information regarding the load capacity of the proposed limited use pervious gravel driveway. An associate of Presto Geosystems, Cory Schneider – Business Development Manager, has indicated that the proposed pervious gravel system will be capable in supporting a live load of 75,000 lbs. In addition, as suggested by Presto Geosystems, the standard Geogrid will be replaced with an enhanced woven geotextile (HP270 or equivalent). The enhanced woven geotextile will provide equal strength to that of the Geogrid, while also providing greater separation between fill materials. The separation function will allow for easier movement of water and will ensure the driveway maintains its thickness, service life, and long-term strength. To further ensure the driveway maintains its structural integrity over its service life, the proposed driveway will only be exposed to such capacity during emergency situations and is not subject to repeated excessive loads from vehicles of that specification. Access to the site for regular maintenance will be accomplished with much smaller vehicles less than 75,000 lbs.

In addition, we have recently received the NOI acknowledgment letter from the DEC. The SWPPP has been revised to include the NOI acknowledgement letter.

Please feel free to contact me at 518-588-8270 or via email at dplante@bergmannpc.com in the event you have questions or need additional information with respect to this Project.

Sincerely,

David J. Plante, AICP CEP
Energy + Environment Practice Leader, BERGMANN

Cc: Peter Dolgos, Alyssa Nielsen, Dan Compitello (DRS – New York, NY)
Eric Redding, PE, Kathleen Connolly (Bergmann)
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Sean Grasby (Town of Alfred Code Enforcement Officer)
Kathy Spencer (LaBella)