



January 29, 2024

Chairman Jim Hoag

Town of Hoosick Zoning Board of Appeals
New York State Armory
80 Church Street
Hoosick Falls, NY 12090

Regarding: 5MW AC Wilson Hill Solar Array

Dear Chairman Hoag and Members of the Board,

Enclosed herewith are the following items related to the 5MW AC Wilson Hill Solar Array proposed by Wilson Hill Solar, LLC.:

- 1.) Seven (7) Copies of a Revised Plan Set
- 2.) Seven (7) Copies of a Revised SWPPP
- 3.) Seven (7) Copies of a Revised Visual Impact Analysis
- 4.) Seven (7) Copies of the Visual Analysis
- 5.) Seven (7) Copies of the Revised O&M Plan
- 6.) Seven (7) Copies of the Highway Department Memo
- 7.) Seven (7) Copies of the Powerpoint Presentation
- 8.) Seven (7) Copies of the Revised FEAF

The Environmental Design Partnership is in receipt of a comment Memorandum from the LaBerge Group, dated November 22, 2023, for the above referenced project. On behalf of the applicant, Wilson Hill Solar, LLC., we offer the following response **in bold** to comments:

SWPPP Section 1

1. Section 1.II.A:

- a. A full description of what is proposed as “reclamation” should be provided in this section and throughout the documents.

Response: The definition of “reclamation” has been included within this section. Reclamation is defined as “reclamation during construction will consist of all activities listed in Section 1.III.A.1 for temporary actions. Permanent reclamation activities for the laydown area of the solar array shall follow the NYSDEC Deep-Ripping and Decompaction April 2008 guidance.”

- b. If the proposed reclamation is to be soil restoration in accordance with the NYSDEC Stormwater Design Manual (Design Manual), then the SWPPP should include, as an appendix, the NYSDEC Deep-Ripping and Decompaction April 2008 guidance.

Response: Soil restoration will take place in the construction laydown area, and, in the location of the proposed pervious access road. The NYSDEC Deep-Ripping and Decompaction April 2008 guidance has been included in Section 2 of the SWPPP.

- c. Each phase of construction and associated sequence of construction should include the

required “reclamation” task.

Response: Section 1.III.A.4. has been revised to include specific construction phasing sequences including sequence k) “Follow NYSDEC guidance included in Section 2 to reclaim all soils that have been compacted due to heavy construction laydown and the temporary access road outside of solar array. Final stabilization is defined as the completion of all soil disturbance activities with the phase area having perennial vegetative cover with a density of eighty (80) percent, or other equivalent stabilization measures such as permanent landscape mulches, rock rip-rap or washed/crushed stone.”

- d. Based upon our experience overseeing SWPPP compliance on multiple solar farm construction projects, we have observed that reclamation of soils, such as the decompaction of soils to restore the porosity and permeability and improve the infiltration rates of soils that were affected during construction/earth disturbances that resulted in compaction of the soil, have not been implemented. Project constructors have either not implemented the required restoration or argued that it is too difficult to perform with the constructed solar arrays and underground infrastructure in place. An additional argument that has been presented is that the temporarily stabilized areas are sufficient.

Therefore, we recommend that the restoration of the soil not be proposed for the project and that, in accordance with the Design Manual Chapter 5, Section 5.1 p.5-18, the design increases the calculated WQv and changes by one level the post-construction hydrologic soil group (HSG) to a less permeable group than the original condition. This is applied to all volumetric and discharge rate control computations.

Should the applicant not select this alternative as described above, the Town should require the applicant to provide additional construction oversight and sufficient construction surety to ensure that all areas will receive decompaction and soil restoration in accordance with the plans.

Response: Soil within the solar array shall not be reclaimed per NYSDEC guidance due to feasibility challenges. As was discussed, the post-development ground cover has been conservatively modelled to ensure the proposed stormwater management areas are designed to accommodate incidental soil compaction during construction. Soils within the laydown area and the temporary access road that are compacted due to construction activities shall be reclaimed following the Deep-Ripping and Decompaction April 2008 guidance as described in Section 1.II.A.

2. Section 1.II.D: See the above comment and revise this section if the above recommendation is implemented by the project.

Response: Section 1.II.D. has been revised to include updated curve numbers.

3. Section 1.II.E: Indicate that the receiving waters are a minor tributary to the middle Hoosic River.

Response: Section 1.II.E has been revised to include the minor tributary to the Hoosic River.

4. Section 1.II.G: The response from NYSDEC regarding endangered or threatened species should be provided for review, included in the SWPPP appendices, and the project revised if an impact will occur.

Response: Comment noted.

5. Section 1.III.A: Include the NYS Ag & Markets Requirements and the specifications for agricultural soil stockpile areas, and indicate on the documents the locations of the stockpiles that will be used to restore the land upon decommissioning.

Response: NYS Ag and Markets Requirements for soil stockpiling has been included in the SWPPP document as Section 1.III.3.

6. Section 1.III.A.1.e: "Topsoiling" should be confirmed to be in compliance with the soil restoration per NYS Stormwater Management Design Manual Table 5.3 for Heavy Traffic Areas and per the NYSDEC Deep-Ripping and Decompaction April 2008 Manual, or revised accordingly. The section may be more appropriately entitled Deep Ripping and Decompaction. This final best management practice should be implemented to mitigate the impacts of repeated construction traffic compaction of soils in between arrays and other construction phase-traveled ways.

Response: Section 1.III.A.1.e has been changed to Soil Restoration and has been revised to include "For heavy construction staging areas outside of the solar array and the temporary road, follow the NYSDEC Deep Ripping and Decompaction April 2008 guidance."

7. Section 1.III.3: **(Section 1.III.3. has been revised to Section 1.III.4.)**
 - a. Include as one of the first activities, the delineation of the limits of disturbance for each project section and development phase.

Response: In Section 1.III.A.4. the first activity has been revised to state "Conduct a delineation of the limits of disturbance for each project phase."

- b. Erosion and sediment control plans, as well as all other plans, should indicate the limits of disturbance.

Response: All plans have been revised to show overall limits of disturbance.

- c. Note that the project shall be constructed in phases not to exceed 5 acres and that each phase shall be completed prior to the commencement of the next phase of the project.

Response: A comment has been included under Section 1.III.A.4.a. that states "The project shall be constructed in phases not to exceed 5 acres as shown on the phasing plans. Each phase shall be completed and stabilized before the commencement of the next phase."

- d. The sequence of construction should include the "reclamation" of soils that are between arrays and all other construction traffic ways and staging areas. Note that a phase is not complete until the restoration is complete and the area is protected from further activity by other phases of work.

Response: The soil between the solar panels shall not be reclaimed due to feasibility challenges. The laydown area and the temporary access road shall be reclaimed following the NYSDEC guidance.

- e. The preceding comments are applicable to other SWPPP documents that include various project plans.

Response: Comment noted.

- f. Revise Section 1.III.3.f to include permit wording to require soil stabilization “In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased” (Part II.D.3.b.).

Response: Section 1.III.4.g. has been revised to include the language in the above comment.

8. Section V.A.1.a: Seeding and planting should be indicated as a temporary practice to be applied prior to the implementation of deep-ripping, decompaction, and permanent revegetation.

Response: Deep-ripping and decompaction activities have been included in Section V.A.1.a. after temporary seeding and planting activities.

9. Section V.A.1: Add a section on final stabilization that includes restoration of gravel roads to include the specified top materials per the details, cleaning out of roadside ditches, repair of any erosion areas, and the application of additional permanent erosion controls that may be needed upon completion of the construction, deep-ripping and decompaction, permanent revegetation, and removal of any sediment from stormwater management systems.

Response: Section 1.V.A.1.c has been added to include the items listed above.

10. Section 1.V: This section should be expanded to include the removal criteria for each temporary erosion and sediment control practice to be utilized.

Response: Section 1.V.A.1.c has been revised to include “All erosion and sediment control measures shall remain in place until 80% vegetative cover has been achieved. Any resulting disturbance from said removal to be seeded prior to demobilization.”

11. Section 1.VI: Add a section on soil restoration that includes all areas that have experienced construction traffic within the solar farm, regardless of whether or not they have been graded, are to be considered as “heavy traffic areas” and thus all areas that have experienced construction disturbance are required to receive “full soil restoration” (decompaction and compost enhancement).

Response: Due to feasibility challenges the soil that is compacted within the solar array shall not be de-compacted. A higher curve number has been used for the design of stormwater treatment and attenuation practices. Areas that are considered as “heavy traffic areas” outside of the solar array (staging and laydown area, and the temporary access road) shall receive “full soil restoration” per NYSDEC Deep-Ripping and De-compaction April 2008. Section 1.VI.A.5. has been added to the document which states “The laydown area and temporary access road outside of the solar array is required to receive “full soil restoration” according to NYSDEC Deep-Ripping and De-compaction April 2008.”

12. Section 1.VII.B.3.d: Revise to include the protection of groundwater in addition to stormwater.

Response: Section 1.VII.B.3.d. has been revised to include protection of groundwater.

13. The full set of plans for the project should be included in the SWPPP in addition to the stand-alone set.

Response: A full set of revised plans has been included in the SWPPP.

14. Disturbance Phasing Plan:

- a. For each phase's description of work include, as the first item, the field delineation of the limits of work for the phase.

Response: Each phase description of work now includes a field delineation of the limits of work.

- b. To avoid potential work implementation confusion for Phases 1, 2, and 3, do not show the solar array layouts as they are not part of the phased work.

Response: The solar panels have been removed from Phases 1, 2, and 3.

- c. Although graphically indicated for Phase 4, note that the soil disturbance shall be limited to the area between the arrays.

Response: A note has been added to Phase 4 that states "Soil disturbance shall be limited to area between panels."

- d. Note that areas disturbed outside of the designated limits of disturbance for Phase 4 shall be immediately stabilized to avoid exceeding the limit of 5 acres of disturbance at any one time.

Response: A note has been added to Phase 4 that states "Disturbance outside limits of work shown shall be immediately stabilized."

- e. Add the requirement to stabilize the area under and between arrays as soon as work is completed on an array.

Response: A note has been added to Phase 4 that states "Soil disturbance shall be continuously stabilized between and under solar panels as work is completed on a panel."

Erosion and Sediment Control Plan (C-300, C-301, C-302, C-303, C-304)

15. To enable a complete review, additional plans should be provided that show:

- a. The proposed erosion and sediment control types and placements, surface improvements, and grading without the image overlay of the solar arrays; and
b. A grading and drainage plan with erosion controls noted without the use of hatching/shading symbols and without the image overlay of the solar arrays.

Response: Plans have been included in revised SWPPP.

16. All plans should indicate the limits of disturbance.

Response: All plans have been revised to show the overall limits of disturbance.

17. Indicate the locations of semi-permanent topsoil stockpiles placed in accordance with NYS Ag and Markets recommendations for future use in decommissioning and restoration of the lands.

Response: Locations of semi-permanent topsoil stockpiles are called out on the Erosion and Sediment Control Sheets.

18. Provide temporary sediment control measures to protect the permanent erosion control practices: overland flow dispersion devices and gravel diaphragms. Include the description and implementation in the sequence of construction notes.

Response: Section 1.III.A.3. and the Sequence of Construction Activities has been revised to include the installation of overland flow devices and compost filter socks to protect them. Additionally, the overland flow dispersion devices will be wrapped with filter fabric overtop to prevent sediment migration; this will be removed once 80% permanent vegetative cover has been achieved.

19. Compost filter socks:

- a. Details should include the requirement for placement of filter media on the disturbed area side of the compost sock;

Response: The Filter Sock detail has been revised to include filter media on the disturbed area of the sock.

- b. Details should indicate the maximum slope length above a filter sock based upon % slope in accordance with the NYSDEC Standards for Erosion and Sediment Control;

Response: Maximum slope length and fence length have been included on Detail 8 Sheet C-404.

- c. Indicate the maximum spacing of swale checks based upon the swale slopes and stormwater flow and velocity; and

Response: Maximum spacing has been included on the revised Erosion and Sediment Control Plans as callouts.

- d. For the 12" filter sock detail indicate that the compost filter socks shall be anchored to the ground with 2" x 2" wooden stakes driven 12" into the soil on 10-foot centers on the centerline of the sock.

Response: The Filter Sock detail has been revised to include a 2" x 2" wooden stakes driven 12" into the soil on 10-foot centers on the centerline of the sock.

20. Include a detail for the silt fence for the installation proposed around soil stockpile areas and for use in other areas since it is noted as an option for the use of the compost sock installations.

Response: A Silt Fence detail has been included on Sheet C-404.

21. Concrete washout detail should require the placement of signs to direct drivers to the facility after their load is discharged.

Response: A sign has been added to the Concrete Washout detail to direct drivers to the facility.

22. For the proposed sediment trap that may or may not be used, but must be planned for accordingly, indicate the following required information on the plans in a summary table format:
- Trap number;
 - The type of trap (I. Pipe Outlet Trap, II. Stone Outlet Sediment Trap, or III. Compost Filter Sock Sediment Trap);
 - The drainage area;
 - The storage required;
 - The storage provided;
 - The outlet length or pipe sizes;
 - The storage depth below the outlet or clean out elevation; and
 - The embankment height and elevation.

Response: The above information has been included on the revised plans as callouts on the Erosion and Sediment Control Plans

23. Erosion and Sediment Control and Stabilization Measures, Maintenance, and Inspection Procedures Notes: Indicate the number of days in Note 2.B.

Response: Note 2.B on sheet C-404 has been updated to 7 days per Part 2.D.3.b in the NYSDEC General Permit 0-20-001.

24. Sequence of Construction Activity Notes:
- Indicate the first activity as the delineation of the limits of disturbance for the entire site and for each phase of the work.

Response: The first activity has been revised to include “Field delineation of the limits of disturbance for each phase per the Phasing Plans and the overall limits of disturbance.”

- Include a reference to the phasing plans for the further construction sequencing that is required.

Response: A note stating, “Reference Phasing Plans for further construction sequencing as needed” has been included in the Sequence of Construction Activity Notes.

- Include the installation of temporary sediment control measures to protect:
 - The permanent erosion control practices: overland flow dispersion devices and gravel diaphragms; and

Response: Activity 7 has been revised to state “Additional erosion and sediment control measures shall be placed as overland dispersion devices are installed.

- Limited Use Pervious Access. The access should be installed last to avoid impacting the design's intended performance of the road from sedimentation and compaction from construction traffic.

Response: Activity 9 has been revised to include the construction of the pervious maintenance access road.

SWPPP Section 6: Stormwater Management Narrative (Design)

25. Indicate that Drainage Map B (Figure 2) and C (Figure 3) exhibit the design analysis points: Off #1, 2, 3, and 4.

Response: Design analysis points have been labeled on the Existing Drainage and Proposed Drainage Maps.

26. Three (3) additional analysis points for pre- and post-development should be added in order to enable a review of the proposed mitigation. These points are as follows:
- At a point at the property line that is at the flow path of proposed discharge from the stormwater attenuation area and bio-retention area at road Sta. 7+50;
 - At a point at the property line that is at the flow path of proposed discharge from the stormwater attenuation area at road Sta. 10+00; and
 - At a point at the property line that is at the confluence of flow paths of proposed discharges from the bio-retention area at road Sta. 19+50 and the stormwater attenuation/bio-retention areas at road Sta. 21+00.

Response: Additional design points have been included on the existing and proposed drainage maps.

27. Provide the sub-watersheds used in the design of each Stormwater Management Practice (SMP).

Response: Subcatchments have been provided for all stormwater practices.

28. Table 1: Pre-Development Runoff Rates should be revised to include the additional analysis points.

Response: Pre-development analysis now included additional design points.

29. A post-development mitigated runoff table similar to Table 1: Pre-Development Runoff Rates should be added to the report.

Response: Table 4 has been included in the Stormwater Narrative.

30. See the review comment "d" for SWPPP Section 1.II.A. above (soil restoration).

Response: HydroCAD model has been revised as per Comment 1d.

31. Provide the driveway culvert sizing calculations.

Response: The proposed 18" HDPE culvert matches the size of the down stream culvert at the existing gravel access road.

32. Provide the swale sizing and ground cover design for the anticipated discharge and velocity of flows.

Response: All critical swales have been included in the HydroCAD analysis. Additionally, swales with high flow rates will include check dams to slow the velocity of the runoff.

33. Water Quality (WQv) worksheets:

- Bioretention Designs: The filter time- t_f should be revised to the 48-hour maximum in accordance with the Design Manual and the designs revised.

Response: The Bioretention sheets have been revised.

- b. WQv Calculations:
 - i. Include the HydroCAD catchment number in addition to those shown.

Response: Catchment numbers have been added to the GI Worksheets.

- ii. Catchment 3, as shown, includes catchment S208 and should be revised to include S204 as WQv is based upon the total tributary area.

Response: Subcatchment 204 does not flow into 208.

- 34. Include the DEC NOI acknowledgement letter in the SWPPP report.

Response: Comment noted. A NYSDEC NOI Acknowledgement letter shall be included in the SWPPP once it is acquired.

Civil Permit Plans

- 35. The full set of plans for the project should include the Disturbance Phasing Plan that was provided in the SWPPP revised per this review.

Response: Comment noted. Phasing Plans have been included in the revised Plan Set.

- 36. The Stormwater Management Practices should provide unique plan identification labels to allow for reference to the stormwater management report and the details provided.

Response: The Stormwater Management Practices have been labeled on the Grading Plans similar to the labels included within the stormwater analysis.

- 37. Stormwater Management Facility Signs:
 - a. Indicate the locations of the signs on the plans.

Response: All Stormwater Management Area Notification Signs have been labeled with callouts on the Layout Plans.

- b. Include the SMP practice type in the construction detail with the description to match those provided in the Stormwater Management Design Manual (i.e., Wet Pond P-2; Pocket Pond P-5; Bio-Retention F-5).

Response: The Stormwater Management Facility Sign Detail has been revised to include the Stormwater Management Design Manual descriptions.

- 38. Provide additional details for the construction of the wet pond (HydroCAD Analysis Pond number P-2) that includes the required safety bench, aquatic bench, and warning signs that must be posted.

Response: The area is provided to attenuate high velocity flows from the Wet Pond outlet to safely route the runoff across the access road to the adjacent slope. The depression area is not designed to treat stormwater or hold water for any significant amount of time. The depression area has been updated to show side slopes with a 25% grade to eliminate the need for a safety bench. No aquatic bench is required as the depression area is not proposed to permanently hold water.

39. Provide additional details for the construction of the pocket pond (HydroCAD Analysis Pond number P-5).

Response: The area is provided so that flows from the vegetated swale running along the access road can safely reach the opposite side of the road. The depression is to allow for a minimum cover of 1' over the outlet culvert. The depression is not designed to treat or significantly attenuate runoff for any amount time. The slopes for the depression area have been updated to a 25% grade.

40. The grading plans and the USDA NRCS soils report show that the proposed designs with excavations up to 17 feet will be in a gravelly loam with groundwater at 24". This being the case, deep-hole soil exploration/borings should be performed and geotechnical reports provided so that designs may be modified to allow construction for the conditions that will be encountered.

Response: Draft boring data was provided in September, 2023, which indicated groundwater was present in two borings; one at 8 feet and one at 19.5 feet below ground surface. Based on the locations of the borings; groundwater is not anticipated to be an issue.

41. The SMP designs should be revised with the anticipation that groundwater will be present at the proposed practices. SMPs may need impermeable liners and under-drainage systems depending upon the results of soil testing performed at each location.

Response: The Bioretention and Wet Pond Details have been updated to include a 30 mil plastic liner to separate the treatment practice from the groundwater and bedrock.

42. Provide permanent non-erosive outlets for concentrated runoff constructed to diffuse flow uniformly onto a stabilized area in the form of shallow, low-velocity, sheet flow. This should include stormwater management practice final outfalls to slope areas of the site. Include the designs in the stormwater report, and specify and provide construction details for:

- a. Flow diffusers where the ground slope at the outlet of the diffuser is less than 30% and the runoff will not re-concentrate after release; and

Response: Outlets of all stormwater management areas have been sized per Figure 3.16 in the NYS Standards and Specifications For Erosion and Sediment Control. Calculations can be provided upon request.

- b. Flow spreaders where sediment-free storm runoff can be released in sheet flow down a stabilized slope without causing erosion, where the area below the weir is uniform with a slope of 10% or less, and the runoff will not re-concentrate after release.

Response: Outlets of all stormwater management areas have been sized per Figure 3.16 in the NYS Standards and Specifications For Erosion and Sediment Control. Calculations can be provided upon request.

On behalf of the Applicant, we respectfully request to be placed on the next agenda of the Monday,

February 5th Zoning Board Meeting for continued Site Plan and Special Permit Review. If additional information is required, please contact our office at your earliest convenience and we await your response regarding the agenda schedule. Thank you.

Regards,

The Environmental Design Partnership, LLP



Benjamin Willson

Project Engineer

Cc: