



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

March 9, 2021

TO: Service List, dated February 8, 2021

FROM: Melanie Bachman, Executive Director *MAB*

RE: **PETITION NO. 1442** - SR Litchfield, LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 19.8-megawatt AC solar photovoltaic electric generating facility on 6 contiguous parcels located both east and west of Wilson Road south of the intersection with Litchfield Town Farm Road in Litchfield, Connecticut, and both east and west of Rossi Road, south of the intersection with Highland Avenue in Torrington, Connecticut, and associated electrical interconnection.

Comments have been received from the Connecticut Department of Energy and Environmental Protection, dated March 5, 2021. A copy of the comments is attached for your review.

MB/emr

c: Council Members



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March 5, 2021

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

RE: 19.8-MW Photovoltaic Generating Facility
SR Silicon Litchfield
Litchfield and Torrington, Connecticut
Petition No. 1442

Dear Members of the Connecticut Siting Council:

Staff of this department have reviewed the above-referenced petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need will be required for the construction of a 19.8-MW photovoltaic generating facility at Town Farm, Wilson and Rossi Roads in Litchfield and Torrington. In addition, a field review of the site was conducted on February 26, 2021. Based on these efforts, the following comments are offered to the Council for your consideration in this proceeding.

As in other recent DEEP comments concerning photovoltaic generating facilities, we note that the construction of facilities such as that proposed in this petition will aid in the achievement of Connecticut's vision for a more affordable, cleaner, and more reliable energy future for the ratepayers of Connecticut. Bringing more zero carbon energy projects on line is instrumental in furthering this vision as these resources help diversify the regional fuel mix, and they aid in implementing Governor Lamont's Executive Order No. 3 that DEEP investigate pathways to achieve a 100% zero-carbon electric sector by 2040. Developing grid-scale renewables is also imperative to the state's success in achieving its statutory goal of reducing carbon emissions by 45% below 2001 levels by 2030 and by 80% below 2001 levels by 2050.

Natural Diversity Data Base

This project does not have a final determination letter from the DEEP Natural Diversity Data Base. The project sponsor has changed environmental consultants, replacing REMA with All Points Technology. Since we have not yet received a final report, we are unable to issue a final determination letter for the project.

On a related matter, the seasonal restriction for tree clearing as proposed in the petition to avoid impacts to red bats and hoary bats is not sufficient to protect those species. A tree clearing

restriction covering June and July is proposed in the petition. NDDB will specify a time-of-year restriction covering the period from June 1 to October 1 to protect those species.

Construction Stormwater Management

Silicon Ranch notes in the petition (P. 35) that they have filed a registration under DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (DEEP-WPED-GP-015). That filing was made on October 20, 2020. However, since the project has not submitted an NDDB final determination letter, it has been removed from the Stormwater permitting queue and is not being actively reviewed at this time.

According to page 45 of Appendix U, the Wetlands and Habitat Report, a minimum permanent wetland buffer of 25' will be maintained. As noted in the attached DEEP Stormwater guidance document of January 6, 2020, the Stormwater Program will generally look for wetland and watercourse buffers of 100' though smaller buffers may be allowable depending on the nature of the wetlands and the nature of the encroachment into the 100' buffer zone. A buffer width of 25' may be problematic. The discussion on page 45 on Appendix U also notes that there is at least one exception to the 25' buffer provision.

The petitioner should also be aware that, prior to initiating the construction of any engineered stormwater control measures, any proposed measures must be evaluated to determine if they may qualify as dams as defined by the Regulations of Connecticut State Agencies Sec. 22a-409-1(10), which may require a Dam Safety Construction Permit. A determination on the need for this permit may be requested by contacting the DEEP Dam Safety Program at DEEP.DamSafety@ct.gov.

Observations from the DEEP Site Review

The utility of the DEEP site review on February 26 was significantly limited by the snow cover which was close to one foot at the time. In particular, observations of the vernal pools and wetlands were not possible under those conditions. As noted in the petition, invasive species are common at many locations on the site, with bittersweet vines and multiflora rose well represented. The foremost area subject to visual impacts from the proposed facility would be the residences along Wimbledon Gate North, a development of fairly recent vintage on the eastern border of the proposed site. The view from observation point 3 (OP3) of Appendix Y, The Analysis of Visual Impacts, as depicted in that report benefitted from the specific location on Rossi Road from which the analysis was done. The homes along Rossi Road just north of OP3 constitute the other grouping of residences, other than the Wimbledon Gate North development, which would have significant views of the project. Locations just to the north of OP3 on Rossi Road, where homes are located along both sides of that street, would experience views of the solar facility to their east on the western-facing hillside.

Miscellaneous Petition Commentary

The petition states that each of the step-up transformers at the solar facility will use approximately 650 gallons of a renewable, biodegradable dielectric coolant. While this is a good choice in terms of minimizing any hazard from a leak or spill event, containment for releases is still required regardless of the type of transformer oil used. Thus, for each transformer,

containment equal to 110% of the fluid volume of the transformer must be provided to prevent the release of oil onto the site.

The visual analysis on page 17 of the petition characterizes the trees at the site as 45' tall, while discussion on page 23 says the typical hardwoods trees on the site were measured at 80 to 90 feet in height.

The property parcel numbers given on pages 8 and 9 of Appendix J, A Phase I Environmental Site Assessment, do not correspond with the property parcel numbers on pages 12 and 13 of that same report. The parcel descriptions for the East Central, Northwest, Southwest and Southeast parcels as given on pages 8 and 9 are correct but the property numbers given for them do not match those on the orthophotos on pages 12 and 13.

In the discussion of operations and maintenance procedures on page 20 and of emergency response procedures on page 21 of the petition, either Silicon Ranch or its third party contractors will monitor site operations and respond to emergency conditions at the site as needed. Does Silicon Ranch have other facilities in New England or New York within reasonable traveling distance for which they maintain a permanent regional presence? At a September 21, 2020 pre-application meeting with DEEP, Silicon Ranch indicated that they own and operate the facilities they develop. It would be informative to know what level of assets they would need to operate in the region before a permanent local presence would be established as opposed to relying on third party vendors.

DEEP endorses the provision of the retention of snag trees for potential future wildlife use, as discussed on pp. 33-34 of the petition, when doing necessary tree clearing.

Two statements made on page 41 of Appendix U, the Wetland and Habitat Report, seem to be in conflict. On the top of that page, the statement is made that "it is likely that both the hoary bat and the red bat utilize the site during the roosting season", while mid-way through that page in the Conclusion section, it is stated that "it is unlikely that any of the species found in the May 2017 letter from DEEP's NDDB occur or breed at the subject site". Red bat and hoary bat, both State Species of Special Concern, were two of the five species listed in the May 2017 preliminary NDDB review letter.

Thank you for the opportunity to review this petition and to submit these comments to the Council. Should you, other Council members or Council staff have any questions, please feel free to contact me at (860) 424-4110 or at frederick.riese@ct.gov.

Respectfully yours,



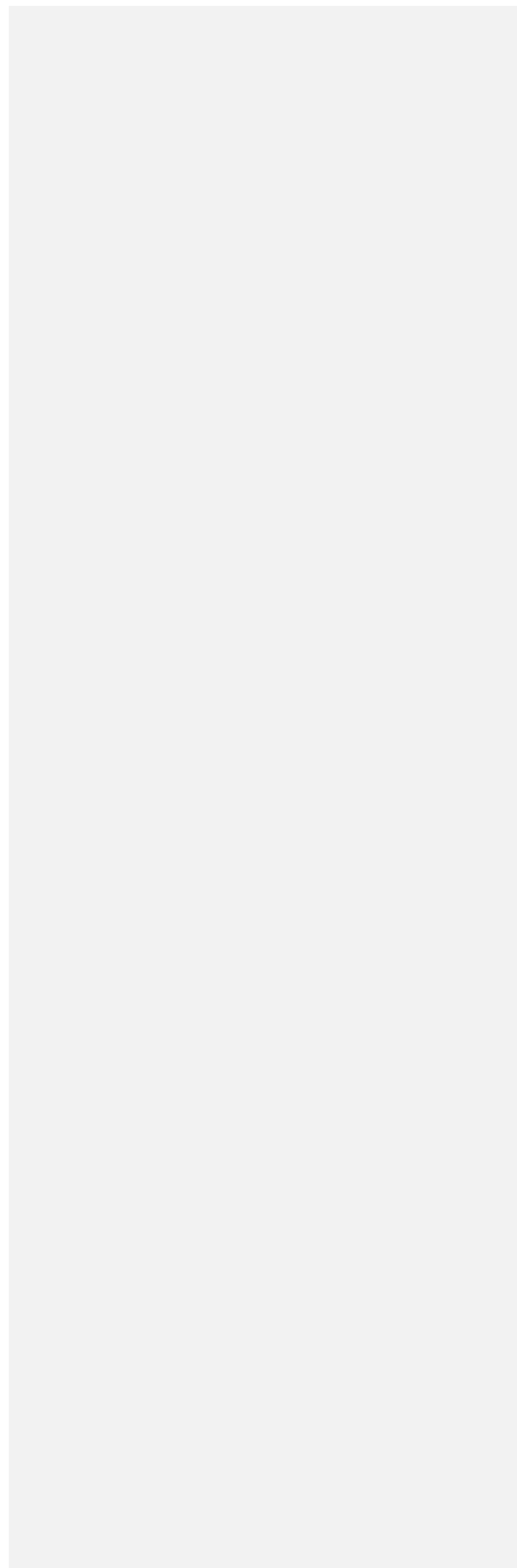
Frederick L. Riese
Senior Environmental Analyst

Petition No. 1442
SR Silicon Litchfield

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March 5, 2021

Attachments: (2)
cc: Commissioner Katie Dykes





**GUIDANCE REGARDING SOLAR ARRAYS
AND THE GENERAL PERMIT FOR THE
DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS FROM CONSTRUCTION
ACTIVITIES**

January 6, 2020

Solar development has expanded over the last several years as Connecticut and other states have invested in this important resource to further greenhouse gas emission reductions. The large amount of impervious surface inherent in the construction of a large-scale solar arrays is unlike most other construction activities regulated under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (“general permit”) and entails challenges not encountered in traditional development projects. If not properly managed through appropriate design and mitigation measures, stormwater discharged during and after the construction of solar arrays can be a significant source of pollution resulting from increased runoff, erosion, and sedimentation, which can adversely impact wetlands or other natural resources. Solar installations must be properly designed to assure soil stabilization, minimize soil disturbance and soil compaction. This includes ensuring that effective controls are put in place to manage the total runoff volume and velocity that can lead to the loss of topsoil, erosion and sediment discharges from disturbed areas and stormwater outlets, and erosion along downstream channels and streambanks. The ability to address such significant environmental problems during construction and post-construction becomes more difficult as site imperviousness increases.

The environmental objectives of the general permit that solar facilities must meet have not changed. What has changed are the design assumptions and application of stormwater management techniques and engineering principles and practices to meet those requirements, as well as the Department’s knowledge and experience with respect to the ability of different techniques and engineering practices to meet the underlying environmental requirements. The Department is obligated to apply its best understanding of management techniques and engineering practices and principles. At the same time, the Department strives to provide more predictability and transparency around its approaches to permitting solar facilities in order to promote environmental compliance and competitive solar development in the state.

To that end, DEEP is publishing this Guidance, available at www.ct.gov/deep/stormwater to assist the professionals engaged in designing and constructing solar array projects, both large and small, and to provide a more transparent understanding of how the Department is considering emerging issues and the manner of addressing them. The Guidance describes the Department’s expectations around how such professionals may ensure that any such project is designed and constructed in a manner that takes into account site conditions such as: the amount, frequency, intensity and duration of precipitation; soil types, topography, surficial geology, hydrology and natural resources; and any changes to such conditions resulting from site activities during and after construction to minimize erosion and sedimentation and to control stormwater discharges, including peak flowrates and total stormwater runoff volume and velocity. This guidance should also help facilitate the preparation and efficient review of a Stormwater Pollution Control Plan (Plan) submitted in support of an application for coverage under the general permit.

This guidance should not be confused with, and is not intended to contain, enforceable requirements. A professional may propose to design and construct a solar array in another manner. A design professional may decide, based on the particular conditions for a project or a site that the best technique or engineering practice is to deviate from this guidance. The Department is open to considering alternative approaches. To be approved, however, any proposal must address the issues noted in this Guidance as well as demonstrate compliance with the requirements of the general

permit. This guidance is provided for informational purposes only and is not meant to modify or replace any provision of the general permit or any applicable laws or regulation. In the event of a conflict between this guidance and the general permit or any applicable law or regulation, the permit or applicable law or regulation shall govern.

The Department notes that it has separately initiated a public comment process on the proposed Construction General Permit, which includes similar provisions described in this guidance. The final adoption of a new Construction General Permit will negate the need for this Guidance. Any questions about the applicability of this Guidance may be directed to Karen Allen at Karen.Allen@ct.gov.

Design and construction guidance

- (1) Roadways, gravel surfaces and transformer pads within the solar array are considered effective impervious cover for the purposes of calculating Water Quality Volume (WQV). In addition to these impervious surfaces, all solar panels in the array should also be considered effective impervious cover for the purposes of calculating the WQV if the proposed post-construction slopes at a site are equal to or greater than 15% or if the post-construction slopes at a site are less than 15% and the conditions in (a) – (e), inclusive, below have not been met:
 - (a) The vegetated area receiving runoff between rows of solar panels (see Figures 1 and 2, below) is equal to or greater than the average width of the row of solar panels draining to the vegetated area;
 - (b) Overall site conditions and solar panel configuration within the array are designed and constructed such that the runoff remains as sheet flow across the entire site;
 - (c) The following conditions are satisfied regarding the design of the post-construction slope of the site:
 - For slopes less than or equal to 5%, appropriate vegetation shall be established as indicated in Figure 1, below; and
 - for slopes greater than 5%, but less than 10%, practices including, but not limited to, the use of level spreaders, terraces or berms as described in Figure 2, below, shall be used to ensure long term sheet flow conditions; and
 - for sites with slopes greater than or equal to 8%, erosion control blankets or stump grindings or erosion control mix mulch or hydroseed with tackifier should be applied within 72 hours of final grading, or when a rainfall of 0.5 inches or greater is predicted within 24 hours, whichever time period is less; and
 - for slopes equal to or greater than 10% and less than 15%, the Plan includes specific engineered stormwater control measures with detailed specifications that are designed to provide permanent stabilization and non-erosive conveyance of runoff to the property line of the site or downgradient from the site.
 - (d) The solar panels should be designed and constructed in such a manner as to allow the growth of vegetation beneath and between the panels.
 - (e) A one-hundred (100) foot buffer should be maintained between any part of the solar array and any of the following: “wetland” as that term is defined in in Conn. Gen. Stat. § 22a-29, “wetlands” as defined in Conn. Gen. Stat. § 22a-38, or “waters” as defined in Conn. Gen. Stat. § 22a-423, which shall include vernal or intermittent waters. The buffer shall consist of undisturbed existing vegetation or native shrub plantings.
- (2) The lowest vertical clearance of the solar panels above the ground should not be greater than ten (10) feet. The panels should, however, be at an adequate height to support vegetative growth and maintenance beneath and between the panels. If the lowest vertical clearance of the solar panels above the ground is greater than ten (10) feet, non-vegetative control measures will be necessary to prevent/control erosion and scour along the drip line or otherwise provide energy dissipation from water running off the panels.

- (3) The Commissioner may require that a letter of credit be secured prior to undertaking construction activity, in circumstances where site conditions, scale of project or previous compliance issues present elevated risks associated with potential non-compliance. For previously permitted projects, the amount of the letter of credit has been established at \$15,000.00 per acre of disturbance. The wording of such letter of credit shall be as prescribed by the Commissioner. The Permittee should maintain such letter of credit in effect until the Commissioner notifies the permittee that the Notice of Termination, filed in compliance with Section 6 of the general permit has been accepted by the Commissioner.

Design requirements for post-construction stormwater management measures.

- (1) Post-construction stormwater control measures should be designed and constructed to provide permanent stabilization and non-erosive conveyance of runoff to the property line of the site or downgradient from the site.
- (2) Orientation of panels should be considered with respect to drainage pattern, flow concentration, drainage area and velocity (i.e. rows perpendicular to the contours may result in higher runoff and flow concentration).
- (3) The permittee should conduct a hydrologic analysis that:
 - (a) Evaluates 2, 25, 50 and 100-year storm post-construction stormwater flows; and
 - (b) Is based on site specific soil mapping to confirm soil types; and
 - (c) Is able to determine and confirm the infiltrative capacity of any stormwater management measures and, in addition, reflects a reduction of the Hydrologic Soil Group present on-site by one (1) step (e.g. soils of HSG B shall be considered HSG C) to account for the compaction of soils that results from extensive machinery traffic over the course of the construction of the array; and
 - (d) Is based on slope gradient, surveyed soil type (adjusted per subparagraph (c), above), infiltration rate, length of slope, occurrence of bedrock, and change in drainage patterns (see also page 23 at https://www.ct.gov/deep/lib/deep/Permits_and_Licenses/Land_Use_Permits/Inland_Water_Permits/IWRD_inst.pdf); and
 - (e) For an engineered stormwater management system, demonstrates no net increase in peak flows, erosive velocities or volumes, or adverse impacts to downstream properties.

Figure 1
Solar Panel Installation with Slopes $\leq 5\%$

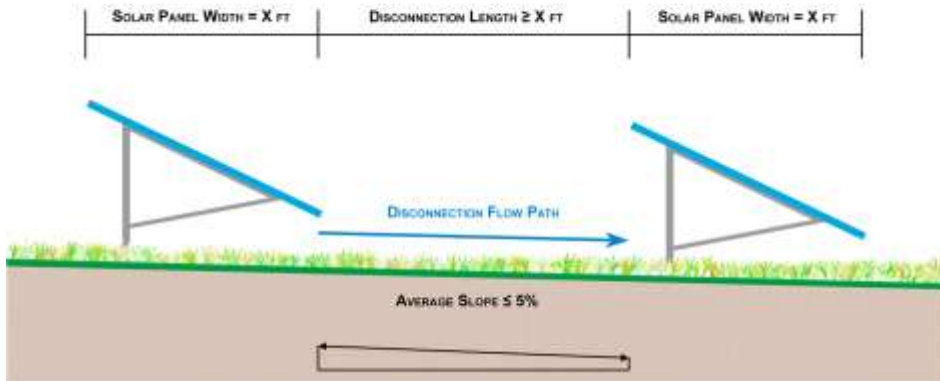
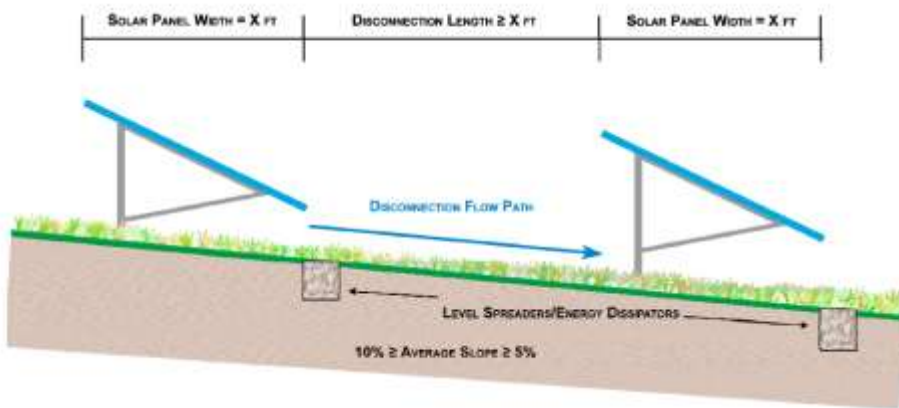


Figure 2
Solar Panel Installation with Slopes $> 5\%$ and $\leq 10\%$



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Source: Maryland Department of the Environment: Stormwater Design Guidance – Solar Panel Installations

Stormwater Management at Solar Farm Construction Projects September 8, 2017

Solar farms are on-the-ground installations of arrays of photovoltaic cell panels, supporting structures and related equipment for the production of electricity. As with other types of construction projects, the construction of solar farms can involve land clearing, grading, excavation, trenching, dewatering and similar activities that create land disturbances which potentially result in soil erosion and sediment discharges polluting wetlands, streams and other surface waters. Construction-related land disturbances of 0.5 acres or larger are regulated in Connecticut pursuant to the Connecticut Soil Erosion and Sediment Control Act under Sections 22a-325 to 22a-329, inclusive, of the Connecticut General Statutes (“CGS”). Construction-related land disturbances of one (1) acre or larger are also regulated under CGS Section 22a-430 and under Section 402(p) of the federal Clean Water Act and the National Pollutant Discharge Elimination System (“NPDES”) program. Prior to the start of such regulated activities, authorization is required from local authorities and, for larger projects, the Connecticut Department of Energy and Environmental Protection (“Department”). Construction projects involving five (5) or more acres of land disturbance require an individual NPDES discharge permit from the Department, or may be eligible to register for coverage under the Department’s NPDES General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (general permit).

The Department has encountered repeated problems associated with solar farm construction projects covered under the general permit, from the registration process through construction activities. Although in no way an exhaustive list, the following are common problems associated with solar farm general permit registration applications and ways to address such problems:

- Applicants have been submitting registration applications that lack the requisite information or the requirements necessary for authorization under the general permit. The Department requires a complete and sufficient application when a registration application is filed, and may reject any registration application it deems to be incomplete or insufficient.
- Applicants are not adhering to the sixty (60) day/ninety (90) day time frame for Department review as required by Section 3(c) of the general permit. While the Department has on occasion shortened the review timeframe, Applicants are expected to allocate no less than the requisite time frame for the registration application review process and must plan accordingly.
- Registration applications for solar farm projects often fail to identify the project’s contractor and sub-contractors. Section 5(b)(1)(viii) of the general permit mandates that this information be included in the registration application.
- Applicants have been repackaging the Siting Council submittal, which is not acceptable. Section 3(c)(2)(D) of the general permit mandates that the application submittal include only materials required to support the Stormwater Pollution Control Plan (“SWPCP”). This information must be up-to-date and accurate. Any superfluous information delays the registration application review process.
- SWPCPs for solar farm projects are often lacking sufficient detail and information. An approvable SWPCP shall include, but not be limited to, the location of all erosion, sediment and stormwater control measures including detailed design cut sheets with supporting calculations, construction means and methods, project phasing (i.e., site planning, pre-construction, construction, and post-construction stabilization, etc.), construction sequencing and a construction schedule.
- The Applicant’s design professional must be well-versed in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control (“E&S Guidelines”), specifically the techniques found in Chapter 4, Large Construction Sites, the 2004 Connecticut Stormwater Quality Manual, as well as *current* best management practices (BMPs) recognized by the International Erosion Control Association (IECA), provided such BMPs are equal to or better than the E&S Guidelines.
- From the Department’s perspective, an approvable SWPCP will include methods for avoiding compaction of soils, disconnection and reduction of runoff associated with solar panel arrays, avoidance of concentration of stormwater, and other measures necessary to maintain or improve pre-construction hydrologic conditions.

- Applicants need to follow the SWPCP review checklist when preparing the SWPCP, giving specific attention to post-construction stormwater controls and the development of a detailed long-term maintenance plan to ensure that the SWPCP meets the terms and conditions of the general permit.

Subsequent to authorization for coverage under the general permit, the Registrant is responsible for ensuring compliance with all terms and conditions of the general permit and the approved SWPCP once construction has been initiated. However, for solar farm projects, Registrants often fail to comply with the terms and conditions of the general permit, including the approved SWPCP. In particular, Department staff have observed the following issues that a routine inspection protocol and proper oversight, as required under the general permit, would have prevented, including but not limited to:

- pre-construction site planning and management deficiencies (e.g., existing vegetation, scheduling, training, phasing/sequencing, tree protection, etc.)
- ineffective placement, maintenance, and/or repair of administrative/procedural, vegetative, and structural BMPs (e.g., erosion, sediment and stormwater runoff controls, good housekeeping, materials management, and training)
- lack of thorough inspections
- ineffective or untimely corrective action
- ineffective stabilization practices
- ineffective permanent post-construction controls (i.e., store, treat and direct storm-water quality and quantity to pre-construction levels)

Such issues at solar farm construction projects raise concerns, since such projects often create areas of land disruption larger than the generally accepted BMPs of five (5) acres anticipated under the general permit. As a result, any applicant seeking coverage under the general permit for a solar farm construction project should take care to address the issues noted above. While by no means exclusive, some recommendations that should be incorporated into a SWPCP to address these issues include:

- Ensuring that only a Professional Engineer and/or Landscape Architect, as defined in Section 2 of the general permit, who meets the qualifications described in Section 5(b)(4)(A)(ii) and who has been approved in writing by the Commissioner, serve as the Commissioner's agent to inspect the site and also serve as the qualified inspector for the purposes of Section 5(b)(4) of the general permit ("authorized professional"). Such authorized professional must remain in good standing with the Connecticut Department of Consumer Protection and be technically and ethically qualified to inspect the site and be retained for the duration of the construction project until the Notice of Termination acceptable to the Commissioner has been filed as described below.
- Ensuring that the authorized professional prepare a proposed inspection checklist to assure the construction project is being conducted in compliance with the terms and conditions of the general permit, and the approved SWPCP is implemented in accordance with the general permit. The inspection checklist shall comply with Section 5(b)(4)(B)(iii) of the general permit, and include a space for the authorized professional's signature and professional stamp.
- Ensuring that the credentials for the authorized professional proposed by the Applicant and the proposed inspection checklist prepared by such authorized professional be submitted for the review and approval of the Commissioner and be included with the registration application for the general permit. No other professional may serve as the authorized professional without the prior submittal of relevant credentials and inspection checklist for the Commissioner's review and written approval.

- Ensuring that the authorized professional personally perform all pre-construction, construction, and post-construction site inspections; perform inspections at the end of any storm event whether or not such storm generates a discharge; and prepare and submit all inspection reports including the supporting inspection checklists in compliance with Sections 5(b)(4)(A) and 5(b)(4)(B) of the general permit.
- Ensuring that the authorized professional report any violations of the terms and conditions of the general permit or the SWPCP to the Commissioner's designee within two (2) hours of becoming aware of such violation, or at the start of the next business day of becoming aware of such violation outside normal business hours and shall, within five (5) days, prepare and submit a signed and stamped written report, which documents the cause of the violation, duration including dates and times, and corrective action taken or planned to prevent future occurrences.
- Ensuring that if circumstances necessitate a revision to the SWPCP, the authorized professional works with the Permittee's design professional to ensure compliance with the terms and conditions of the general permit, and any such change to the SWPCP shall be submitted for the review and written approval of the Commissioner.
- Ensure that the authorized professional reviews all stormwater monitoring reports to evaluate the effectiveness of the SWPCP and to document any adverse impacts that any stormwater controls on the construction site or discharges from the construction site may have on wetlands, streams, any other receiving waterbodies. Such evaluation shall be documented in the inspection reports and inspection checklists performed pursuant to Section 5(b)(4) of the general permit.
- Ensuring that, in the event the authorized professional identifies a violation of the terms and conditions of the general permit, the SWPCP, or otherwise identifies adverse impacts on wetlands, streams or any other receiving waterbodies, that construction activity shall immediately cease and the site stabilized until such violation or adverse impacts have been corrected.
- Ensuring that reporting and record-keeping of all inspection checklists and inspection reports comply with the requirements of Section 5(d) of the general permit, except that a copy shall also be submitted electronically to the Department within ten (10) days from the date of such inspection was performed.
- Ensuring that all inspection checklists and inspection reports comply with the requirements for Certification of Documents in Section 5(i) of the general permit, including the requirement that such checklists and reports shall also be prepared, stamped and signed by the authorized professional.
- After completion of a construction project, ensuring that a Notice of Termination is filed in compliance with Section 6 of the general permit, including the requirement that such Notice of Termination be stamped and signed by the authorized professional certifying that such authorized professional has personally inspected and verified that the site has been stabilized following the first full growing season (i.e., April through October) in the year following completion of the construction project.
- Ensuring that any transfer of the registration comply with the requirements of Section 5(m) of the general permit.

These recommendations are by no means intended to be exclusive. To help address the issues noted above, the Commissioner will also be considering the posting of a performance bond or

other security, in accordance with Section 22a-6(a)(7) of the Connecticut General Statutes, to assure the solar farm construction project maintains compliance with the terms and conditions of the general permit and the SWPCP.