



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

November 3, 2020

TO: Service List dated August 7, 2020

FROM: Melanie Bachman, Executive Director *MAB*

RE: **DOCKET NO. 492** – Gravel Pit Solar application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 120-megawatt-AC solar photovoltaic electric generating facility on eight parcels generally located to the east and west of the Amtrak and Connecticut Rail Line, south of Apothecaries Hall Road and north of the South Windsor town boundary in East Windsor, Connecticut and associated electrical interconnection.

Comments have been received from The Connecticut Department of Energy and Environmental Protection, on November 2, 2020. A copy of the comments is attached for your review.

MB/MP/lm

c: Council Members



November 2, 2020

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

RE: 120-MW Photovoltaic Generating Facility
Gravel Pit Solar LLC
East Windsor, Connecticut
Docket No. 492

Dear Members of the Connecticut Siting Council:

Staff of this department have reviewed the above-referenced application for a Certificate of Environmental Compatibility and Public Need for a 120-MW photovoltaic generating facility in the south central portion of East Windsor. A field review of the site was conducted on September 18 and 23 and October 1, 2020. 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 application 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, assist the state in meeting its requirement to purchase Renewable Energy Certificates from Class I renewable sources associated with 20% of its electricity by 2020, and in implementing Governor Lamont's Executive Order No. 3 that DEEP investigate pathways to achieve a 100% zero-carbon electric sector by 2040. As noted on pages 5-6 of the application, 20 MW of the Gravel Pit Solar project capacity was selected in DEEP's Zero Carbon Emissions RFP of 2018 and another portion of the project's capacity was selected by Rhode Island in another procurement shortly thereafter. Developing grid-scale renewables is also imperative to the state's success in achieving its goal of reducing carbon emissions by 45% below 2001 levels by 2030 and by 80% below 2001 levels by 2050.

DEEP also notes that Gravel Pit Solar LLC participated in a pre-application meeting with personnel from various DEEP programs on June 23, 2020 and presented their proposal to DEEP staff as well as received feedback from the DEEP program personnel.

Project Site Description

The project site is a mixture of agricultural fields, wooded land and two active sand and gravel operations. Despite the name of this project, Gravel Pit Solar, the gravel pit properties represent 76 acres or 15.7% of the 485 acre project footprint. Using the figures from Table 10 on page 56 of the application, which are somewhat different than the figures in the narrative portion

of the application, the area of land to be altered is 364.1 acres of which 61.2 acres or 16.8% is sand and gravel quarry land. The majority of the project footprint is comprised of agricultural fields of which 209.7 acres will be altered for the project according to Table 10. Most of the balance of the project area consists of forested land. The agricultural lands are extraordinarily flat, evidencing little or no slope. The terrain within the two sand and gravel pits is extremely irregular with deep excavations and various piles of material on these properties.

As a general comment on the application applying to the forested land within the project site, neither the Tree Clearing Map in Exhibit 1 nor any other maps or text in this application served to specifically locate or describe where the forest areas slated to be altered or cleared are located. According to Table 10, 58 acres of forest land will be altered, which assumedly includes both forestland within the project footprint as well as surrounding forested areas to be cleared to prevent shading of the panels. A single map or figure coloring in the forested areas of the site to be cleared would have been helpful.

The portion of the project site south of Plantation Road consists of four tilled fields and a farmstead. As of September 23 and subject to change since, from east to west, the four fields consisted of a field planted to cover crops, a field of harvested corn, a field of standing corn, the Markowski farmstead, and another field of standing corn. Eighteen greenhouses are located behind (south of) the third of these fields, as is a small patch planted to vegetables (cabbage, okra, tomatoes and peppers). The fields are very flat and without any ponds, wetlands or watercourses. There is a well-established dirt bike/ATV trail leading from the southwest corner of this third field and accessed via a drive at 42 Plantation Road which leads through a forested area and eventually to residences to the south. The effects of the recent drought conditions are very evident in the corn and vegetables.

More agricultural fields are found north of Plantation Road. These are bounded in general terms by the Central New England rail line to the east and forests extending down to Ketch Brook on the west. Several tobacco barns are located within the fields both north and south of Plantation Road.

Noise from the gun range at the East Windsor Sportmen's Club becomes noticeable in the areas of the project site north of Plantation Road. Such noise was clearly heard during the September 18 and 23 field visits but, ironically, not during the October 1 visit which covered the northern portion of the project site which is closer to the Sportsmen's Club.

Two other observations are noted relative to the forest west of the agricultural fields north of Plantation Road. First is the very well developed ATV/dirt bike trails in these woods, particularly as you get more northerly and closer to the Herb Holden gravel pit. In some areas, these are more aptly described as well-established roads rather than trails. The other interesting feature noted was an 8" diameter metal pipe extending above ground approximately 1,800' before continuing underground. This pipe originates at a rectangular concrete pool of approximately 25' x 35' dimension and located just west of tobacco barn no. 26 and southeast of barns 32, 33 and 34, at the edge of the cultivated fields. From this concrete structure, the pipeline extends west through approximately ninety 20' sections of pipe before disappearing underground behind the home at

305 Rye Street and assumedly continuing on to either Ketch Brook or the nearby pond in the yard of this home. This pipe may have been used to pump water from Ketch Brook or the pond to the concrete pool for irrigation purposes, though the water in the pool looked anything but fresh, so it may not have been used recently.

Moving north from the fields on the north side of Plantation Road, the next portion of the project site is the sand and gravel pit operated by Herb Holden Trucking on property owned by Dennis Botticello. A berm along the northern edge of the agricultural property demarcates it from the sand and gravel pit. Two features of the sand and gravel pit are immediately striking. The first is the irregularity of its topography. Due to the level of on-going activity on the site, only the southern portion of the active excavation area was visited. Within this area were a deep sand pit, a steep hill of sand, smaller sand piles, brush piles and the berm. The haul road descended from above the pit area down to the railroad tracks, passing a small closed landfill, before running parallel to the tracks, crossing them, and ascending back up the east side to both another excavated area and a second, larger closed landfill.

The other notable feature is the extent to which dirt bike use of the pit has become institutionalized with well-defined trails and courses and half-buried upright tires marking turns in the courses. Speaking with personnel at the pit's weigh station, I was told that they used to call the police multiple times per day about the bikers but the police were never able to catch anyone so the pit owners eventually gave up. A pick-up truck and enclosed equipment trailer were parked by a tobacco barn immediately south of the Botticello property as I left it and two bikes which had passed me in the pit were being loaded onto it. I passed another group of dirt bike riders and a group of three ATV's on another trail just to the north of the pit later that day. The level and formalized nature of dirt bike use at the site begs the question as to whether this activity will go away quietly should the proposed solar farm be developed. A mere chain link fence might not be sufficient to assure a 'peaceful transition of power'.

Two existing Ameresco solar facilities are found in the eastern portion of the Herb Holden/Botticello property, one on the south side of the property entrance off Wapping Road and one just a bit north of the first. Labeled according to the signs on their gates as the Norcap South and Norcap North facilities respectively, these are most clearly shown on the Farmland Soils Map and the Tree Clearing Map of Exhibit 1 in the east central portion of either map.

The northernmost portion of the Gravel Pit Solar site consists of the Charbonneau gravel pit operated by the Butler Company, and some small agricultural fields along the south side of Apothecaries Hall Road. The Charbonneau site includes piles of wood chips, mulch, top soil, and concrete debris, the latter, I was told, to be recycled into road aggregate. Both within the working area of the Charbonneau property and much more so along the entrance road to the site are large collections of shipping containers, derelict trucks, miscellaneous equipment and even some small pre-fab structures. The topography of the Charbonneau site is irregular but less so than the Herb Holden pit. The Central New England rail line bounds the property on the west side, while an Eversource transmission line right-of-way bisects it.

Apothecaries Hall Road runs along the north side of the Charbonneau property. The north side of Apothecaries Hall Road is residential with potentially some views of the future solar facility possible from some properties. Several small agricultural fields lie along the south side of Apothecaries Hall Road.

To the west of the Charbonneau property, just across the railroad tracks from it, is the 18-acre property and shooting range of the East Windsor Sportmen's Club on the south side of Apothecaries Hall Road. The Sportmen's Club property is entirely fenced. One officer and one member of the club mentioned that unauthorized shooting activity on the property south of the Club has resulted in significant damage to the Eversource transmission lines. The Club officer showed me photos taken from Eversource drones of the damage to the lines. This activity occurs outside of the boundary of the proposed solar facility and might not therefore be curtailed should the proposed facility be constructed, but it could result in damage, either accidental or otherwise, to the solar panels or other equipment.

The facility to measure and collect data on the available solar radiation for the Gravel Pit Solar project is located just south of the Eversource transmission line right-of-way on the Charbonneau property.

Aquifer Protection Area

The northern portion of the Charbonneau property falls within the aquifer protection area of the Connecticut Water Company's Hunt Wellfield. The proposed solar farm is not a regulated activity under the Aquifer Protection Area regulations or C.G.S. 22a-354a-bb and is not required to register with the Aquifer Protection Program. Representatives of Gravel Pit Solar have been in contact with the DEEP Aquifer Protection Program and have been provided with the appropriate best management practices to safeguard the aquifer.

Bulky Waste Landfills on Botticello Property

The Northern Capital Region Disposal Facility (NORCAP) is located on the Botticello property which hosts the Herb Holden sand and gravel operation. The landfill consists of two parcels, the smaller one west of the railroad and the larger one to the east. These landfills were closed in late 1999/early 2000. The western area, which is directly adjacent to the solar project footprint, was used for the disposal of bulky wastes, i.e., wood and landscaping debris. The eastern area received bulky waste, construction/demolition debris, municipal solid waste and some light industrial waste. There is on-going post-closure care including water quality monitoring at these sites.

DEEP's concern would be if any portion of the solar facility or any construction activity would impact the landform in any way, including the underlying geomembrane. If the applicant has any questions or any uncertainty about the potential for this, David McKeegan of the DEEP Waste Engineering and Enforcement Division should be contacted at David.McKeegan@ct.gov.

Construction Stormwater Management

Construction projects involving five or more acres of land disturbance require either an individual NPDES discharge permit from DEEP or they may register for coverage under the Department's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from

Construction Activities (DEEP-WPED-GP-015). Representatives of Gravel Pit Solar have been in contact with the Stormwater Program concerning this project and DEEP Stormwater Program personnel have visited the site. DEEP is highly supportive of the applicant's approach to employ pre-seeding of the site and the establishment of permanent vegetative cover on the site before construction activities commence. The schedule proposed on page 15 of the application to install stormwater controls, grade and stabilize the site and establish vegetative cover in the late summer/early fall of the year before beginning to install the solar facility the following construction season will be very helpful in preventing erosion problems on the site.

The applicant 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.

For the benefit of the applicant, two stormwater guidance documents are attached to these comments.

Natural Diversity Data Base

Consultants for Gravel Pit Solar submitted a letter to the DEEP Natural Diversity Data Base on July 19, 2020 concerning survey methods and protection strategies for the fifteen State-listed plant and animal species potentially present at the project site. Review of this information is still on-going and no Final Determination letter for this project has yet been issued. Further information from the applicant may be necessary before such determination can be issued.

Miscellaneous Petition Commentary

DEEP typically recommends that a 6" gap be left between the ground and the bottom of the perimeter security fence to accommodate the movement of smaller wildlife onto the site to avail themselves of the permanently maintained grassland habitat within the fence. With 485 acres of such habitat within the fenceline of the proposed Gravel Pit Solar facility, we repeat this recommendation for this largest-in-the-state solar farm as being especially relevant in this case.

Thank you for the opportunity to review this application 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

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 $\leq 5\%$

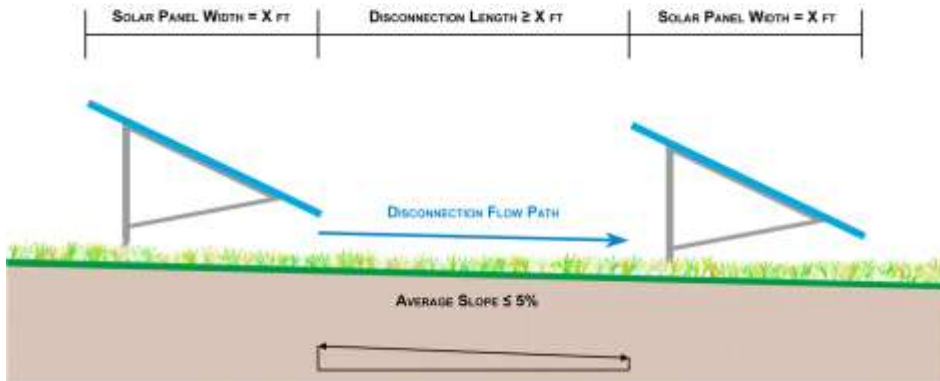
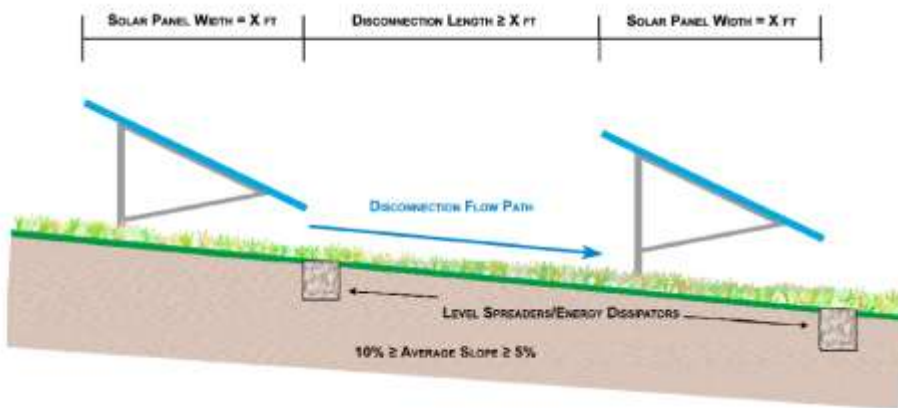


Figure 2
Solar Panel Installation with Slopes $> 5\%$ and $\leq 10\%$



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

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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.