

STATE OF CONNECTICUT SITING COUNCIL

PETITION OF LSE PICTOR LLC
FOR A DECLARATORY RULING
THAT NO CERTIFICATE OF ENVIRONMENTAL
COMPATIBILITY AND PUBLIC NEED IS
REQUIRED FOR THE CONSTRUCTION,
OPERATION, AND MAINTENANCE OF
A 1.99 MW AC SOLAR PHOTOVOLTAIC
FACILITY IN WINCHESTER, CONNECTICUT

PETITION NO. 1398

August 19, 2020

**PETITIONER LSE PICTOR LLC'S RESPONSES TO SITING COUNCIL INTERROGATORIES
SET THREE DATED AUGUST 14, 2020**

88. Referring to the petitioner's response to interrogatory 37, the soil surface will be lightly scarified by an excavator prior to seeding to loosen any compacted soil which might have occurred during the solar panel construction phase.

a. Is this standard practice used to deal with the potential compaction of soil during construction of a solar project?

Petitioner believes that this is a "best practice" and therefore utilizes this technique prior to seeding on all of its project sites to promote vegetation growth. However, Petitioner does not have sufficient knowledge of the practices of other developers to comment on whether this is a standard practice. However, as noted in response to interrogatory 88(b) below, Petitioner is of the opinion that this practice does promote vegetation growth and reduce erosion problems and therefore will implement this practice for the proposed Project. Petitioner also notes that, as stated in response to interrogatory #71, the scarifier will not be mounted to an excavator, it is a device that will be mounted behind a small tractor.

b. Is this a practice that would be applicable to all solar developments in an effort to loosen compacted soils, promote vegetation growth and lessen erosion problems?

Petitioner believes that this practice could be replicated at other commercial solar development sites.

89. Referring to the petitioner's response to interrogatory 38, it states that since the petitioner is not proposing to remove top soil or otherwise disturb the soil in the area of the array, there will likely be little to no accumulation of sediment behind a control barrier.

a. Is the petitioner claiming that the installation of the solar panel support structure and mounting of panels will not disturb surrounding soils?

No, that is not Petitioner's claim. The use of vehicles to drive the posts into the ground as well as to deliver panels to the racking system will minimally disturb the ground surface by

potentially compacting the native soils. In order to minimize the impact of this potential compaction, scarification is used to break up the compacted surface layer, as noted in response to interrogatory 88 above.

b. Will the removal of stumps and woody debris from the ground surface disturb the existing structure of underlying soils?

Yes, the removal of tree stumps will disturb the native soils within three (3) feet of the actual stump. The removal of woody surface debris by using the teeth on an excavator will only disturb the upper two to three (2-3) inches of the soil surface. Stump removal will only be performed in the array area, and not on the perimeters.

c. Will scarification of soils result in disturbed soils in the area of solar panel array?

As noted in response to interrogatory #89 (a) above, scarification will only be performed on already disturbed soils. Scarification will be performed in the areas that vehicles are utilized and have contributed to soil compaction in the “tracked” areas. The scarification of the soils is done to loosen the top layer of soil which may have been compacted by the movement of vehicles driving over it. While it technically does disturb the soil, the soil will have already been disturbed by vehicular traffic, and scarification is only done immediately prior to seeding the array area and, as noted in response to interrogatory #88 above, the intent of utilization of the procedure is to promote vegetation growth and lessen erosion problems.

90. Referring to the petitioner’s response to interrogatory 39, provide the following:

a. Is the four-foot or less berm height based on a definition or ruling by the Dam Safety Division? If yes, please identify where it can be found.

No, it is not based on a definition or ruling by the Dam Safety Division.

b. Are there any other considerations that might require the need for a Dam Safety license?

Petitioner does not believe that it is constructing a dam, therefore, it does not require a dam safety license. Petitioner has filed its stormwater permit with DEEP and has included its proposed Site and stormwater management plans. Petitioner anticipates that if DEEP personnel conclude that such a license is required, such requirement will be raised as a condition of approval of Petitioner’s stormwater permit.

c. The berm shown on the site plan ranges in height from 6 to 8 feet on the south side. Why was the berm height of the basin identified as 4 feet or less in the response?

The height of the berm is four feet (4’). The embankment height is defined as the difference between the top of the embankment and the existing grade at that same point. For the constructed wetland at this Site, the top of the embankment is at 286’ and the existing ground under the embankment is 282’, therefore the berm is a height of four feet (4’).

91. Referring to the site visit conducted in November 2019 to verify wetlands limits:

a. Did this site visit include a re-examination of existing vernal pools identified in 2005?

Yes, the two (2) vernal pools identified were re-examined and it was determined that, because they are more than five hundred feet (500') away from the external clearing limits of the Project (the northeast corner of the array), these two (2) vernal pools would not be impacted by the Project given this large distance.

b. Did the site visit attempt to locate any new vernal pools that may have developed since the original subdivision wetlands review?

Yes, Petitioner's wetlands scientist reviewed the entire Project area of impact and no additional wetlands or vernal pools were identified.

c. The July 5, 2005 wetland investigation report states "*With respect to the possibility of other vernal pools on site, the large wetland contains many pockets of standing water and does not support fish populations. Amphibians are probably breeding within cryptic vernal pools within the large wetland, although no amphibian species were directly observed....*" Was any attempt made to verify the existence of other vernal pools located on the site? If not, why not?

Yes, the entire Project area of impact was re-evaluated and it was determined that no additional wetlands or vernal pools had developed in the Project area since the July, 2005 investigation.

92. What is the distance between the edge of the solar array and the wetlands situated to the east/southeast of the site? What is the distance between edge of eastern swale and the eastern wetlands?

The distance is three hundred fifteen (315') from the southeast corner of row #23 of the solar array to the closest hillside wetland pocket to the east. It is four hundred fifteen feet (415') from the southeast corner of row #23 to the western boundary of the large wetland area in the southeast corner of the site. It is two hundred eighty (280') from the southeast corner of row #13 to the closest hillside wetland pocket to the east.

93. Referring to the petitioner's response to interrogatory 56, given the east and west swale dimensions of 2' deep and 6' wide, the swales are capable of redirecting a significant amount of overland flow towards the wetland detention basin at the south end of the site.

a. Please explain how there is no diversion of runoff from wetland resources directly to the east and west when the site plans and associated stormwater report demonstrate a diversion of water via swales from the east and west to the south end of the site.

A diversion only occurs when surface water is redirected from one watershed to another watershed. This is not the case and is shown consistently in the site plans and stormwater

report. All surface water runoff will be directed to the same watershed pre- and post-construction and therefore no diversion will occur.

- b. Will the diversion of runoff from the eastern side of the development to the southwest end cause an adverse impact on the wetland seeps and large forested wetland (red maple swamp) situated to the east of the proposed solar array? Please explain in detail.**

No. The area under the array directed to the eastern swale is 5.2 acres and is only collecting surface runoff. There is and will be no interception of shallow groundwater by the eastern swale, so the existing 39.6+ acres that comprises the Site which currently provide groundwater baseflow to the southeast wetland area will remain unchanged from existing conditions. The southeastern wetland area also receives runoff from properties located to the east and not owned by the Petitioner.

- c. How would the diversion of overland flow affect cryptic vernal pools in the eastern wetland?**

As noted above, there will be no diversion so the hydrology of the eastern wetland will remain unchanged from current conditions.

94. Regarding the constructed wetland detention basin:

- a. Why is the basin proposed within 100 feet of wetlands?**

The basin is in the proposed location in order to comply with the CT DEP 2004 Storm Water Quality Manual, which requires a wetland stormwater basin needs to be located where the bottom of the basin can be located below the seasonal high groundwater table in order to maintain the saturated condition at the bottom of the basin. This condition can only be met in the upland area adjacent to or within fifty (50) feet of a delineated inland wetland area. The seasonal groundwater table which is intercepted by the basin bottom provides baseflow on a year-round basis to maintain the saturated condition in the basin and thus provide the environmental to reduce non-point source pollutant loads found in the runoff.

- b. Is this location consistent with the proposed DEEP stormwater general permit section associated with the development of solar arrays?**

The location is consistent with the stormwater general permit, which does not contain a prohibition of stormwater treatment facilities within one hundred feet (100') of a wetland. Petitioner has filed its general stormwater permit application with DEEP and the proposal is under review with the DEEP stormwater division.

- c. Given that the petition claims there are two intermittent streams situated to the west of the proposed solar array, how will some level of water be maintained in constructed wetland detention basin if the site generally dries up?**

The twelve inches (12") or less shallow depth within the proposed constructed wetland basin will be maintained by groundwater base flow from the upland area above the constructed wetland, which is approximately 2.5 acres. The bottom area of the constructed wetland is

0.16 acres, so the contributing area is more than fifteen (15) times as large as the pond bottom where the permanent pool will be. It is a generally accepted engineering principle that a drainage area for a pond must be four (4) times as large as the proposed pond size to provide adequate groundwater flow to maintain the pond. This Project proposes a standard which is almost four (4) times larger than that principle requires.

d. Is stormwater retention associated with certain construction practices (i.e., clay bottom or poorly drained soil fill)?

No. Clay or poorly drained fill may be used on the bottom of a stormwater basin to seal off the bottom if the basin is located in well drained soils where infiltration would occur and thus a permanent pool could not be maintained. In this case, the underlying hardpan in the area of the constructed wetland is impermeable, so no modifications are necessary to create the shallow permanent pool.

95. Referring to the petitioner's response to interrogatory 54, given the potential of low water levels within existing "intermittent" watercourses, why wouldn't the wetland detention basin function as a decoy pool? What studies have been done to determine if vernal pool obligate species are utilizing the western wetland corridor?

The distance between the existing intermittent watercourse and the proposed wetland detention basin is too far for the wetland detention basin to function as a decoy pool. In addition, the wetland detention basin does not provide suitable habitat for vernal pool species since it will not dry out in the spring.

96. According to the site plans, the location of the wetland detention basin emergency spillway is approximately 20 feet away from wetlands, discharging at the wetland edge.

a. What is the proposed maintenance schedule for the spillway?

The spillway will be inspected regularly at the same time when the constructed wetland basin is inspected. As with the embankment, any woody vegetation found shall be removed by hand.

b. If the emergency spillway was utilized, and if it should fail, wouldn't this cause sedimentation entering the wetlands system? How will such a situation be remediated?

Due to the multiple contingencies incorporated into this design, the emergency spillway itself is a failsafe. Under normal operation and maintenance, the orifices of the outlet control structure are designed to accommodate peak discharge. In the event these orifices become clogged, the 4' x 5' crested weir on the top of the outlet control structure will accommodate peak discharge itself. As a fail-safe of all of these flow mediums incurring throttling or complete failure, the emergency spillway will be utilized. In effect, in order for the emergency spillway to incur failure, multiple (3) contingency measures would require to incur complete failure simultaneously.

- 97. Referring to the petitioner's response to interrogatory 65, the response is incomplete. If accumulated sediment is removed from stormwater features, where will it be disposed of?**

Any accumulated sediment from the forebay would be placed in the upland area to the east of the basin.

- 98. The stormwater calculations appear to show an increase in net runoff volumes for the 10-year, 25-year, 50-year and 100-year storm events. What impact will increased volumes have on downstream property owners?**

The slight increases in the peak rate of runoff for the 25-year, 50-year and 100-year events are negligible and are unlikely to occur ever as the hydrologic design of this Site is very conservative. First, all solar panels were considered impervious in addition to the gravel access driveway and any concrete pads. Second, the hydrologic soil group was reduced from Class C (pre-development) to Class D (post-development) even though no grading is proposed in the area of array. This increases the runoff curve number for post-development conditions and thus will yield higher peak rates and runoff volumes which are directed to the basin. Lastly, as the vegetative cover in the area of the array matures over time, the plant roots in the soil will increase the infiltrative capacity and thus more rainfall will infiltrate into the soil and less will become runoff. In order to control runoff volumes, the CT DEP 2004 Storm Water Quality Manual uses the stream channel protection criteria for the 2-year rainfall event to prevent adverse impacts to downgradient streams. As downgradient adjacent properties are higher than the intermittent stream into which the basin discharges, there will be no impact on the downgradient properties.

- 99. Referring to the petitioner's response to interrogatory 78, identify the locations where the 1.25 acres of the solar array area has slopes in excess of 15 percent. Is it good engineering practice to construct solar arrays on slopes that exceed 15 percent? Will there be any grading in the area where slopes exceed 15 percent in order to lessen the severity of project site grades? If not, why not?**

It is general practice of the solar industry to avoid the installation of racking systems on slopes greater than 15% as doing so impedes the optimal production efficiency of the modules. In this instance, the decision to install racking on slopes greater than 15% was driven by project economics. No grading is proposed of the natural ground condition within the area of the solar array.

- 100. Has the petitioner contacted the local Fire Marshal regarding compliance with the CT State Fire Prevention Code, Ground Mounted Photovoltaic System Installations section 11.12.3 in regards to site design clearance requirements around the solar array? If not, when will the petitioner contact the local Fire Marshall to ensure the current proposed site design has the minimum required clearances?**

Petitioner will be required to receive approval from the local fire marshal when the application for the local building permit is submitted. The design allows for fire truck access to electrical equipment pads and to enter each row of solar modules. The fire department will also install a dedicated lock to allow for unimpeded access to the site.

- 101. In its correspondence to the Council dated May 27, 2020, the Council on Environmental Quality recommended a tree clearing restriction to protect potential tree roosting bats that may utilize the site. Has any bat study been conducted? Would the petitioner be amenable to a tree clearing restriction for tree roosting bats (typically late fall to early spring)?**

No bat studies have been completed because no bat habitat was identified on the Site in Petitioner's consultation with DEEP NDDB nor did the Council on Environmental Quality note any reason why this Site in particular may be suitable habitat for tree roosting bats. In addition, as noted in the petition, the Project will require clearing of only 13.6 acres of the existing 104-acre Site. Notwithstanding the foregoing, Petitioner will coordinate its construction schedule to balance the impact of stormwater impacts of construction during the winter months but also remove trees to minimize impact on potential habitat tree-roosting bats.

- 102. Referring to the petitioner's response to interrogatory response 77:**

- a. Identify the location where DEEP requires a wetland detention basin for stormwater control at a solar facility.**

DEEP requires that any type of stormwater management practice must conform to the requirements found in the 2004 Storm Water Quality Manual. While the manual does not require a specific type of basin, dry detention basins provide poor water quality treatment, which is a primary concern of the runoff from a solar array, so a dry detention was not considered for this Site.

- b. Provide information as to why a non-wetland stormwater detention basin cannot be constructed at the site in a location that provides a 100-foot buffer to the existing undisturbed wetland/watercourse corridor.**

A non-wetland (dry) detention basin would not provide water quality treatment of the runoff directed to it and thus its use would increase the non-point source pollutant loads being discharged to a wetland or watercourse. By the placement of the basin closer to a wetland/watercourse boundary, there will actually be less overall Site disturbance.

- c. If a non-wetland stormwater detention basin is constructed at the south end of the solar array, is it possible to construct an upland discharge point where the discharge will remain as overland flow and not become concentrated flow? If not, why not?**

Yes, this is possible and Petitioner considered a number of different designs. Given the Site constraints, Petitioner believe that what is proposed in this Petition is the most effective design at this Site and minimizes the overall environmental impact of the Project.

Respectfully submitted,

Petitioner
LSE PICTOR LLC

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