



July 12, 2021

Town of Killingly Engineering Department  
Killingly Town Hall  
172 Main Street  
Killingly, Connecticut 06239  
Attn: David Capacchione, Town Engineer

Re: Killingly High School Solar Project – Wetland Permit Application #21-1525  
226 Putnam Pike, Killingly, Connecticut

Dear Mr. Capacchione,

On behalf of Applicant, Greenskies Clean Energy, LLC in cooperation with the Town of Killingly Board of Education, All-Points Technology Corporation, P.C. ("APT") is pleased to respond to comments received in a Memorandum dated July 8, 2021 from the Town of Killingly Engineering Department for a proposed solar photovoltaic (PV) solar clean energy facility located at the town-owned Killingly High School property at 226 Putnam Pike. Please find attached responses to the Engineering Department comments.

*Comment #1 - The stormwater calculations show a significant decrease in runoff rates for the developed conditions. Please modify the plans to address this or demonstrate that the wetlands will not be starved.* – does have some potential implications with respect to the wetland permit application currently being reviewed by the Town of Killing Inland Wetlands and Watercourses Commission (#21-1525). In general, a stormwater management system design should be sensitive to discharges to wetland resource areas and should strive to decrease the runoff rates from pre- to post-development conditions. This goal helps to ensure that discharge rates under the developed condition do not result in runoff rates that may result in erosive forces that could cause the release of sediment into receiving wetland resource areas. Reduction of runoff rates also helps minimize the sizing of the outlet control structure (i.e., level spreader, etc.) and limit the associated limit of disturbance needed to construct these outlet control structures, which would further impact the upland review area and possibly result in direct wetland impacts. While a significant reduction of runoff rates may sometimes be an indication of a reduction of volumes being discharged into the receiving wetland resource areas, it is the pre- vs post-development stormwater volume discharge that is the more important indicator of whether there is a potential for hydraulic impacts to receiving wetlands. In particular, it is the more frequent storm events (i.e., 2-year and to a lesser degree 25-year storms) that could result in an effect to wetland hydrology.

As indicated in the attached response to Engineering Department comments, the total volume of runoff to both Wetlands 1 and 2 is predicted to increase for the 2-year storm event. For the 25-year storm, there is a volume increase to Wetland 2 and only a slight 7% reduction to Wetland 1, which is

not considered to result in a likely adverse impact to Wetland 1's hydrology. This conclusion is further supported when one compares the proposed solar facility's percent of total drainage area that feeds Wetland 1. The total drainage area feeding Wetland 1 at the culvert inlet under the high school's access road is ±18 acres. The limit of disturbance associated with the proposed solar facility within Wetland 1's drainage area is ±3.2 acres and for the solar facility limits (e.g., fenced area and drainage basin) is ±2.4, accounting for 18 percent and 13 percent of Wetland 1's total drainage area, respectively. With less than 20 percent of Wetland 1's total drainage area being effected by the solar facility and considering there are only slight reductions in total stormwater runoff volume for the 25-, 50-, and 100-year storms, while a small increase for the frequent 2-year storm event, the proposed solar facility will not result in a likely adverse impact to Wetland 1's hydrology.

Wetland 2, with its entire drainage area of ±2.2 acres encompassing the southern portion of the proposed solar facility, is potentially more sensitive to hydrology changes than Wetland 1 associated with the proposed project. However, for all the design storm events, there will be an increase in stormwater runoff volume to Wetland 2. Wetland 2's hydrology includes surface runoff and shallow seasonal groundwater exfiltration associated with a shallow glacial till hardpan. Wetland 2 has the capacity to accept the additional runoff volumes and would not adversely affect the wetland vegetative species currently dominating this wetland resource area. In addition, the increase in stormwater runoff volume and will not adversely affect Wetland 2's principal function (groundwater recharge/discharge) or its secondary functions/values (floodflow alteration, sediment retention, nutrient retention, production export, wildlife, and education).

Thank you for your consideration of our responses and if you have any questions or require further information, please contact me by telephone at (860) 552-2033 or via email at [dgustafson@allpointstech.com](mailto:dgustafson@allpointstech.com).

Sincerely,



Dean Gustafson  
Professional Soil Scientist

cc: Jonathan Blake, Town of Killingly  
Carson Mislick, Greenskies Clean Energy, LLC  
Robert Angeli, Superintendent, Killingly Board of Education  
Kevin A. McCaffery, P.E., APT

Enclosure



**Memo**

Date: July 9, 2021

To: Dean Gustafson

From: Kevin A. McCaffery, PE

Re: Killingly Solar Project  
Killingly, CT

APT Project No.: CT599140

The following information is provided to assist in addressing comments received from the Town of Killingly Engineering Department dated July 8, 2021. Their comments are included below with responses in italics. As noted, a portion of their comments will require plan changes to be furnished at a later date.

"1. The stormwater calculations show a significant decrease in runoff rates for the developed conditions. Please modify the plans to address this or demonstrate that the wetlands will not be starved."

*Although the peak flow rates are predicted to decrease, the total volume of runoff to both wetland areas is predicted to increase for the 2-year event. For Wetland 2, an increase is predicted for all storm events modeled. The calculations show a slight decrease in total volume of runoff to Wetland 1 for events above the 2-year. A summary is included below.*

Runoff Volume Comparisons at AP-1 (Wetland 1)				
Storm Event	Runoff Volumes (af)		Change	% Change
	Existing	Proposed		
2-year	0.37	0.42	0.05	14%
25-year	1.49	1.39	-0.10	-7%
50-year	1.88	1.81	-0.07	-4%
100-year	2.33	2.29	-0.04	-2%

Runoff Volume Comparisons at AP-2 (Wetland 2)				
Storm Event	Runoff Volumes (af)		Change	% Change
	Existing	Proposed		
2-year	0.10	0.13	0.03	31%
25-year	0.46	0.74	0.28	61%
50-year	0.58	0.86	0.28	48%
100-year	0.73	1.00	0.27	37%

"2. On sheet EC-1a note under phase 2 #17 says to "...clean and convert temporary sediment basin...". Please explain the intent of this note."

*During construction the culvert inlets will be capped, as called out on Sheet EC-3, to provide sediment storage. Following construction and stabilization of the site any accumulated sediment in the basins will be removed then these caps will be removed to allow flow through the culverts. Sediment will also be removed during construction, if needed, as defined by the O&M Plan on Sheet EC-1.*

"3. The following comments pertain to sheet EC-3:

- A proposed Temporary Sediment Trap Basin is called out in 2 locations. Please add the missing basin or remove the extra note."

*Please clarify where this note is located. One basin is proposed.*

- "Typically, a 10-foot-wide access road to the basin and around the top is required for routine maintenance. If the basin is temporary, please include details and grading for abandoning the basin. If it is to remain, please add the access road."

*As shown on Sheet GD-1, Final Grading and Drainage Plan, the basin will be a permanent feature on the site. Please cite or provide the relevant Town code for providing access to detention basins so the requested access can be designed according to the effective standards.*

- "Please extend the rip-rap for the proposed forebay to the bottom of the basin"

*This change will be shown in the revised plans.*

- "Please extend the rip-rap for the overflow weir to the end of the rip rap apron"

*This change will be shown in the revised plans.*

- "Please include a cross section for the length and width of the rip - rap level spreader"

*This detail will be shown in the revised plans.*

"4. While I agree with your assessment that the solar arrays will not create impervious cover, they have the potential to create channelized flow if the area is not graded properly or if vegetation is not allowed to become properly established. Please indicate how the site will be maintained/monitored both during and after construction and who the responsible party(s) is (are)."

*The applicant is the party responsible for assuring the site is graded properly and sufficiently stabilized, along with their contractor. Their performance and implementation will be assessed by the SWPCP monitoring/inspection process and corrected as needed. The new General Permit issued in December, 2020 calls for an extensive post-construction monitoring period to assure growth is established and the site is stable. That permit cannot be closed out until final stabilization is legitimately achieved and documented.*