

MEMORANDUM

To: Pine Gate Renewables
Mikala Newsom

From: Marcus Rubenstein, CPESC
Kimley-Horn and Associates

Date: December 1, 2022

Re: Morven Solar Energy Project – FAQ Sheet

Hydrology - Commentors have expressed concerns related to water flowing onto their property from the project site

- Solar farms that use traditional elevated solar panels, like those proposed at Morven Solar contain an impervious surface (elevated solar panel) with a pervious surface (vegetation) underneath the panel. It is a common and acceptable practice across utility scale solar farms to manage stormwater by disconnecting rows of solar panels and directing runoff over the vegetated areas between the rows.
- Currently, the State allows solar panels associated with ground-mounted solar farms to be considered pervious if configured such that they promote sheet flow of stormwater from the panels and natural infiltration of stormwater into the ground beneath the panels.
- The Morven Solar Project proposes to design and install solar arrays in a way that will allow growth of vegetation under and between the solar arrays. Each row of panels will be installed with sufficient distance between rows to allow for capture and infiltration of rainfall
- In accordance with Georgia stormwater management regulations, stormwater runoff in the developed condition will not increase in flow volume or velocity from that of the pre-developed condition.
- During construction, the site will contain sediment barriers (silt fence) on the downstream side of any disturbed land. These barriers will be designed to store sediment on-site and filter/treat runoff before stormwater leaves the site. In some areas, the site may also contain sediment basins, which will also be designed to capture and store 67 cubic yards per acre of sediment and filter/treat runoff before stormwater leaves the site.
- In areas where topography gradients increase and localized runoff may flow off site across these steep slopes, sediment basins will be retrofitted after construction and converted to permanent stormwater detention ponds. This will ensure that post construction stormwater flows are detained and released at a rate equal to or less than that of the pre-construction condition.
- The Journal of Hydrologic Engineering published a peer reviewed article in May 2013 by Cook and McCuen, called *Hydrologic Response of Solar Farms*. Cook and McCuen studied and determined the effects that various factors would have on runoff from a site with solar panels and a site without solar panels. The article analyzed storm duration, soil type, ground slope, panel angle, and ground cover and provided an assessment of the factors that would most influences stormwater runoff from leaving a given site.
- Of the factors considered, ground cover was determined to be the single most important factor in slowing down and managing stormwater runoff from a solar site.