



TECHNICAL MEMORANDUM #8

TO: Applicants and Designers for State and Federal Projects

FROM: Sediment and Stormwater Plan Review Division
Water and Science Administration

DATE: March 30, 2018

SUBJECT: Solar Panels

On May 22, 2012 Maryland passed House Bill 1117 establishing that the impervious surface for solar panels includes only the foundation or base supporting the solar panel.

The best way to handle solar array projects is to think about them in much the same way as any other project. MDE requires that Environmental Site Design (ESD) be provided for the impervious area requiring treatment (IART) and the target rainfall (P_E). For a solar array project this would be the base/posts for the panels as well as any other impervious areas within the LOD such as access roads, pads, sheds, etc. If the treatment cannot be provided at the source, compensatory water quality management for the IART could potentially be provided elsewhere in the watershed. As for the water quantity component of ESD, the impervious area may be small enough that management of the channel protection volume would not be required. This assessment will have to be made on a case-by-case basis.

Other considerations include the impact the changes will have on the hydrology/drainage pattern as well as erosion and sediment control. The Stormwater Design Guidance for Solar Panel Installations (January 2013) on MDE's website addresses this. When water falls off the solar panels it hits the ground below. That surface below the drip line is going to be hit by concentrated flow and susceptible to erosion. The surface needs to be protected with some sort of "splash pad". Gravel would work as would soil stabilization matting. More important than having a level surface is maintaining sheet flow across the contours (i.e. down the slope). This would be achieved most effectively if the splash pad were embedded so that it is flush with the ground surface. Because matting is thin and the grass grows through it, it may be the better surface. Matting comes in permanent and temporary variations. The permanent is preferable. Carefully consider maintenance and mowing requirements when making the selection.

Regarding erosion and sediment control, even if there is no proposed grading, the entire work area should be included in the limit of disturbance. The ground surface will be disturbed and exposed by equipment during the installation process, and therefore sediment controls are necessary for the entire work area. Same day stabilization alone is not a viable option although stabilization should be implemented as quickly and efficiently as possible.