

**APPENDIX III**  
**AVOIDANCE & MINIMIZATION ANALYSIS**

### **Avoidance and Minimization Analysis**

MD Solar 1, LLC proposes to construct a solar power generation facility ("project") in Charles County, Maryland. The proposed project will include the construction of photovoltaic (PV) arrays, access roads, security fencing, screening landscaping, and utilities necessary to serve the proposed project.

Pursuant to the *Memorandum of Agreement between the Environmental Protection Agency and Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines*, applicants for state permits to impact waters of the State must demonstrate that impacts to these waters have been avoided and minimized to the maximum extent practicable. Under the Section 404 (b)(1) Guidelines (40 CFR §§ 230.1-230.80) for non-water dependent uses, the applicant must demonstrate that the proposed project is the Least Environmentally Damaging Practicable Alternative (LEDPA) by demonstrating that all "appropriate and practicable" steps to avoid and minimize impacts on Waters of the U.S. have been taken.

The concept of practicability is an important component of the impact avoidance, minimization, and mitigation requirements of the U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (COE). The term "practicable" appears numerous times in EPA's Section 404(b)(1) Guidelines, and the *Memorandum of Agreement between the Environmental Protection Agency and Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404 (b)(1) Guidelines*. This term is defined in EPA's Section 404 (b)(1) Guidelines (40 CFR §§ 230.1-230.80) as "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." The COE's wetlands regulations (33 CFR §§ 320-331) also recognized economic issues as one of the criteria to be considered in determining whether the COE should issue a permit, and these regulations state that the practicability of alternatives to accomplish the objective of the proposed project must be considered in permit decisions (33 CFR § 320.4(a)(1)). Thus, economic interests and the purpose of a proposed project must be taken into account when analyzing project alternatives and determining the LEDPA.

#### **Analysis of Practicable Onsite Alternatives**

In order for the project purpose to be practicably achieved, the non-tidal streams and wetlands must be impacted to allow for installation of access roads and utility connections necessary to serve the proposed usage. Given the location of the project site and existing waters traversing the property, the importance of the project to the local residents, and because the amount of fill located in Jurisdictional Waters has been limited to the minimum necessary (only one perpendicular road crossing) to accomplish these requirements, there is no practicable alternative that will allow for the construction of this development within the project boundary with less adverse effects of streams, wetlands, and the aquatic community than the proposed project. It should be noted that the proposed site layout completely avoids impacts to streams and forested wetlands associated with solar array construction by confining construction areas to uplands and the proposed impacts are solely a result of the required access roadways and utility connections. Stream and wetland impacts have been minimized as much as practicable by the proposed site layout. Adjacent parcels within the same area are either insufficient to accommodate project needs (size) or would result in a greater adverse effect on streams, wetlands, buffers, and the aquatic communities. In addition, the subject site is

located in an acceptable proximity to existing power grid infrastructure, which is a necessity for a renewable energy project of this size, as it avoids additional construction and wetland impacts associated with transmission lines. Therefore, there are no practicable onsite or offsite alternatives for the proposed location of the project that would be expected to have a lower environmental impact.

The Applicant, land planners and engineers have worked to avoid and minimize impacts on the site to the maximum extent practicable. The layout of the proposed development was placed in the only location feasible to suit the proposed usage. Due to the limits of the project area and development constraints, specifically the location and extent of the existing streams and wetlands and the need for a certain area of solar panels, no alternatives exist for the planned development. As mentioned, the solar arrays themselves have been located in upland areas only, thereby completely avoiding the regulated waters and wetlands. The proposed stream impacts are associated with a 15 foot wide access road crossing to provide service and vehicular access to the relatively isolated western solar arrays and an 18 foot wide temporary span bridge over Wards Run; and are the minimum width necessary to accommodate expected vehicle traffic. The 2 wetland impact area in the eastern portion of the project are associated with tree cutting along the path of a proposed utility easement where overhead utility lines will leave the solar array field and connect to an existing power line east of the project site. As a result, these impacts will be conversion from PFO to PEM wetlands to maintain the easement and will not involve permanent fill or grading. All wetland and stream crossing areas are perpendicular to ensure the minimum impacts possible.

Impacts to the onsite streams totaling 62-linear feet are associated with installation of perpendicular access road crossings. Permanent impacts to 40 linear feet are proposed due to the grading and placement of a culvert, bridge, and fill material needed to improve an existing dirt roadway crossing. The crossing will be properly sized and maintain downstream hydrology while also preventing upstream flooding. Temporary impacts to 22 linear feet of Wards Run are proposed to provide a crossing capable of supporting construction traffic. The existing bridge is not designed to support the necessary loads. The existing road was utilized to the extent practicable. Wetlands to the north of the existing bridge were avoided and the temporary span bridge is proposed in the current location of a wooden pedestrian bridge. No permanent in-stream impacts are proposed in this location.

Conversion impacts (palustrine forested to palustrine emergent) to 4,550-square feet of non-tidal wetlands are associated with the installation of an overhead power line utility easement. No structures associated with the power line will be placed in wetlands.

Due to the location and extent of the onsite wetland and Water features, as well as the requirement for maintenance/access roads and utility connections, the permanent impacts to the aquatic resources proposed in this application are unavoidable. We believe that further avoidance and minimization is not practicable and that the proposed project is the LEDPA.