BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application of Nestlewood Solar I LLC for a Certificate of Environmental Compatibility and Public Need	**)** **)** **)** **)**	**Case No. 18-1546-EL-BGN**

DIRECT TESTIMONY OF MATT MARQUIS

Q.1. Please state your name, title and business address.

A.1. My name is Matt Marquis. I am a Project Engineer at Hull & Associates, Inc. My business address is 6397 Emerald Parkway, Suite 200, Dublin, OH 43016.

Q.2. What are your duties as a Project Engineer?

A.2. As a project engineer at Hull & Associates, Inc., I am responsible for managing projects related to storm water and hydrologic and hydraulic (H&H) studies. I am also a technical lead for many of the same projects I manage and others throughout the company. I am responsible for civil engineering design for dams, landfills and land development projects. For dam projects, I am responsible for performing dam site inspections, performing H&H analysis to support rehabilitation and repair options to achieve regulatory compliance, developing Emergency Action Plans and Operation Maintenance and Inspection Manuals, and developing construction drawings and quantities. For storm water management projects and all other projects at Hull, I prepare H&H studies to support the engineering design, I prepare construction drawings with erosion and sediment control design, and I provide Ohio EPA surface water construction permitting assistance for both public and private clients through preparation of Storm Water Pollution Prevention Plans.

Q.3. What is your educational and professional background?

A.3. I am a registered Professional Engineer in the state of Ohio, Pennsylvania and West Virginia, and a Certified Floodplain Manager with the state of Ohio. I completed my master's degree in civil engineering in 2014 with a focus on geotechnical engineering from Norwich University in Northfield, VT. I completed my bachelor's degree in construction engineering technology in 2011 from the University of Toledo. I completed nearly 12 months over three calendar years of cooperative work-education as a fulltime engineer at BBC&M Engineering, Inc. in Dublin, Ohio before being hired in 2011 as a staff engineer. Soon after being hired, BBC&M was acquired by S&ME, Inc. and I continued working at S&ME until September, 2017 when I joined Hull & Associates, Inc. I am currently a project engineer at Hull. Throughout my career I have served on multiple boards and committees for professional development. I spent three years as a member of the Central Ohio Section of the American Society of Civil Engineers younger member group and was elected vice president of the group in my third year. I currently serve on the Board of the Ohio Dam Safety Organization. My career has focused on engineering projects related to water resources. My project experience includes a wide range of hydrologic and hydraulic (H&H) analyses, surface water management, and erosion and sediment control design. I function as the H&H lead on many large and small engineering design projects and flood studies for public and private clients covering dams, landfills, ash ponds, site development and redevelopment, site remediation, oil & gas projects, and stream and wetland restoration projects. My technical hydrologic experience includes watershed analysis using simplified methods such as the rational method and TR-20 through more complex statistical and regression analyses using stream and rainfall gage data, 1-dimensional and 2-dimensional stream channel and floodplain modeling, dam breach and breach inundation

mapping studies, and steady-state flood studies in support of project work within mapped floodplains and floodways established by Flood Insurance Rate Maps. My technical surface water hydraulics experience includes pressure pipe flow, weir flow, culvert design, inlet and outlet protection, open channel armoring design, and steady-state and unsteady hydraulic modeling of streams and rivers.

Q.4. On whose behalf are you offering testimony?

A.4. I am testifying on behalf of the Applicant, Nestlewood Solar I LLC.

Q.5. Have you reviewed the Joint Stipulation filed on June 12, 2019?

A.5. Yes.

A.6. Have you reviewed the supplement to the Joint Stipulation filed on February 4, 2020?

A.6. Yes.

Q.7. What is the purpose of your testimony?

A.7. The purpose of my testimony is to describe the impact of the Project on stormwater flows both during construction and after construction of the Project, as well as the process and permitting requirements for the management of stormwater.

Q.8. What will be the impact of the Project on stormwater flows during construction?

A.8. The Project should not require significant amounts of ground disturbance, and therefore I would not expect significant changes in stormwater flows. That said, the Project will be required to implement a stormwater pollution prevention plan (SWPPP), including practices to protect streams and other surface waters of the state of Ohio.

Q.9. What permits will the Project be required to obtain related to stormwater management during construction?

A.9. In compliance with the Ohio Water Pollution Control Act, dischargers from construction activity are authorized by the Ohio Environmental Protection Agency (OEPA) to discharge storm water from the site to waters of the state in accordance with the General Permit Authorization for Storm Water Discharges Associated with Construction Activity Under the National Pollutant Discharge Elimination System (General Permit). Construction projects disturbing one or more acres of land, or that disturb less than one acre but are part of a larger plan of development, need to apply for this coverage under the OEPA General Permit.

Q.10. What controls will the Project put in place to manage stormwater during construction?

A.10. Stormwater management under the General Permit is intended to manage both quality and quantity of runoff. Specific erosion controls will be determined upon final design of the Project and in accordance with the General Permit. Managing the quality of runoff is accomplished through erosion and sediment controls to reduce the likelihood that sediment-laden water might discharge from the construction site. Sediment management controls filter or temporarily store storm water runoff allowing sediments to settle, and/or divert flows away from exposed soils to limit runoff from exposed areas. Example sediment management practices include sediment traps, silt fence, earthen diversion berms and channels that direct runoff to a sediment basin/trap, filtering barriers, and dust control. Several vegetative and non-vegetative practices such as temporary and permanent seeding or construction phasing may also be used to control erosion at the Site. Managing the quantity of runoff is accomplished through diversion of run-on surface water away from disturbed areas and protecting channels and drainageways from the potential for run-off from disturbed areas causing erosion through concentrated flows. Several practices may be used to manage storm water runoff on the Project. A few example practices include drainage

channels, rock check dams, dikes and diversions to direct flow away from exposed soils, and preventative grading practices.

Q.11. When are those controls typically determined?

A.11. As I previously discussed, specific erosion controls for storm water management will be determined upon final design of the Project and in accordance with the General Permit. Each type of control has a specific capacity to function properly and controls are chosen based on the final site layout and construction sequence. The time of year, the amount of disturbed area exposed at any one point during construction, topography of the site and other factors can influence the selection of the appropriate control. In addition to the erosion and sediment control plan that is prepared upon final design of the Project, the General Permit requires regular inspections of erosion and sediment control practices. If a control is found to not function as intended, the under-performing control will be replaced by a more effective control within a specific time frame as required by the General Permit.

Q.12. What will be the impact of the Project on stormwater flows after construction is complete?

A.12. Minimal. Based on my experience performing hydrologic studies that include watersheds ranging in size from 1 to 60 square miles, including a flood study related to a solar facility in Ohio, and after reviewing the Application, the proposed changes to land use in this Project will not result in an increase in runoff.

Q.13. Why do you believe that the impact of the Project on stormwater flows after construction will be minimal?

A.13. This project contributes to a specific drainage area, also known as a watershed. The watershed in a hydrologic study is characterized by multiple factors. One factor is the size of the

drainage area which will not change as a result of the construction of the Project. Another factor is the shape of the watershed, which, again, is not changing. Construction of the Project is not changing drainage divides or appreciably changing the size or shape of the watershed. Another factor is the physical characteristics of the site soils, which can have an influence on the infiltration rate. Infiltration is one component of the hydrologic cycle which describes how water interacts with the earth. Construction of the Project will not appreciably change the site soils. The final factor, land cover, is the only factor that will change as a result of construction of the Project. The land cover is largely being converted from a farmland and cropland use to one that is completely covered in low height vegetation (grasses and pollinator friendly wildflowers) which will actually result, in most cases, in a reduction of runoff, if not the same amount of runoff. Grass is a great best-management practice for managing erosion and sediment runoff and managing stormwater runoff from a project site. The presence of the solar panels as impermeable surface on part of the Project Area does not change this conclusion.

Q.14. Would you anticipate that any controls would be necessary to manage stormwater post-construction?

A.14. I would not, given the minimal impact to post-construction storm water from the Project that I previously discussed. That said, Nestlewood is required to continue to examine the Project's potential impact on stormwater flows post-construction to confirm the absence of impact, and work with Ohio EPA as necessary to ensure that stormwater in the Project Area is properly managed.

Q.15. Does Condition 31 in the Joint Stipulation adequately provide for management of any post-construction stormwater flows?

A.15. Yes. Condition 31 was added to the Joint Stipulation February 4, 2020. It reads as follows:

> If one acre or more of ground is disturbed, the Applicant shall obtain from Ohio EPA a "General Permit Authorization for Storm Water Discharges Construction Associated with Construction Activities" (also known as a Construction General Permit). Following the completion of final project engineering design, the Applicant shall perform pre- and post-construction stormwater calculations to determine if post-construction best management practices are required, based on requirements contained in Ohio EPA's Construction General Permit. The calculations along with a copy of any stormwater submittals made to the Ohio EPA shall be submitted to the Clermont County Building Inspection Department and Brown County Soil & Water Conservation District. The Applicant will also provide confirmation that it incorporated guidance from the Ohio EPA's document "Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays" dated October 2019 to the Clermont County Building Inspection Department and Brown County Soil & Water Conservation District. If post construction storm water best management practices are required, the Applicant will submit construction drawings detailing any stormwater control measures to the Clermont County Building Inspection Department and the Brown County Soil & Water Conservation District, as applicable, no less than seven days prior to the applicable construction activities.

This condition obligates Nestlewood to obtain coverage under the Ohio EPA Construction General Permit and to evaluate what post-construction practices may be necessary, as I previously discussed. This condition also obligates Nestlewood to submit documentation of its supporting calculations to the Clermont County Building Inspection Department and Brown County Soil & Water Conservation District. Finally, Condition 31 requires Nestlewood to provide confirmation that it incorporated guidance from Ohio EPA's "Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays" to those two local agencies. Among other items, this guidance provides that, in some cases, stormwater at a project can be managed through the standard post-construction practices from the Ohio EPA Construction General Permit. It also recommends the use of low- and slow-growing grass varieties. Condition 31 will help to ensure that post-construction stormwater flows are appropriately managed, and that if any post-construction control

measures are required, that they are reviewed, approved and maintained in accordance with Ohio EPA regulations, and that local agencies are aware of those measures.

Q.16. If drain tile in the Project Area is damaged as a result of construction of the Project, would that change your conclusions about the management of post-construction stormwater runoff?

A.16. No. First, as discussed in Mr. Bonifas' testimony, Nestlewood has an obligation to repair promptly any drain tile that is damaged, pursuant to both commitments made in the Application as well as Joint Stipulation Condition 18. Second, even if drain tile is damaged, it will actually result in a decrease in downstream runoff. Without the tile functioning, the water has no place to go after it enters the soil. The drain tile's purpose is to do a more efficient job of taking surface water, that would have otherwise become groundwater, by infiltrating it into the ground and then piping it to a downstream location. Additionally, the amount of storm water runoff that flows over land is just simply a function of the ground cover, whether it's vegetation or something impervious like asphalt. Ground cover has a greater impact on how much and how fast rainfall and runoff flows across the surface of the ground than the presence or absence of drain tile. Whatever is going to go into the ground and ultimately be either carried away by a drain tile or not carried away by a drain tile is a function of the properties of the soil and how quickly it can allow that runoff to infiltrate into the soil, not whether the drain tile is functional or not.

Q.17. Does this conclude your testimony?

A.17. Yes, it does.

CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to this case. In addition, the undersigned certifies that a courtesy copy of the foregoing document is also being served upon the persons below via electronic mail this 10th day of February 2020.

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Summary: Testimony Direct Testimony of Matt Marquis electronically filed by Mr. MacDonald W Taylor on behalf of Nestlewood Solar I LLC