EDR

Memorandum

To:	Joshua Baird, Senior Manager, Development AES Clean Energy
From:	Thomas FJ Dussing, PE
Date:	July 18, 2022
Reference:	Stormwater Pollution Prevention Plan (SWPPP) Requirements for Hemlock Ridge Solar
EDR Project No:	20011

This memorandum has been prepared in response to the Town of Barre's July 5, 2022 Petition for Party Status and Issues for Adjudication (Petition). According to the Petition, issues proposed for adjudication by the Town of Barre are related to the potential for significant and substantial changes to the Facility layout or material conditions in the Draft Permit to comply with stormwater pollution prevention plan (SWPPP) and Fire Code access requirements. This memorandum specifically addresses the Town's concerns associated with the SWPPP.

Page 5 of the Petition, under the Issues Proposed for Adjudication section, states that the "stormwater management design for the Facility does not comply with design guidance outlined in the New York State Stormwater Management Design Manual" and "revisions to the Facility design necessary to achieve compliance could have a significant impact on the Facility layout". As an offer of proof, the Petition includes as Exhibit B, the July 1, 2022 Affidavit of Mary Barker Steblein (Steblein Affidavit).

Paragraph 14 of the Steblein Affidavit concludes with the following:

> "In my professional opinion, based on past correspondence between LaBella and the NYSDEC Regional Office, the DEC could interpret the overlap of treatment practices… as potentially exceeding the capacities of the filter strips, and therefore not complying with the design guidance outlined in the Design Manual… This implication could have a significant impact on the project layout because greater spacing would be necessary between access roads and solar arrays to accommodate additional filter strips. To ensure there is no significant impact on the Facility layout, the Applicant should verify if the practices could overlap while providing adequate treatment and verify that no additional soil disturbance and

> associated impacts will be needed to accommodate additional space consideration if the treatment areas must be separated."

It should first be noted that this conclusion is speculative and is based on the potential that the NYSDEC *could* interpret treatment practices as *potentially* exceeding capacities and design guidance. This conclusion then opines that the Application should verify if the practices (i.e., use of vegetated filter strips) could overlap while providing adequate treatment. It is EDR's professional opinion that vegetated filters strips for access roads can provide adequate treatment when placed within the footprint of the solar array. NYSDEC Memorandum Regarding Solar Panel Construction Stormwater Permitting and SWPPP Guidance, dated April 5, 2018 (NYSDEC Solar Memorandum), references the Maryland Department of Environment (MDE) Stormwater Design Guides – Solar Panel Installations (MDE Solar Design Guide). The MDE and NYSDEC identify that the solar panels should be treated in a manner similar to roof-top runoff. EDR notes that there is a substantial difference between a solar panel and a traditional building roof-top in terms of water quality and quantity management. The difference is a roof (on top of the building envelope) covers the ground, thereby eliminating the potential for filtering/infiltration by way of sheet flow. Solar panels are spaced to permit vegetation to grow beneath the panels, allowing for the filtering/infiltration of upgradient areas by way of sheet flow. The vegetation under solar panels provides for the preservation of large-vegetated areas. EDR further notes that the widths of access roads for most solar projects, including Hemlock Ridge, are less than a third of the 75-foot of impervious sheet flow area that is permitted to discharge on a vegetated filter strip per the New York State Stormwater Management Design Manual (Design Manual), dated January 2015.

It should also be noted that the Steblein Affidavit is based on the assumption that filter strips will be used as the only stormwater runoff treatment practice. The Preliminary Stormwater Pollution Prevention Plan (Preliminary SWPPP) dated June 2021 and included as Appendix 13-B to the Siting Application states, "If, based on site conditions roadside drainage is collected in swales, this runoff will be directed to a level spreader to return the runoff to sheet flow, then to a filter strip. Alternatively in the final design, based on site conditions, the swales may be designed as dry swales that will provide the required Water Quality Volume (WQv) and Runoff Reduction Volume (RRv) for the contributing areas." Therefore, as indicated in the Preliminary SWPPP, treatment measures other than, or in addition to, vegetated filter strips have been contemplated for the Facility. These options consider the NYSDEC Solar Memorandum, MDE Solar Design Guide, and the Design Manual and are briefly described below. The selection and final design of post-construction stormwater management will be completed during the development of the final *issued for construction* drawings and SWPPP.

In addition to the discussion above, please note that the NYSDEC allowed a *reduced filter strip width* for other large scale utility projects, where the use of vegetated filter strips that are approximately equal to the width of the adjacent gravel access road was permitted by a NYSDEC Regional Office. This is a deviation from the NYSDEC Stormwater Design Manual and may be proposed for this project with the respective NYSDEC Regional Office prior to filing the Notice of Intent to obtain coverage under the current NYSDEC SPDES General Permit for Stormwater Discharge from Construction Activity.

Other stormwater management options allowed under the NYSDEC General Stormwater Permit and available to this project during final design document development include:

- Stormwater collection and discharge to a filter strip – There are opportunities to collect stormwater in road-side-swales, and direct the water to a level spreader, which would generate sheet flow discharge over a reserved vegetated filter strip area.
- Dry swales – Section 8.1 of the Preliminary SWPPP identifies dry swales as an alternative stormwater quality management practice for this project. This practice may be used in the locations where there is suitable space between the access road and the solar array.
- Limited Use Pervious Gravel Access Roads – The NYSDEC approved a limited use pervious access road design which eliminates the need for post-construction stormwater management for applicable areas of access road. This practice includes limitations for compaction and protection from sedimentation.

Based on the information presented in this memorandum, there are various options of post-construction stormwater management practices, based on the Facility layout as set forth in the 94-c Application, that may be included in the Final SWPPP to meet WQv and RRv requirements.