

MEMORANDUM

TO: **Bryan Healy, Village of Croton-on-Hudson Village Manager**

CC: **Dan O'Connor, Village Engineer; Linda Whitehead, Village Attorney**

FROM: **Nicholas Vamvas, Senior Civil Engineer**

DATE: **January 6, 2022**

RE: **Hudson National Golf Club/Matrix Development, LLC – Solar Project – Engineering Review**

The following are our comments on the applicant's latest submission. The following items were reviewed for conformance with the Village code, NYSDEC stormwater design requirements, and general engineering and natural resource protection best practices:

- Matrix Development response to public comments, dated January 3, 2022,
- Matrix Development response to Chazen Companies (now LaBella Associates), dated January 3, 2022,
- Matrix Development Alternative Solar Site Evaluation – Old Driving Range, dated December 23, 2021,
- Site Plan Proposed Subdivision/Solar Array System prepared for Hudson National Golf Club dated April 22, 2019 revised December 29, 2021 sheet 1 of 7 sheets,
- Overall Map, Proposed Subdivision/Solar Array System prepared for Hudson National Golf Club dated January 22, 2020 revised December 29, 2021 sheet 2 of 7 sheets,
- Tree Plan, Solar Array System prepared for Hudson National Golf Club dated March 25, 2020 revised December 29, 2021 sheet 3 of 7 sheets,
- Tree Replanting Landscape Plan, Solar Array System prepared for Hudson National Golf Club dated March 25, 2020 revised December 29, 2021 sheet 4 of 7 sheets,
- Tree Schedule, Solar Array System prepared for Hudson National Golf Club dated February 25, 2020,
- Erosion Control Plan, Solar Array System prepared for Hudson National Golf Club dated July 2, 2020 revised December 29, 2021 sheet 6 of 7 sheets,
- Detail/Notes, Solar Array System prepared for Hudson National Golf Club dated July 2, 2020 revised December 9, 2021 sheet 7 of 7 sheets,
- Exhibit #1 Solar Panel Plan Require Tree Removals, Solar Array System prepared for Hudson National Golf Club dated December 28, 2021,
- Exhibit #2 Slope Map of Disturbed Area, Solar Array System prepared for Hudson National Golf Club dated December 28, 2021, and
- Exhibit #3 Slope Map of Panel Areas, Solar Array System prepared for Hudson National Golf Club dated December 28, 2021.

COMMENTS ON MATRIX RESPONSE TO PUBLIC COMMENTS

1. Ambient Temperature Impact – the applicant's response is based on a study published by the Institute of Electrical and Electronics Engineers (IEEE). All IEEE publications are independently peer reviewed by at least two reviewers. LaBella takes no exception to the applicant's response to the concern about ambient temperature as it is based on an independently developed study published in an industry-trusted source.
2. National Audubon Society – We have no comments.
3. Steep Slope Construction – We agree that the installation of ground screws will have little impact on steep slopes.
4. Steep Slope Experience – We have no comment on the experience of Matrix or Mr. Mastromonoco. LaBella does, however, have first-hand experience with Terrasmart's ground screw racking system on sites with steep slopes. In our experience, the ground screws have performed as well as described in the Matrix letter and in the Terrasmart sell sheets provided.
5. Steep Slope Examples – We have no comment.

COMMENTS ON MATRIX RESPONSE TO CHAZEN COMPANIES

1. The applicant added check dams to proposed flow paths to help control storm flows. There is a large portion of the eastern array that sits in an existing channelized area. It is recommended that check dams or some other form of runoff control be provided in this area to mitigate storm flows as some slopes are exceed 20%.
2. The applicant has adequately addressed the open comments except for those noted to be discussed during review by the Planning Board.

COMMENTS ON REVISED SITE PLANS

No additional comment except as noted in the above Matrix Response to Chazen Companies.

COMMENTS ON SOLAR EXHIBITS

1. It is unclear what Exhibit #1 demonstrates as the plan is identical to the tree plan in the site plan set but shows the removal of 300+ trees fewer. The applicant should clarify why this was submitted.
2. We have no comments on Exhibits #2 and 3. However, we will note that roughly 1.7 acres (25%) of the total disturbance area is less than 15% slope and roughly 1 acre (29%) of the panel area is less than 15% slope.

NV/nv