



MASTER PLAN REVIEW MEMORANDUM

To: James Lamphere, Town Planner

From: Steven M. Cabral, P.E. and Douglas Allam, P.E.
Crossman Engineering

Date: December 5, 2020

Re: Review of Master Plan Review Submission for the Proposed Stone Ridge at Hopkinton

Brief Background:

The applicant is proposing a 102.6-acre photovoltaic solar energy project, including a 50,000 square foot building with associated parking, well and onsite wastewater treatment system (OWTS). The site is located on Assessors Plat 11, Lot 47A, which is approximately 252 acres in size. The site is currently zoned Commercial Special (CS) and is predominately woodlands. Wetland areas are present in the eastern, northern and western portions of the site. (Note: The MW (ac/dc) of the facility should be identified on the Plans)

The parcel is bounded on the south and west by land in residential RFR-80 Zones, to the north by land in the M Zone and CS Zone and to the east by land in residential RFR-80 Zone and C Zone. A portion of the site is bordered by I-95 northbound.

Crossman Engineering (CE) performed an independent review of the Master Plan Review submission. Our review was based upon the following documents submitted by Cherenzia & Associates, Inc.:

- Cover Letter with Response to Town Planner Comments, dated September 4, 2020
- Owner Authorization Form for Subdivision, dated May 20, 2020
- Application Notification List, dated May 20, 2020
- Master Plan Checklist for Major Land Development and Major Subdivisions, no date
- Master Plan Site Plan C-1, dated Revision 2 08-28-2020
- Master Plan Existing Conditions Plan, dated Revision 1 08-25-2020
- Master Plan Half Mile Vicinity Map, dated 12-11-2019
- Landscape Plans by Traverse Landscape Architects, dated 09-2020
- 500' Radius Map, date printed 05-11-2020

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- List of Property Owners within 500', no date
- Fiscal Impact Statement, no date
- Landscape Narrative by Traverse Landscape Architects, dated August 28, 2020
- Project Narrative, dated August 2020

Following is a summary of our observations/comments on the material received:

1. Checklist Waivers: The Applicant is seeking waivers from the following Master Plan checklist items:

- Construction Schedule
- Proposed Grading
- Stormwater Design (Plans & Computations)
- Soil Testing
- Lighting
- Architectural Schematic Drawings, Floor Plans, Exterior Elevations

Other items normally provided but not received include noise, wildlife migration & habitat assessments, O&M and decommissioning.

The above items represent significant aspects of the project and based on the waiver list, we need to question if the design has progressed to a level suitable for the Planning Board to render a Master Plan decision.

- Checklist Item B.58 (solid waste) is stated to be not applicable. If an outside dumpster is planned, it should be shown.
 - Checklist Item B.59 (hazardous materials) is stated to be not applicable but the fiscal impact statement stated the building will be used for battery storage.
 - Checklist Item B.12, the Half Mile Radius Plan, should show all schools, parks, fire stations and other significant public facilities, where applicable. (Minor item: It is recommended to combine the multiple Plan Sheets into one plan set with sequentially numbered sheets.)
 - Checklist Item E.19 (Agency Contact) requires the applicant to contact the local agencies to seek written comments on the Master Plan. Agency input was not yet provided.
 - Existing buildings and significant above ground structures are shown on the Plans but it would be beneficial to label the use of those buildings (single family, commercial, etc.).
- 2. Stormwater Design:** Although the designer is requesting a waiver of the drainage design until the Preliminary Stage, we note that the panels are not aligned parallel to the contours, therefore

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the designer will need to address how runoff will reach the proposed stormwater system in a nonerosive manner.

3. Zoning Table (Sheet C-1): The area of solar panel and impervious coverage should be stated.

4. 500' Radius Map: We recommend that all lots, the 500-ft radius and the sheet scale be labelled. The lots that don't appear to be labeled include:

- Map 8, Lot 36
- Map 11, Lot 47B
- Map 8, Lot 36
- Please label Map 11, Lot 49A

Typically, road names, schools, parks, fire stations and other significant public facilities (if any) would be pointed out.

5. Project Narrative:

- Under Stormwater Analysis there is a statement “crushed stone drives within the solar array are considered pervious due to their low use.” Based on observations at other solar facilities, crushed stone drives tend to become filled with sediment. Therefore, unless a maintenance plan of cleaning the stone layers is planned, we no longer agree with that assumption.
- Under Stormwater Analysis there is a statement “based on similar projects, capturing 50% of the area developed a solar and providing at least 5,000 cubic feet of storage (including 1 foot of freeboard) per disturbed acre contributing to the design point is sufficient to provide peak flow mitigation of stormwater. The statement will need to be justified with a detailed analysis at each discharge point. The actual system sizing will vary depending upon the outcome of standard hydrograph and flood routing analysis.
- In Appendix E, the NRS Freshwater Wetland Delineation Letter states that “wetland features were GPS located and although this is not considered a survey, it is a reasonable approximation of the resource areas for preliminary planning purposes”. For final design, we recommend that the wetland flags be located and certified by a land surveyor.
- In Appendix E, the NRS Freshwater Wetland Delineation Letter on page 2 states that the intermittent stream (multiple) and River (Canonchet Brook) were not flagged. We recommend that the land surveyor confirm that the edge of all streams and rivers were field surveyed.
- In Appendix I, Pre-Development and Post-Development Drainage Watershed Maps are provided. When the actual drainage analysis is prepared, we recommend that the impact to each abutting property be addressed.

6. Site Plans:

- The Typical Solar Layout Insert shows a 15-foot-wide crushed stone access drive. We understand that access is subject to Fire Marshal review but we recommend a 20-foot access drive to meet a standard fire lane width.
- Notes stating “no records of well location found” were observed on the plans. We understand that access onto private property is not always available but (if not yet performed), we recommend a search of RIDEM OWTS records for potential well locations.
- The Plan calls out “Approximate Narragansett Trail” on the site and Note 5 states that existing trails are present on the property and shall be located for future permitting. We recommend confirmation of their significance and if others have rights to those trails.
- An existing historical cemetery (HP043) is shown with a note “proposed design shall maintain all required setbacks.” The required setbacks should be shown on the Plan.
- The Limit of Disturbance (LOD) Line is near the edge of the solar panels. We recommend confirmation if the applicant will be seeking to remove shade trees beyond the LOD.
- The total acreage of woodland to be cleared should be listed.

Existing Conditions Plan

- The submission includes a Class I Limited Perimeter Boundary Survey and a note states the topography compiled from RIGIS LIDAR mapping and referenced to NGVD-88 vertical datum. For final design, we recommend that the accuracy of the Existing Conditions Plan and Topography be certified by a professional land surveyor, especially in areas with the new building, grades changes and new stormwater systems.
- Typically, a legend is provided to identify all existing features not labelled on the plans such as tree line, perimeter wetland buffer, surface covers not labelled, etc.
- A listing of the FEMA Panel Number is recommended.

7. **Chapter 246 Non-residential Photovoltaic Solar Energy Systems (PSES):** We recommend that the Ordinance requirements be addressed to allow the Planning Board to assess potential impacts. Evident items not addressed include noise, wildlife migration & habitat, O&M and decommissioning. We recommend that any waivers from this Chapter be identified by the applicant.

8. Landscape Plans

- The location of the provided existing site photographs would be helpful.
- The limits of clearing and trimming beyond the solar field need to be identified.

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- Depth of loam on the solar array field should be highlighted and measures to prevent compaction of the underlying soils need to be addressed (to minimize stormwater runoff impacts).
- Proposed Grading Plans need to be provided to confirm the sections provided.
- A single row of evergreens appears minimalistic but without the proposed grading and limit of clearing, the effectiveness is not confirmed.
- We recommend that any buffer waivers from the PSES Ordinance be identified by the landscape architect.