



MIDDLETOWN
Rhode Island

PLANNING DEPARTMENT

TOWN OF MIDDLETOWN

350 East Main Road, Middletown, RI 02842
(401) 849-4027 | MiddletownRI.com

To: Paul A. Croce, Chairman
Planning Board members

From: Ron Wolanski, Town Planner

Date: February 2, 2022

Re: **Public Hearing** – Application of GD Middletown West Main I, LLC for Development Plan Review, including request for waiver from certain design standards of the Middletown Rules and Regulations Regarding the Subdivision and Development of Land Section 521, and recommendation to the Zoning Board of Review regarding special use permit application for development in Zone 1 of the Watershed Protection District, to allow construction of a ground-mounted solar photovoltaic installation on a property located at 1747 West Main Road, Plat 111 Lot 9A.

This item was continued to the February 9, 2022 Planning Board meeting. The TRC met to review revised plans on January 5th (plans previously provided). The Town Engineer requested that Crossman Engineering assist with review of the stormwater management plan, following which TRC review will be completed. Crossman Engineering's comments (attached) were provided to the applicant on January 18th. As of this date I have not received a response from the applicant.

Previously provided information:

The applicant is seeking Development Plan Review for development of a 2.25-megawatt ground-mounted solar photovoltaic array. The project will be constructed on a parcel of approximately 12.7 acres. The applicant has received required RIDEM wetlands approval. Please refer to previously provided plans and documents. Because the development requires the issuance of a special use permit by the Zoning Board of Review (ZBR), the Planning Board's review will result in a recommendation to the ZBR.

- Plans were forwarded to the Technical Review Committee and Roads & Utilities Committee for review and comment. As of this date the TRC has not yet completed its review of the application due to the need for plan revisions and copies of revised plans from the applicant.
- The landscaping plans have been provided to the Middletown Tree Commission for review and comment. Following its review, the Commission provided the following comments: *"The Tree Commission met with Kevin Morin and Hannah Morini and they presented some of the background of the project and the landscaping planned for the area. The Tree Commission supports the approach the group is taking to not remove plantings except invasives and add several species of deciduous and evergreen trees and other native plantings, including the planting of wild flowers among the panel installations. The only concern we had is*

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the use of mountain laurel which traditionally does not do well on the island. We appreciate the care they are taking to consider the needs of the abutters and they are seeking their input. We hope they will continue to work with them as they move forward. We have no other concerns with the project.”

Zone 1 WPD

Note that the project is located partially within Zone 1 of the Watershed Protection district due to the presence of hydric soils (Stissing). The project is located in the Bailey Brook watershed. The following development design standards are required for all developed within the Watershed Protection District per Zoning Ordinance Section 1108:

1. Surface water runoff shall, to the degree feasible, be directed towards areas covered with vegetation for surface infiltration; and
2. Where the premises are partially outside of the WPD, site design shall, to the degree feasible, locate such potential pollution sources as Individual Sewage Disposal Systems outside of the District; and
3. Surface water runoff shall be directed, to the degree feasible, towards the lesser restricted district where the premises is located within two (2) or more districts.

If the Board chooses to move forward with providing a positive recommendation, based on my review of the application materials and the requirements of Article 11, the board should consider the following conditions of approval:

1. The builder is required to comply with the provisions of the town's storm water management ordinance (Chapter 153), and construction site runoff and erosion control (Chapter 151). The use of pervious paving and other methods to promote infiltration of storm runoff should be considered as means of meeting the requirements of Chapter 153.
2. The use of lawn chemicals, fertilizers, and other chemicals with the potential to adversely impact ground and surface water quality shall be prohibited within Watershed Protection District, Zone 1.

Waiver Requests:

Waivers may be considered in accordance with section 908 of the subdivision regulations where; the literal enforcement of one or more provisions of the regulations is impracticable and will exact undue hardship; because of the peculiar conditions pertaining to the land in question; or where such waiver and/or modification is in the best interest of good planning practice and/or design, as evidenced by consistency with the municipality's comprehensive plan and Zoning Ordinance. To proceed, the application would require the following waivers from Article 5 Section 521 for commercial development design:

- 1) 521.1.C. – The project is proposed to be serviced by overhead utility lines, where underground service is required.
- 2) 521.3- D.2 – Required opaque screening along the abutting residential property boundary not provided.

Required Findings:

In accordance with section 309 of the Middletown Zoning Ordinance, prior to granting any development plan review approval, or issuing a recommendation in favor of approval to the Zoning Board of Review, the Planning Board shall find that:

- (1) The granting of approval will not result in conditions inimical to the public health, safety and welfare;
- (2) The granting of such approval will not substantially or permanently injure the appropriate use of the property in the surrounding area or zoning district;
- (3) The plans for such project comply with all the requirements of this chapter and the Regulations, or that necessary waivers from the requirements of the Regulations have been granted;
- (4) The plans for such project are consistent with the Comprehensive Plan; and
- (5) Any conditions or restrictions that are necessary to ensure that these guidelines have been met have been incorporated into the written approval or recommendation.

Please contact me with any questions regarding this matter.

Cc: Applicant
Town Solicitor



DEVELOPMENT PLAN REVIEW MEMORANDUM

To: Ronald M. Wolanski, AICP
Director of Planning & Economic Development

From: Steven Cabral
Crossman Engineering

Date: January 17, 2022

Re: Development Plan Review
GD Middletown West Main Solar
1747 West Main Road, Middletown, RI

Our staff performed a review of the DPR submission for the GD Middletown West Main Solar Project. Our review was based upon the following documents:

- Site Plans by Green Development, Revised 12-29-2021
- Stormwater Management Report by Green Development, dated March 2019
- Operations and Maintenance Plan, Revised February 2021
- Soil Erosion and Sediment Control Plan, Revised March 2019
- Response to Comments Letter with attachments, dated December 29, 2021

Based upon the items provided, we offer the following comments:

1. **Watershed Protection District 1:** The limits of the WSPD 1 are not properly shown and need to be extended into the site to encompass all Se Soils. The WSPD 1 area extends into the western portion of the solar panel area.
2. **Plans and Reports:** The PDF copies of plans and reports did not include the watershed maps.
3. **Water Quality Basins:** Although the two proposed stormwater basins (WQB-1 and WQB-2) are only 0.75 feet deep, proposed contours need to be depicted on the plans. Also, the berm widths on Sheet C1.7 need to be provided and the freeboard between the overflow spillway and top of berm of only 3 inches is insufficient. The ability of the basins to infiltrate within 72 hours should also be addressed and for infiltration basins, a minimum 2 ft of vertical separation should be provided. The soil data indicates that approx. 1 ft will be provided at Test Hole 1.
4. **Water Quality Basin Discharge:** It is not yet demonstrated how the stormwater basins will provide non-erosive outflows (§153.21 (A) (3)). The Water Quality Basin detail on Sheet C1.7 depicts overflow weirs, but it was not evident where these weirs are located on the Grading and Drainage Plan, nor was a detail provided how the weirs will be constructed (i.e., a curbed level spreader with riprap, etc.).
5. **Stormwater Report:** The post-development stormwater runoff analysis that was received assumes the two proposed stormwater basins do not exist. If the BMPs were relatively negligible in size and function (i.e., the stone infiltration trenches) it would be reasonable to omit them from the hydrologic analysis. However, the two basins are approximately half an acre in size and should be included in the

January 17, 2022
GD Middletown West Main Solar
Middletown, RI
Page 2 of 3

HydroCAD calculations as impervious to ensure the peak discharge rates leaving the basins and their unidentified weir locations do not exceed existing conditions during the 2, 10, 25, and 100-year frequency storm events (§153.21 (A)).

6. **Existing versus Proposed Runoff Conditions:** In the analysis when computing peak flows, the future ground cover conditions are projected to be identical to existing ground cover conditions. Since Bailey Brook is known to have flooding issues, we reviewed the assumptions made. First, the CN value for the existing grass is applicable to mowed lawns, golf courses and cemeteries but aerial images suggest that conditions are more of a brush/grass/weed mix, which would have a lower runoff value. For future conditions, we have observed at numerous solar facilities, that the equipment cannot help but compact the surface layers and result in a higher runoff value than assumed for a typical lawn. Compaction of soil layers has been a problem at numerous solar installations (unrelated to Green Development) and impacts runoff rates.



7. **Modeling of Solar Panels:** Historically, RIDEM has accepted the practice of modeling solar panels as pervious surfaces based upon the assumption that sheet flow will occur once precipitation falls from the panel. With the proposed layout, the panel placement is perpendicular to the contours which prevents sheet flow. The designer mitigates this by providing two stone trenches perpendicular to the panels. The concern is that the alignment of the first 180 ft of solar panels will not benefit from sheet flow, therefore should be modeled as impervious, unless additional measures are provided. We also recommend additional stone trenches west of the lowest one.
8. **Swales:** Swales are proposed to divert surface runoff into the infiltration basins. The sizing of the swales and more detail of the swales' grading and slopes are needed on the Plans for construction.
9. **Topography:** Since the topographic data is taken from the State's LIDAR, the topography in the vicinity of the infiltration basins needs to be confirmed prior to construction.
10. **RIDEM Solar Guidance Document, June 2021:** Not all of the recommendations within the RIDEM June 2021 document were evident on the Plans, therefore we recommend that the document be part of approval or that the items be added to the plans. A sampling of items not fully addressed include:
 - 10.1 A detail of the solar panel drip edge turf reinforcement should be provided.

January 17, 2022
GD Middletown West Main Solar
Middletown, RI
Page 3 of 3

- 10.2 The panel spacing needs to be called out on the Plan View to ensure that the panel space is equal to or greater than the maximum plan view surface area of the panels. Based upon the detail on Sheet C1.7, the alignment does not appear to provide adequate spacing for the 12 ft horizontal panel.
- 10.3 Minimum 6-inch loam over surface area is recommended.
- 10.4 The existing A-horizon (topsoil) is to remain and not be removed or compacted.
- 10.5 The bottom of the infiltration basins needs to be a sand/loam mix, instead of loam.
11. **O&M Plan:** There was no information provided in the Stormwater O&M Plan for the inspection or maintenance requirements of the proposed Water Quality Basins.
12. **Temporary Sediment Basins:** The proposed water quality basins are to be used for temporary sediment basins. Usually, this practice is avoided to avoid impacting the basin's ability to infiltrate. Measures to prevent impacts to the infiltration capacity need to be addressed.
13. **Inverter and Transformer Sounds:** (In case it was not addressed earlier) Typically, the location of all inverters and transformers are identified and the resulting noise level at the property lines provided to ensure no impact.
14. **Spill Containment System:** Typically, spill containment details, such as a C.I.Agent Geomembrane Liner, are provided at transformers. Containment did not appear to be addressed.
15. **Buffer Plantings:** Sheet L-101 has gaps in the proposed buffer vegetation. We understand that existing vegetation may be the reason for the gaps. If so, we suggest that the existing screening vegetation be identified, since it is part of the proposed screen.