Plainsboro Township
Minor Site Plan
Application: P25-08
Memo Date: 1/30/2026
PB Meeting Date: 2/17/2026

Planning Board Review Memo

Applicant:	Greenskies Clean Energy, LLC
Property Owner:	West Windsor-Plainsboro Regional School District
Type of Application:	Minor Site Plan
Project:	School District Solar Canopy Project
Location of Properties:	75 Grovers Mill Rd., Millstone River Elementary School Block 2001, Lot 1 95 Grovers Mill Road, Community Middle School Block 1901, Lot 3 90 Grovers Mill Road, High School North Block 1902, Lot 23
Zone:	R-100 Residential Zone District
Present Use of Properties:	WW-P School District Schools
Adjacent Land Uses: (N, S, E, & W)	Millstone River Elementary School (MRS): Cranbury Brook, Residential, Farmland & CMS Community Middle School (CMS): Plainsboro Pond, HSN, MRS, & Residential High School North (HSN): CMS, Township Open Space, Residential & Residential

I. PROJECT DESCRIPTION

The Applicant, Greenskies Clean Energy, LLC, is seeking minor site plan approval to install solar canopy mounted solar arrays over portions of existing parking areas at the Millstone River Elementary School, the Community Middle School, and at High School North. As noted in the application, the project is being proposed for the purposes of generating clean electrical power to reduce dependence on fossil fuels and to provide electric energy cost savings to the School District. The Applicant notes that the project is being proposed in a manner that will result in no change in traffic circulation, parking layout, or parking space count for all three of the School District properties involved.

The Applicant notes that the proposed solar carport systems will utilize a double glass bi-facial solar module that will generate energy from both sides of the solar panels installed on canopy structures that the Applicant refers to as using either a "*cantilever tee-shaped design*" or a "*canopy design*." Consistent with the Township design standards for solar energy canopy installations, all columns and beams will be constructed using high quality components, consisting of boxed vertical structural elements, with a high-quality paint finish. Unlike the early solar energy canopy installations in town (e.g., Munich Re's), the proposed solar energy canopies will have solar inverters mounted to the boxed vertical columns instead of within fenced enclosures. The switchgear equipment, when not located inside a school's electrical room, will be screened with an attractive fence enclosure (High School North). Under canopy lighting will be installed to replace light pole fixtures that will be removed to install the solar energy canopy structures.

The proposed solar energy facility is not for the exclusive use of the School District but will be interconnected with the electrical grid. The Applicant will explain this in greater detail at the DRC and Planning Board meetings.

Millstone River School

The proposed solar canopy carports at the Millstone River School will be located within the large parking area west of the existing school. Two canopy-type solar carport structures are proposed, both having a two percent slope to the canopy support structure. The columns supporting the canopy structures will be positioned to minimize interference with the existing parking spaces below, with the columns generally located either at the front corner of two adjoining parking spaces or immediately outside of the paved parking lot area. However, some of the columns proposed will be located between two head-on parking spaces, resulting in a reduction of the functional depth of those parking spaces by as much as 1.5 feet (18 feet existing/required,16.5 feet proposed), thereby necessitating a site design waiver for the effected spaces. Based on the PB Engineer's Office review of the proposed

plan, 16 spaces of the total 120 spaces located under the proposed solar canopies at the Millstone River School will include these reduced depth parking spaces.

One of the two carport structures will contain 540 solar modules and the other will contain 646 solar modules, producing a total of 500Kw (AC). The electrical conduit will travel to the existing school and tie into the school electrical room. No switchgear or transformer pads are required for these improvements.

Community Middle School

The Community Middle School proposal includes nine solar canopy carport structures located in the west parking lot. As referenced above, the structures will utilize a cantilevered tee-shaped design, except for three, which will be canopy-type design to accommodate the existing underground stormwater management facilities. Columns supporting the canopy-type structures will be located in concrete islands that will allow the solar canopy to span across parking spaces without interfering with the underground basin operations or maintenance protocols. As proposed at the Millstone River School and at High School North, the columns supporting the tee-shaped canopy structures at Community Middle School will be positioned to minimize interference with the existing parking spaces below, with the columns located either at the front corner of two adjoining parking spaces or between two head-on spaces. Those located between two head-on spaces result in a reduction of the functional depth of those parking spaces by as much as 1.5 feet (18 feet existing/required,16.5 feet proposed), thereby necessitating a site design waiver for the effected spaces. Based on the PB Engineer's Office review of the proposed plan, 12 spaces of the total 155 spaces located under the proposed solar canopies at the Community Middle School will include these reduced depth parking spaces.

The nine solar canopy structures at Community Middle School will contain a total of 1,272 solar modules, producing 565 Kw (AC). Electrical conduit serving the structures will run along the ends of the parking islands and connect directly into the school's electrical room. No switchgear or transformer pads are required for these improvements.

High School North

At High School North five solar canopy carport structures are proposed in the west parking lot. As proposed at the Millstone River School, the columns supporting the canopy structures at this site will also be positioned to minimize interference with the existing parking spaces below, with the columns located either at the front corner of two adjoining parking spaces or between two head-on spaces. Those located between two head-on spaces will result in a reduction of the functional depth of those parking spaces by as much as 1.5 feet (18 feet existing/required,16.5 feet proposed), thereby necessitating a site design waiver for the effected spaces.

Based on the PB Engineer's Office review of the proposed plan, 68 spaces of the total 350 spaces located under the proposed solar canopies at High School North will include these reduced depth parking spaces.

Each of the five solar canopy structures will have 492 solar modules, producing a total of 1,000 Kw (AC). The electrical conduit will run along the ends of the carport structures to a fenced-in concrete pad that will support switchgear and transformer equipment. The conduit will then leave the concrete equipment pad and run along the front of the school to another fenced-in equipment pad before tying into the school's existing electrical room.

II. COMPLIANCE WITH TOWNSHIP SOLAR ENERGY INSTALLATIONS ORDINANCE:

In association with pre-application discussions between the Applicant and Planning Board staff related to compliance with the Township solar energy installations ordinance, the Applicant proposes the following design features at each of the school sites:

Tee-Design & Canopy-Type Structures

All solar carport structures will either be a "cantilever tee-shape" or "canopy-type" design. The tee-designed carports will have a single row of columns that support the solar modules above. The canopy-type carports will have two rows of columns supporting the canopy structure that supports the solar modules above. The columns will have a raised concrete footing to prevent cars from damaging the columns.

Boxed Columns & Exterior Skirt

All columns will be "boxed" beams per the Township ordinance, with the outer edge of the upper carport structure to have a concealment skirt to give a finished look to the structures.

Paint Finish

A high quality, durable paint designed for such a project will be used on the solar carport columns, structure components, and concealment skirts. The paint will have a semi-gloss or satin finish to facilitate cleaning, the color of which shall be subject to the approval of the Township.

Column mounted inverters

Each of the solar carport structures will have an electrical inverter that will convert DC power to AC prior to entering the conduit runs that extend to the school's electrical equipment rooms. The inverters will be *Solis Three Phase Grid Tied Inverters*, which will be located at the top of the boxed columns, typically located at the end of the carport structures.

Under Canopy Lighting

The solar carports will have under-canopy lighting to comply with the Township's requirements. The fixtures will be mounted to the horizontal beams and, according to a note on the plans (see Sheet 8, 9, and 10 of 16), will follow the same lighting schedule as the existing site lighting of the three school sites.

Conduit Runs

After the electrical conduits exit the column-mounted inverts they will run directly to each school's main electrical rooms or, in the case of Community Middle School, they will run to the proposed switchgear and transformer pads, and then onto the school's main electrical room. All underground conduit runs that travel through pavement will have the asphalt saw-cut and removed. Once the conduit is properly buried, the asphalt will be restored. All conduits that run through a concrete sidewalk or patio area will have the affected area restored. All pervious (lawn or landscaped areas) conduit runs will be restored to original ground cover.

Stormwater Drainage

The solar panels atop of the carport structures will be placed slightly apart from each other, to allow stormwater to flow down in-between them and onto the existing parking lot pavement below. Stormwater will then travel along the existing drainage pattern into the existing stormwater collection system. No negative impacts to stormwater runoff quality or quantity are anticipated due to the solar carport improvements. The low end of the solar carport structures will be fitted with snow guards that will prevent accumulated snow from falling off the carport structure.

III. SITE PLAN AND SUBDIVISION PLAN WAIVERS

A. The Applicant has requested thirty (30) site plan check list waivers and has submitted a list that identifies the requested waivers with an explanation and justification for each. DRC/Staff have reviewed the requested checklist waivers and are of the opinion that such waivers are reasonable and support their being granted.

B. As described in the supplement to the subdivision and site plan checklist waiver request, the Applicant is seeking a site plan parking design waiver (§85-44B(2) to allow a reduction in the depth of a number of the existing parking spaces (18 ft. required, 16.5 ft. propoed) due to the placement of some of the solar canopy support columns at each of the school sites. The concrete base portion of each of the support columns will provide protection from vehices parking in such spaces. According to the Applicant, while the overall depth of the affected spaces will be reduced by not more than 1.5 feet, such parking spaces will be adequate for all but the largest vehicles, which can be accommodated in the remaining existing 18-foot parking spaces, which constitute the vast majority of the available parking at the three sites. **DRC/staff recommend** the granting of this parking design waiver subject to the condition that a concerted effort shall be made by the project's engineers to design the solar canopies at each of the sites such that the support columns are located as close to the corners of existing parking spaces as possible, thereby minimizing the impact of such columns on the existing parking spaces where the proposed solar canopies will be located.

IV. DRC/STAFF COMMENTS AND RECOMMENTATIONS

A. Planning and Zoning Staff

1. The current R-100 Residential Zone regulations identify public schools (see definition of "necessary public utilities and services") as a permitted use and the installation of the proposed improvements as a permitted accessory use.

2. Site improvements to public school facilities directly related to the school's educational role mandated by the state Department of Education, are exempt from site plan review by the Township; however, based on a prior opinion from the Planning Board Attorney, where the nature of the site improvements is such that they are not directly related to the school's educational role, such improvements shall be subject to the Township's site plan review regulations. The latter condition applies to the current proposal to install solar energy carport canopies at the three School District campuses.

3. Planning staff find that the proposed project to install solar energy canopy structures over existing parking areas at the three School District campuses complies with the general site plan standards found in §85-43 of the Township Code; particularly as it relates to Standards A (enhancing the neighborhood), B and G (access to parking), C (fencing and landscaping), and H (staging of project).

4. As noted in the project description of this memo under the comments involving High School North, a switchgear cabinet and a PSE&G transformer are proposed in association with this project. The concrete pad where this equipment will be installed will be enclosed by a six (6) foot tall gray colored composite board fence (Trex fence, Winchester Grey or equivalent). Because the switchgear equipment cabinet is approximately nine (9) feet in height, which is approximately three feet taller than the screen fence enclosure, the Applicant has agreed that the switchgear equipment cabinet will be gray in color, thereby blending with the color of the fence enclosure. DRC/staff support this approach.

5. On Sheet 16 of 16 of the plans there is a note next to the plan detail entitled "Typical Equipment Layout Detail" that refers to a six-foot-high fence with 2 feet by 6 feet white gates. It is recommended that, if possible, the gates be the same gray color as the fence enclosure.

6. The Applicant's plans indicate that the color of the proposed solar canopy support columns, the exterior skirts, and the horizontal support beams will be as approved by the Township. Also, within the same plan sheet (see Sheet 15 of 16), the Applicant notes the following: "Box Beam columns, horizontal I-beams, and exterior skirt to receive high quality paint with semi-gloss finish, color gray as approved by Plainsboro Township." **DRC/staff recommend** the color gray used be medium gray as opposed to light gray color, since the darker value gray color will help conceal the presence of dirt/grime on the structures better than a light gray color.

7. According to the Applicant's plans, all the proposed canopy structures will have a minimum clearance of approximately 14 feet. The Tee-Shaped canopies will have a maximum height of approximately 15½-18½ feet (varies with slope of canopy), and the Carport-Type canopies will have a maximum height of approximately 19 feet. **DRC/staff recommend** that the adequacy of the canopy heights, as related to emergency vehicle equipment circulation beneath the structures, be subject to the review and approval of the Township Fire Chief.

B. <u>Engineering Staff</u>

1. The Applicant's Engineer has submitted circulation plans for the proposed fire truck. The dimensions of fire truck utilized in the circulation plans shall be verified with the Township Fire Official and the plans shall be modified as necessary.

2. The Applicant has indicated in their application that there is an intention to interconnect the systems with the electrical grid. The Applicant shall provide testimony regarding the same.

3. The general construction notes shall be amended to indicate the following:

   a. "Prior to the commencement of any site work, including initial tree removal and grading, a hauling plan shall be submitted to the Township for review and approval for the movement of any construction materials or demolition debris on roadways leading from the Township borders and vice versa. The Applicant shall also provide a narrative to complement the hauling plan.

   b. Prior to construction, a detailed sequence of construction and contractor's staging plan shall be provided to separate and manage construction traffic from other traffic. This will further establish contractor's work and staging areas for the project and shall include but not be limited to items related to the placement of construction office and/or storage trailers, outdoor equipment and materials storage, safety and security fencing, vehicular and pedestrian circulation, installation of underground utilities, portable rest facilities, and construction related signage."

   The above hauling and staging plans shall be reviewed and approved by the Planning Board Engineer's office.

4. As a result of this project, fourteen (14) existing light poles that are within the area of the proposed canopy structures will be removed (2 at the MRS, 4 at the CMS, and 8 at the HSN). According to the proposed lighting plans for the three school sites, the proposed LED lighting on the underside of the proposed canopy structures will provide adequate lighting throughout the parking areas affected by this project.

   The Applicant shall discuss the timing and controls proposed for the under-canopy lighting.

5. Similar to the way the solar canopies were designed and built at Siemens at 755 College Road East, and those approved for installation at 600 and 650 College Road East, the proposed solar canopies will be constructed so that the solar panels mounted on the

top of the structure will have a narrow gap between them, which will allow rain and melting snow to pass through the canopy structures to the ground below and then flow to the nearby storm sewer inlets, consistent with the current pattern of on-site drainage.

The Applicant shall discuss the manner in which de-icing of dripping water from the overhead solar canopies will be handled to avoid potentially hazardous conditions for parking vehicles and pedestrians.

As noted in the Applicant's Engineering report, the improvements will result in increases of the impervious surfaces at each site in the range of 112 square feet to 228 square feet. The Applicant's Engineer shall demonstrate that the existing stormwater conveyance and management systems have available capacity for the increased stormwater runoff resulting from these increases.

C. Township and other Agency Approvals:

1. The Applicant shall discuss required approvals by outside agencies, including the following:

   a. Middlesex County Planning Board
   b. Delaware and Raritan Canal Commission
   c. Freehold Soil Conservation District

2. Copies of applications and approvals, certifications, waivers or letters of no concern as may be required by all agencies having jurisdiction, shall be provided as a condition of final approval and prior to the site disturbance and/or construction.

3. Township departments and staff that have review jurisdiction involving this application or improvements related thereto, include:

   - Planning and Zoning Department:
     Ron Yake, Planner and Zoning Officer
     609-799-0909, ext. 1503

   - Planning Board Engineer's Office:
     Louis Ploskonka, CME Associates
     732-727-8000

   - Code Enforcement/Building Div:
     Brian Miller, Construction Official
     799-0909, ext. 2545

Bill Gorka, Fire Official
609-799-0909, ext.1208

Any approval shall be conditioned upon the submission of revised plans in accordance with the above comments; proof of approval or waivers from all other agencies having jurisdiction; the construction of offsite improvements, if deemed necessary by the Township Committee; the payment of any outstanding escrow fees; compliance with all applicable state and local affordable housing requirements; and the Applicant's engineer providing an estimate for the cost of improvements to the Township in order that performance guarantees and inspection fees can be calculated.

MLUL Clock:

Application Completeness:	01/19/26
Planning Board Action:	02/23/26