

MEMORANDUM

26015/Worthington Planning Board Solar Peer Review

DATE: October 2, 2026
TO: Bart Niswonger, Chair, Worthington Planning Board
FROM: Pare Corporation/Hallam ICS
RE: Technical Memorandum – Peer Review #5, Stormwater Report Dated August 5 2026, Plan set dated August 5, 2026, Acoustic Analysis Dated July 30, 2026.

[Please see BWC Wades Stream, LLC response to comments in blue below.](#)

Pare Corporation has submitted four technical memoranda to the Town of Worthington Planning Board through September 2026. The Applicant submitted a revised plan set dated August 5, 2026, and a revised stormwater report dated August 5, 2026. This Technical Memorandum describes major or noted design and stormwater modeling changes made from the July 7, 2026 to the August 5, 2026 submissions.

1. Comments/Clarifications - Revised Stormwater Report dated August 5, 2026

- The stormwater report includes several major revisions. The reviewer notes that the most recent August 5 Stormwater Management Report does not identify the primary or important changes or differences to the stormwater modeling or report within the Executive Summary. As such, Pare was bound to complete a detailed review of the most current August Stormwater Report and compare it to the July Stormwater Report.

[Response: A summary of changes to the Stormwater Report and IFP Set was provided to the Planning Board on August 18th, outlining the changes from the July 7th report and drawings. It is attached again here for convenience.](#)

- Pare reviewed the updated report and determined it has generally been prepared in accordance with the requirements of Mass DEP Stormwater Regulations and Town of Worthington Zoning Bylaws.

Within the current August 5, 2026 Stormwater Report, Section 1.1.2.1, the report and Wetlands Narrative and reference to Mass DEP requiring filing of a Notice of Intent with the Conservation Commission for the project was eliminated. The prior July 7, 2026 Stormwater Report stated that a MassDEP and superseding order Notice of Intent was required. Apparently, an NOI has been filed with the Worthington Conservation Commission, and one Conservation Commission hearing has occurred.

- Pare has reviewed the Applicant's response (??dates) and notes that an Order of Conditions from the Worthington Conservation Commission is required before the Board has sufficient information to make a final determination on the approval and conditions to be placed on the stormwater plan.

Response: Applicant's NOI application is pending before the Conservation Commission, and Applicant will work directly with the Conservation Commission to ensure compliance with the applicable stormwater requirements. However, under state law, a "permit granting authority in a zoning case" (here, the Planning Board) "may not delegate to another board, or reserve to itself for future decision, the determination of an issue of substance," *Tebo v. Bd. of Appeals of Shrewsbury*, 22 Mass. App. Ct. 618, 624 (1986). In short, the Board may not delay or postpone its own action on the present zoning application until after the Conservation Commission has issued an Order of Conditions.

- Pare noted that the Hydro CAD stormwater modeling and areas of study are both generally the same at 2,484,000 square feet (SF) for the July 7, 20026 and August 5, 2026 submissions. However, the modeled drainage area for the previous February 19, 2026 was 2,046,828 SF. As such, peak flows increased for both the July and August models when compared to the earlier February model. However, the proposed conditions peak flows generally remain less the existing condition peak flows.
- Pare has reviewed the revisions and provide the following comments on compliance with Mass DEP 10 Stormwater Standards:
 - Standard 1 No new untreated discharges. This standard is now not met as a new untreated point source discharge was created in the southwest corner. See comments on plan sheet 4 below.

Response: This discharge location does not discharge directly to a wetland or cause erosion in wetlands (velocity of discharge is below 5 fps during the 100-year storm). The discharge is upgradient and will be discharged to a vegetated buffer (and then to a forested buffer) prior to entering a wetland. No separate calculations are required if Standards 4-6 are met. Compliance with Standard 1 is shown by meeting Standards 4 through 6.

- Standard 2 Peak Flow attenuation. This standard is met in the revised stormwater report.
- Standard 3 Recharge (static calculations). This standard is met in the revised stormwater report.
- Standard 4 Water Quality Treatment Volume. This standard is met by the calculations within the revised stormwater report. However, the Applicant did not include the MassDEP TSS removal worksheets for the grassed swale and organic filter.

Response: Please see attached.

- Standard 5 LUHPPL. This standard is not applicable to this project.
- Standard 6 Critical Areas. This standard is met in the revised stormwater report. There is no discharge to critical areas.
- Standard 7 Redevelopment. This standard is not applicable to this project.
- Standard 8 CPPP. Applicants have provided a written construction period erosion and sediment control plan; however temporary sediment controls

are not clearly shown or called out in the revised plan set sheets.

Response: Temporary sediment controls are shown on the drawings as the Sediment Barrier Line. The controls include a straw wattle or equivalent, the detail is shown on C-501. The project will be covered by a NPDES CGP, therefore, the SWPPP will be prepared for the CGP and provided prior to land disturbance activities as required by Standard 8.

- Standard 9 Long term O & M. This standard is met in the revised stormwater report.
- Standard 10. Illicit Discharge Statement. This standard is not met. The Applicant must provide the required statement.

Response: Consistent with the requirements of the MassDEP Stormwater Standards, this statement will be provided to the Planning Board (and/or Conservation Commission) prior to the discharge of any stormwater to post-construction BMPs. See Standard 10 of the MassDEP Stormwater Checklist, which provides that a “Final Order of Conditions shall require the submission of an Illicit Discharge Compliance Statement prior to the discharge of stormwater runoff to the post-construction stormwater best management practices.”

2. Comments/Clarifications - Site Plan Revisions dated August 5, 2026

- - Sheet 1, Erosion Control Notes. No noted revisions.
 - Sheet 2, Existing Conditions. No noted Revisions.
 - Sheet 3, Grading and Earthwork. No noted Revisions.
 - Sheet 4, Proposed Conditions.
- 3. The July and August sheets were revised to show two (2) clusters of solar panels from a four-cluster solar panel array as shown in February.
- 4. The sheet was also revised in July 2026 to show a vegetative screen on the southeast corner / boundary. Pare notes that the plant species is slightly different from the species called out for the northeast vegetative screen.
- 5. The August 5, 2026, set includes two (2) 15-inch diameter corrugated plastic pipe (CCP) culverts at the extreme southwest corner. This appears to be a new point discharge to wetland flags W2-100 to W2-102. Based on previous meetings and Town requests, it was understood that the Applicant was requested to replace the current existing drainage pipe within the Town right of way to alleviate potential increase runoff but not create a new drainage pipe location and discharge point.

RESPONSE: See answer provided in RTC document dated August 12, 2026.

Discuss the volume and discharge rates anticipated at the culvert southeast of the property line.

Response: The existing Town-owned culvert within the Ridge Road ROW, southeast of the 190 Ridge Road property, is modeled as Design Point DP-SE in the latest Stormwater Report dated August 5, 2026. The stormwater analysis shows that the proposed conditions, peak flow rate and runoff volume, to the existing Town culvert is less than the existing conditions, as demonstrated in Table 1.2 on page 13 of the Stormwater Report.

Also, as discussed at the August 12, 2026 hearing regarding the new point of discharge, the Applicant has designed the stormwater controls with culvert sited within the project's proposed limit of work to alleviate potential increase runoff and not replace Town infrastructure. This design/approach was developed to meet the Highway Department's request to ensure there is a reduction in peak runoff and volume to the existing ROW and culvert. To meet this request, stormwater will be diverted away from the roadside ditch/ROW

and existing SE culvert, and redirected to flow along the southeast edge of the property and through the new culvert under the existing access drive.

- Sheet 5. WS Overlay. No noted Revisions.
- Sheet 6 Access Drive. No noted Revisions.
- Sheet 7. Equipment Pads. In the July 7, 2026 plan, the location of the Equipment pads and BESS was revised to the south side of the access drive when compared to the February plan sheet. Although electrical Equipment remains within the Watershed Protection District (WSPD), the BESS is outside or beyond the WSPD. There were no further revisions noted in the August 5, 2026 sheet.
- Sheet 8 Shadow Analysis. No noted Revisions.
- Sheet 9-10 Details. No noted Revisions.
- Sheet 11 Detail. No noted revisions.

Comments/Clarifications – Acoustic Analysis dated July 30, 2026.

The revised acoustical analysis has been prepared to analyze the acoustic effect of the project on neighboring properties and other sensitive receptors. The initial Acoustic Analysis had incorrectly modeled R2 at the house across the street from the house abutting the site.

The revised analysis is essentially the same as the May 5, 2026 analysis, with the following exception: The modeled location identified as R2 has been changed to the residence abutting the project. As a result, the modeled noise levels for R2 were raised. The result of the modeling is still within the parameters of both the Town of Worthington Solar Bylaw and the MassDEP Noise Policy.

This Technical Memorandum # 5 is intended to be a supplement to Technical Memorandum #'s 1 through #4. As described above, this Technical Review and Memorandum is limited to a review of the materials filed by the Applicant in August 2026 and comparison to the previous July 7, 2026 and February 19, 2026 submissions.

Respectfully Submitted

Christopher Nolan, Senior Project
Coordinator Pare Corp.



08-18-2026

Town of Worthington Planning Board
P.O. Box 247
160 Huntington Rd.
Worthington, MA

Summary of Changes to Stormwater Report dated 08/05/2026– BWC Wades Stream, LLC

On behalf of BWC Wades Stream, LLC (BlueWave), WSP USA Inc. (WSP) respectfully submits this summary of changes to the Stormwater Report Dated August 5, 2026 and the Issued for Permitting (IFP) drawing set dated August 5, 2026, in association with the proposed Large-Scale Ground Mounted Solar Photovoltaic Installation (LSGMSPI, the Project) at 190 Ridge Road, Worthington, MA (the Property). The previous submission used as the point of comparison is dated July 7, 2026 and included the Stormwater Report and IFP drawing set.

Changes to Stormwater Analysis

Since the last stormwater report submission dated July 7, 2026, there have been a few changes to the analysis and design of the stormwater management on site. Below is an overview of these changes:

- Revised the two (2) 15" CPP culverts beneath the site access road (near the site entrance), to two (2) 18" CPP culverts to prevent road overtopping during the design storm.
- Added two (2) 15" CPP culverts in the southeastern corner of the property. Added minor grading to create a short berm along the fence line in the southeastern portion of the site, extending to the existing southern access point. The proposed grading divides the runoff flowing south parallel to Ridge Road and directs runoff south towards the new 15" CPP culverts and out of the Ridge Road right-of-way.
- The stormwater report was updated to reflect these changes (narratively in Section 1.2.3 and calculations in Section 4) as well as the addition of Table 1.2 which provides peak runoff rates at design points internal to final design point. The previous Table 1.2 is now Table 1.3 showing the peak rates and runoff at the final design points.

Changes to IFP Sheets

The changes to the most recent IFP set dated August 5, 2026, include updates to reflect the above stormwater revisions. The following sheets reflect these updates:

- C-101 (Sheet Number 3) – Access Road culvert updates



- C-102 (Sheet Number 4) – Culvert and grading updates
- C-103 (Sheet Number 5) – Culvert and grading updates
- C-104 (Sheet Number 6) – Access Road culvert updates
- C-105 (Sheet Number 7) – Access Road culvert updates

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Olivia Crosby'.

Olivia Crosby, PE
Assistant Vice President, Civil Engineer

CC: BlueWave Solar; BWC Wades Stream, LLC; PARE Corporation

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Access Road and Equipment Pad

TSS Removal Calculation Worksheet	B	C	D	E	F
	BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
	Vegetated Filter Strip >25 feet	0.10	1.00	0.10	0.90
	Organic Filter	0.80	0.90	0.72	0.18
		0.00	0.18	0.00	0.18
		0.00	0.18	0.00	0.18
		0.00	0.18	0.00	0.18

Total TSS Removal =

82%

Separate Form Needs to
be Completed for Each
Outlet or BMP Train

Project: 190 Ridge Road
Prepared By: Olivia Crosby
Date: 10-08-26

*Equals remaining load from previous BMP (E)
which enters the BMP