



Review Memorandum

To: Tim Carr – Acting Chief Planner
David Hediger – Senior Planner
Land Use Planning Commission
22 State House Station
Augusta, Maine 04333-0022

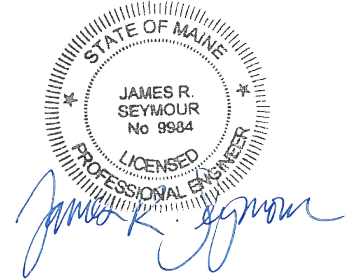
From: James R. Seymour, P.E. - Sebago Technics, Inc.

Date: September 30, 2026

Subject: LUPC Stormwater Review (Application #: SP 4103)

Project: Loaf Land Subdivision (STI # 260393)
Mountain Road and Hedgehog Trail
Coplin Plantation, Tax Map 7 Lots 2 and 12 (D-RS)

Applicant: Loaf Land Development, LLC.



I. Project Description & Background

On September 23, Sebago Technics, Inc. (Sebago) received revised application materials for a 24.5 -acre subdivision located in Coplin Plantation in Franklin County, Maine by Maine-Land Development Consultants (MLDC), Inc. The revised materials include responses to the Sebago Review Memorandum dated August 21, 2026, and as such, Sebago has reviewed the following items as they pertain to phosphorus control, stormwater management, and general engineering practices:

- Revised Section 33: Phosphorus Control narrative and calculations
- A HydroCAD Pre- & Post-Development culvert analysis
- Revised 10-page plan set dated September 17, 2026.
- A Response Cover Letter dated September 22, 2026

It is our understanding that the project will consist of the creation of 12 single family residential lots, a common area lot, and a gravel road. Vehicular Access to the subdivision is proposed by Mountain Village Road, an approximately 1,100-foot gravel road, having a spur road, Courtney Lane, approximately two thirds down the length with both roads ending at hammer head turnarounds. A new cross culvert for Mountain Road is proposed to direct runoff from the development away from the immediate downstream property/driveway. Power is proposed to be brought to the lots by means of underground conduit that runs along the shoulder for Mountain Village Road and southerly fills slope for Courtney Lane. Power for Lots 1 and 2 shall be the responsibility of the individual lot owner.

II. Technical Review

The following sections outline compliance with the Maine Department of Environmental Protection (MDEP) Best Management Practices (BMP) Manual and LUPC Chapter 10 regulations. The information provided in response to our review memorandums dated June 3, 2026, and August 21, 2026, has addressed many of our previous comments or provided information as to how these comments will be addressed in the future. Please refer to the two previous Review Memorandums for an explanation of the methodology used when reviewing and to view all the past technical review comments.

III. Assessment and Recommendations for Improvements to reduce Phosphorus Export:

The applicant has provided a revised Phosphorus Treatment Plan and supporting calculations utilizing four filter ponds that have been designed to meet the requirements of the MDEP Stormwater BMP Manual Volume II & III. It is our understanding that the commission may consider design options such as the use of Structural BMPs as an engineering practice for this subdivision due to wooded buffers being impractical given the steep slope of the terrain and other requirements of Chapter 10.25.E.2.b and Chapter 10.25. L.4.b. However, determination and or acceptance of the design and engineering practices are not deemed final until the entire application has been reviewed and approved by LUPC.

We offer the following comments on the revised phosphorus treatment plan and MDEP worksheet calculations:

1. Worksheet 2 lists 4 Lots for FP2 and 6 lots for FP3 whereas the narrative lists 5 lots for both Filter Ponds. Additionally, the drainage plan does not show the soil types and boundaries, so it is difficult to evaluate whether the correct export coefficients are being used for the lots. Below you can see for FP2 Lots HSG-C 4 lots (6th row), and on the Line FP4- Lots HGS C , 2 lots are listed (last row). These differ from the narrative and should be clarified in the report.

Project name: LoafLand Subdivision			Development type: SFR Residential			Sheet # 5
Land Surface Type or Lot #(s) with description	Acres or # of lots	Export Coef.	Pre-treat. Export (lbs P/year)	Treat. Factor	Post-treat. Export (lbs P/year)	Description of BMPs
Untreated - Road (High Export)	0.042	1.750	0.074	1.000	0.074	No BMP
Untreated - Lots, HSG D	0.000	0.230	0.000	1.000	0.000	No BMP
FP1 - Road (High Export)	0.192	1.750	0.336	0.300	0.101	Filter Pond #1
FP1 - Lots, HSG C	0.000	0.200	0.000	0.300	0.000	Filter Pond #1
FP2 - Road (High Export)	0.104	1.750	0.182	0.250	0.046	Filter Pond #2
FP2 - Lots, HSG C	4.000	0.200	0.800	0.250	0.200	Filter Pond #2
FP2 - Lots, HSG D	0.000	0.230	0.000	0.250	0.000	Filter Pond #2
FP3 - Road (High Export)	0.076	1.750	0.133	0.270	0.036	Filter Pond #3
FP3 - Lots, HSG D	6.000	0.230	1.380	0.270	0.373	Filter Pond #3
FP4 - Lots, HSG C	2.000	0.200	0.400	0.250	0.100	Filter Pond #4
			0.000		0.000	
			0.000		0.000	
	12.414	Pre-PPE	3.305	Post PPE	0.928	
			After Mitigation:		0.905	

MLDC Response: *Pond 2 & Pond 3 both treat 5 lots each, as listed in the narrative and depicted in the Drainage Plan. The ponds were sized approximately. Worksheet 2 has updated to reflect this. In addition, the soils have been overlaid onto the Drainage Plan with color for clarity.*

Sebago Response: No further comment.

2. Since the applicant is proposing to use structural BMPs to meet the phosphorus standards, the BMPs should also meet the design requirements of the BMP manual in general. We offer the following comments on the underdrained soil filters design:
 - a. The Filter Design calculation worksheets should include at what elevation the desired water quality volume is achieved for each Filter Pond.

MLDC Response: *The elevation has been added to the Filter Pond Design worksheets for reference.*

Sebago Response: No further comment

- b. The submitted hydrographs show that the emergency spillway is being activated for all the Ponds in the 10-year storm event. We would like to reiterate the importance of slope stability and energy reducing measures for these spillways.

MLDC Response: *Stone berm level-lip spreaders have been added to each pond design to slow down and distribute flow evenly.*

Sebago Response: No further comment.

- c. Based on the updated calculations the forebays should be included for all the filter ponds shown. Currently, we can only see pond 1 showing the forebay location, and all ponds for treatment should include the installment of forebays. In some cases, the presence of two channels entering one pond should be addressed as to how the engineer plans to place forebays in line to collect heavier sediment and reduce velocities prior to entering the actual pond filter containment. The data to support the forebay sizing was included but not shown on the plan where it would be installed upstream of all the proposed filter ponds.

MLDC Response: *Sediment forebays and elevations have been added to the plans.*

Sebago Response: Filter Ponds 2 & 3 do not show sediment forebays for the secondary swales entering the pond. The sediment forebay for the secondary swale entering Filter Pond 4 appears to be missing the callout on Plan Sheet C6.4.

IV. General Plan/Engineering comments:

1. Sebago Response: Based on the installation of two 24 inch diameter culverts at this location and the discharge for the underdrained treated volume from FP-1, we are still unable to assess if this point discharge will have any impact on downgradient properties. We did not receive computations to review for pre or post development conditions looking at flooding conditions so it is difficult to assess if the rerouting from the existing condition will have any detrimental downgradient impacts onto abutting lands. The applicant states they are installing a level-lipped spreader to be located in the Mountain Road ROW but we did not see that improvement located on the plans. It is possible that runoff was channeling in the existing road trail and may have detrimental impacts at the intersection during large rain events, but based on the contours and plans attached for review it is difficult to assess the volume. The applicant shall provide appropriate culvert sizing to select the two-24 inch culverts to cross the new road and Mountain Road. The inclusion of the underdrained discharge from the treated runoff from the 4-inch line exiting the pond is likely a minimal influence on the final flow through the last 24-inch culvert. That evidence or statement of downstream impacts, eventual discharge from the parcel property lines, and next water course that the proposed drainage enters should be stated and presented by the applicant. We can decipher from the pond discharge in Hydrocad sheets included, that the larger flooding flows exit on the westerly side of the pond and discharge into an offsite wet area on the abutting property (Fish Jr and Jenny Burch land) which does by the ACME Land Surveying, LLC plan indicates by the topography provided. In principle we agree with the improvements but need calculations, evidence, and engineering statement that the discharge point does not negatively impact downstream landowners, then currently in the existing condition.

MLDC Response: To provide further evidence indicated no adverse impacts, we have modeled pre- & post- condition at the Filter Pond 1 area and Mountain Road cross culvert. Attached in this response are drainage exhibits and HydroCAD modeling. This modeling represents the 25-year storm event and a slight decrease of flows at both analysis points.

Sebago Response: We have reviewed the HydroCAD analysis performed by the applicant and we agree with the general methodology and findings of the analysis. Below are comments to address minor inconsistencies in the model:

- a. *The total areas printed on pages 2 and 3 of the HydroCAD report are roughly double the size of the study area. We believe this is likely due to including in the pre- and post- development in the same report printout. These should be printed independently to be able to properly compare the area and land coverage in the pre- and post-development state.*

- b. The culverts should be labeled on the on Sheet D3.2 “Entrance Drainage Analysis Post-Development” to match the node names in HydroCAD for clarity.**
 - c. The defined storage for the inlet of The Mountain Road cross culvert starts at elevation 1,309 which is a foot above the invert of the culvert at elevation 1,308. The designer should verify that this is the intended inlet condition.**
 - d. The cross culverts for Mountain Village Road at STA 2+75 and 8+80 are depicted on the plans as 15” culverts but are modeled as 18” culverts in HydroCAD. The designer should confirm which is correct and that there is adequate cover over the pipes. Additionally, the culvert at STA 2+75 would likely be flowing full in the 25-year event if the intended size is 15”.**
 - e. The cross culverts for Mountain Village Road at STA 7+45 and STA 8+80 do not have their secondary overflow spillway modeled like the rest of the culverts.**
2. Sebago Response: The stream profile appears to indicate the need for a 7-foot-tall wing wall on the outlet side. The plans should better depict the design intent of this wingwall and how wetland impacts will be avoided during its construction. Silt fence is also shown through the wetland in this area with no stated wetland impact in this area.

MLDC Response: The design plans have been updated accordingly. The wing wall design has been reduced to consist of a 4’ wall, an acceptable height for boulder wall installation by the contractor. The silt fence and grading has been adjusted to provide more clearance adjacent to wetland. Lastly, the steeper sections have been indicated on C3.1 Grading Plan.

Sebago Response: No further comment.

Additionally, the design plans include lengths of side slopes that are at 2H:1V or steeper. It should be shown on the grading plan which slope stabilizing measures are to be used and their extents where the side slope exceeds 3H:1V.

MLDC Response: The design plans have been updated to reflect those areas.

Sebago Response: No further comment.

3. The proposed electrical conduit is shown running down the centerline of the roadside ditch for Mountain Village Road. The designer should consider moving the conduit to either side of the ditch to avoid shallow cover and water intrusion.

MLDC Response: No exception has been taken to this recommendation and it is reflected in the associated documents.

Sebago Response: No further comment.

V. Summary:

Our review of the project finds that in general the strategies to address Phosphorus are acceptable. It is our understanding that the commission may consider design options such as the use of Structural BMPs as an engineering practice for this subdivision due to wooded buffers being impractical given the steep slope of the terrain and other requirements of Chapter 10.25.E.2.b and Chapter 10.25.L.4.b. However, determination and or acceptance of the design and engineering practices are not deemed final until the entire application has been reviewed and approved by LUPC. With the possibility to use these design options for a structural BMP, we can agree with their calculation of the Project Phosphorus Budget (PPB) of 0.929 lbs./year **and agree with the provided phosphorus worksheets which estimate a Project Phosphorus Export (PPE) of 0.905 lbs./year provided the minor comments from this memo are addressed/answered.**

All comments provided by Sebago Technics are to be for LUPC use and not meant as final determinations but merely offer guidance. Final decisions, if appropriate, are left with the LUPC at their discretion.

Respectfully Submitted,
SEBAGO TECHNICS, INC.

A handwritten signature in black ink, reading "James R. Seymour". The signature is fluid and cursive, with a long horizontal stroke at the end.

James R. Seymour, P. E.
Western and Lakes Region/Sr. Manager