

Memorandum

To: Galen Weibley
Director of
Town of Kennebunkport, Maine
6 Elm Street
Kennebunkport, ME 04046

From: Aubrey L. Strause, PE and Craig Burgess, PE (Acorn Engineering, Inc.)

Date: February 19, 2024

Subject: Glen at Goose Rocks Final Subdivision Application
K. J. Trudo Properties, LLC
Tax Map and Lot 15-1-1B, Kennebunkport, ME 04046

Overview:

Acorn Engineering, Inc., was requested by the Town of Kennebunkport to review the proposed Glen at Goose Rocks Residential Subdivision project, submitted by applicant K.J. Trudo Properties, LLC, and prepared by Atlantic Resource Consultants. The Professional Engineer of Record for the design is Jason Vafiades, PE.

The preliminary application proposed the improvements to a 43.5-acre lot located off Goose Rocks Road near the intersection with Log Cabin Road (Tax Map & Lot 15-1-1B) in Kennebunkport, Maine. The proposed work included developing nine (9) new single family home lots with associated driveways and yards, as well as the creation of one (1) open space lot with two 15-foot wide easements for access to the open space lot. The preliminary application proposed the construction of five (5) gravel wetlands and no-disturbance forested stormwater treatment buffers on each lot as stormwater best management practices (BMPs). Natural resources on the parcel include four vernal pools, substantial wetlands, and two stream segments that join on the property. The application proposes two wetland crossings and two stream crossings. The preliminary application proposed 10,200 SF of wetland impacts, which would require a Natural Resources Protection Act (NRPA) Tier 1 permit. Acorn submitted a review of the Preliminary Subdivision Application to the Town on January 25, 2023.

On February 12, 2024, you asked us to review the Final Subdivision Application submitted on January 5, 2024 to determine whether the resubmittal addressed our original comments adequately. The Final Subdivision Application proposes the following:

- 5.81 acres of new developed area, consisting of:
 - 2.81 acres of new impervious area
 - 3.0 acres of new landscaped area.
- 8,548 SF of wetland impact (a reduction from the Preliminary Application);
- One wetland crossing;
- Two stream crossings;

- Use of the following for stormwater treatment:
 - Three (3) bioretention filter cells,
 - One (1) gravel wetland,
 - No-disturbance forested stormwater treatment buffers to treat each of the nine house lots.

Our review of the Final Subdivision Application included the following documents:

- Cover letter from Atlantic Resource Consultants (ARC), dated January 5, 2024, which accompanied the Final Subdivision Application;
- Elements of ARC's Final Subdivision Application (dated January 5, 2024), including:
 - Attachment B (Response to Acorn Engineering Review Comments)
 - Section 1, Development Description
 - Section 7, Deed Restrictions/Covenants, including Exhibit 7.1 (Declaration of Covenants, Conditions, and Restrictions for Glen at Gooserocks [sic]) and Exhibit 7.2 (Forested Buffer Declaration of Restrictions).
 - Section 12, the Stormwater Management Report (dated April 2023)
 - Section 13, Wildlife Habitat
 - Section 15, Additional Permits, including
 - Maine DEP Stormwater Law Permit #L-30067-NJ-A-N
 - Maine DEP NRPA Tier 1 Wetland impact permit #L-30067-TC-B-N
 - Section 17, Site plans. These are dated January 8, 2024 and prepared by ARC (stamped by Jason Vafiades, PE) with the exception of:
 - The Plan of Land (Sheet 1), dated October 26, 2022 and prepared by JPS Professional Services;
 - The Subdivision Plans (Sheets S1 and S2), dated January 5, 2024 and prepared by JPS Professional Services.

Sheet numbers and names of plans reviewed by Acorn are as follows:

<u>SHEET INDEX:</u>	
1 OF 22	COVER SHEET
1 OF 1	BOUNDARY SURVEY
2 OF 22	EXISTING CONDITIONS PLAN
1 OF 1	SUBDIVISION PLAN
3 OF 22	OVERALL DEVELOPMENT PLAN
4 OF 22	SITE INFRASTRUCTURE PLAN
5 OF 22	LOT DEVELOPMENT PLAN I
6 OF 22	NATURAL RESOURCES IMPACT PLAN
7 OF 22	PLAN & PROFILE ROADWAY 1
8 OF 22	PLAN & PROFILE ROADWAY 2

9 OF 22	EROSION & SEDIMENT CONTROL NOTES
10 OF 22	EROSION & SEDIMENT CONTROL DETAILS
11 OF 22	SITE CIVIL DETAILS
12 OF 22	STORMWATER BMP DETAILS I
13 OF 22	STORMWATER BMP DETAILS II
14 OF 22	LOT: 1 STORMWATER TREATMENT PLAN
15 OF 22	LOT: 2 STORMWATER TREATMENT PLAN
16 OF 22	LOT: 3 STORMWATER TREATMENT PLAN
17 OF 22	LOT: 4 STORMWATER TREATMENT PLAN
18 OF 22	LOT: 5 STORMWATER TREATMENT PLAN
19 OF 22	LOT: 6 STORMWATER TREATMENT PLAN
20 OF 22	LOT: 7 STORMWATER TREATMENT PLAN
21 OF 22	LOT: 8 STORMWATER TREATMENT PLAN
22 OF 22	LOT: 9 STORMWATER TREATMENT PLAN

COMMENTS

The following sections represent re-review of the 20 comments we provided in January 2023 on the Preliminary Subdivision Application, plus one new comment (#21).

General

1. *Resolved/addressed*
2. *Resolved/addressed*

Comments on Water Quality

3. Maine DEP Stormwater Law permit #L-30067-NJ-A-N states that the area approved to be constructed is 5.42 acres of developed area, of which 2.61 acres are impervious. This is consistent with the Linear and Non-Linear Treatment tables on Page 7 of the April 2023 Stormwater Management Report.

However:

- The application states 6.1 acres will be developed, which is higher than what was permitted by Maine DEP.
- The Area bullets on Sheet C-101C states that 5.81 acres of developed area will be constructed, of which 2.81 acres are impervious, which is higher than what was permitted by Maine DEP.

Local and state approval documents should be consistent with what's shown on the plans.

- a. The Lot Area Table on Sheet S1 (the Subdivision Plan) and Sheet C-101 should be revised to show developed and impervious area *by lot* (using the values in the Non-Linear Treatment table on Page 7 of the Stormwater Management Report), including converting values from square feet to acres.

- b. The Lot 9 Stormwater Treatment Plan should be re-numbered C-313, since Sheet C-312 reflects Lot 8.
- c. Sheets S1, C-101, C-101B, and Sheets C-305 through C-313 (the nine developed lots) should refer to Maine DEP Stormwater Law permit #L-30067-NJ-A-N and to the maximum developed and impervious area approved each lot.
- d. Section 5.4 of the HOA Declaration of Covenants and Restrictions should be revised to state that the non-disturbance forested stormwater treatment buffers are also the responsibility of each Owner. The HOA Declaration of Covenants and Restrictions should also include a reference to the Forested Buffer Declaration of Restrictions (attached to the application as Exhibit 7.2) and include it as an attachment to the Declaration. The Declaration otherwise does not inform a potential buyer of the stormwater treatment buffer restrictions on each lot, and that buyer would be unaware that those restrictions apply.
- e. Section 5.4 of the HOA Declaration of Covenants and Restrictions refers to Maine DEP Stormwater Law permit #L-30067-NJ-A-N but should also include spaces for the Cumberland County Registry of Deeds book(s) and page number(s) on which each of Sheets C-305 through C-313 (the nine developed lots) have been recorded.
- f. Acorn has not reviewed a Post-Construction Inspection and Maintenance Plan for proposed forested stormwater treatment buffers.
- g. Acorn has not reviewed a Post-Construction Inspection and Maintenance Plan for proposed bioretention filter cells, a BMP that was added since our initial review. We understand that Maine DEP reviewed this as part of their review.

4. *Resolved/addressed*

5. *Resolved/addressed*

- 6. The applicant is proposing forested stormwater buffers for the treatment of Lots 1 through 9, per the Non-Linear Treatment Stormwater Management Treatment table included in the Stormwater Management Report. Acorn understands that Maine DEP has already approved the buffer flow path locations and lengths shown on Sheets C-305 through C-313 (the nine developed lots) based on plans submitted in October 2022. We are not commenting on the proposed buffers, but request the following corrections based on our original comments:
 - a. Please correct the Buffer flow path length calculation on Sheet C-305 to show that a 70-foot long flow path is required.
 - b. Please turn contour labels on for Sheet C-309.

7. *Resolved/addressed*

Hydrologic Model and Water Quantity

8. *Resolved/Addressed*

9. *Resolved/Addressed*

- 10. Acorn understands that Maine DEP has already approved the gravel wetland and three bioretention cells, but offer the following observations based on our original comments.
 - a. Acorn observed that in some places, porosity of filter media is modeled as 33% instead of 30% (as requested by Maine DEP). It is not clear what impact this has, if any, on the pre-and post-development peak flow rate calculations.

- b. Per the Maine DEP BMP Manual, water quality volume calculations can consider storage within the media for bioretention cells and gravel wetlands. The two wetland cells for gravel wetlands can hold up to 45% of the volume. Calculations suggest that 6" of storage was modeled within the gravel wetland which is acceptable, but the volume calculations are incorrect when comparing the stage storage volume to the listed water quality volume.

For the three bioretention cells, calculations appear to account for the storage within the full media build-up, when only six inches of storage is allowed per the Maine DEP BMP Manual. We recommend revising the calculations to only account for six inches of water quality volume. Make sure that calculations account for correct overflow/outlet control structure elevations.

- c. In the HydroCAD model, an orifice was added to the gravel wetland design to lengthen the draw down time of the treatment volume. The orifice should be depicted in the plan view and the detail for the gravel wetland.
- d. Freeboard calculations were not provided for the gravel wetland.
- e. *Resolved/Addressed*
- f. The detail for the outlet control structure depicts a 6"-12" reducer. We recommend the model updated to include a six-inch vertical orifice routed to a 12-inch pipe outlet.

The plan and detail depict the bottom of the gravel wetland to be at elevation 69.00, and the bottom of the wetland layer and top of transitional layer at elevation 68.33. The 12" pipe outlet in HydroCAD is modeled at elevation 68.67.

- 11. Plan view still shows a direct connection (pipe all the way through the BMP instead of through the media), although the cross-section view is correct.

12. *Resolved/Addressed*

Comments on Natural Resources

Acorn understands that Maine DEP NRPA PBR #75792 reflects Department approval of impacts under Sections 2, 9, and 10 of Rule Chapter 305, with grading as shown on plans submitted in October 2022.

13. *Resolved/Addressed*

14. *Resolved/Addressed*

15. *Resolved/Addressed*

16. *Resolved/Addressed*

17. *Resolved/Addressed*

18. *Resolved/Addressed*

19. Refer to Acorn Comment #3, above.

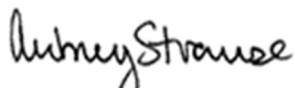
20. *Resolved/Addressed*

Acorn has one new comment on the Final Subdivision Application:

21. Acorn observed that the Stormwater Management Report refers to the parcel as Lot 15B-1-1 instead of Lot 15-1-1B. Consistent with comments provided by former Director of Planning and Development on December 6, 2022, this should be corrected.

Please call me at (207) 641-7704 with any questions about this review.

Sincerely,



Aubrey L. Strause, P.E.
Municipal Services Coordinator
Acorn Engineering, Inc.

cc: Craig Burgess, P.E. (Principal, Acorn Engineering)