

**DURHAM PLANNING BOARD
REGULAR MEETING AGENDA
Durham Town Offices, 6:30 p.m.
February 1, 2023**

NOTE: No public comment will be taken on individual applications at the meeting unless the Board schedules a formal public hearing with required notice posted. Comments on applications can be submitted in writing to the Town Planner and will be forwarded to the Planning Board and the applicants.

1. Roll Call & Determination of a Quorum
2. Amendments to the Agenda
3. Acceptance of the Minutes of Prior Meetings (January 4, 2023)
4. Informational Exchange on Non-Agenda Items:
 - a) Town Officials
 - b) Residents (Public comment will be taken)
 - c) Non-Residents (Public comment will be taken)
5. Continuing Business
 - a) Completeness Review of Final Plan Application for the Deer Creek Crossing Subdivision Map 7, Lot 32A (Public comment will not be taken)
 - b) Substantive Review of Final Plan Application for the Deer Creek Crossing Subdivision Map 7, Lot 32A (Public comment will not be taken)
6. Other Business:
 - a) Board Discussion of Public Hearing Date for Draft Land Use Ordinance Amendments (Public comment will not be taken)

3. Acceptance of the Minutes of Prior Meetings (January 4, 2023)

1. Roll Call & Determination of a Quorum

In attendance: John Talbot (Chair), Juliet Caplinger (Vice Chair), Allan Purinton, Anne Torregrossa and George Thebarga (Town Planner).

Absent: Ron Williams and Tyler Hutchison

Guests: Joseph Roy (Conservation Commission)
Alan Plummer (Code Enforcement Officer)

2. Amendments to the Agenda:

- **Add Elections of Officers for the Planning Board**

Allan Purinton nominated John Talbot for Chair, Anne Torregrossa seconded. Motion carried 3-0.

Allan Purinton nominated Juliet Caplinger as Vice-Chair, Anne Torregrossa seconded. Motion carried 3-0.

3. Acceptance of the Minutes of prior meeting (December 7, 2022)

Allan Purinton moved to accept the minutes from December 7, 2022 meeting as presented. Juliet Caplinger seconded. Motion carried 3-0-1 Abstention (Anne Torregrossa absent from previous meeting.)

4. Informational Exchange on Non-Agenda Items:**a.) Town Officials**

- George Thebarga explained that if the town issues 45 or more building permits for new homes or the Planning Board approves 100 or more lots, an addendum to the Comprehensive Plan calls for a moratorium and consideration of a new growth management plan.
- The Town issued 34 permits for new homes in 2022. this number has increased in the past few years, up from the average of 15 permits per year.

b.) Residents – None**c.) Non-residents – None**

5. Continuing Business

a.) Completeness Review of Final Plan for the Deer Creek Crossing Subdivision Map 7, Lot 32A (Public comment will not be taken)

- The applicant asked that the Board table the application until the next meeting, February 1, 2023. The applicant is still waiting for State permits.

Allan Purinton moved to table 5a and 5b until February 1, 2023, at the request of the applicant. Juliet Caplinger seconded. Motion carried 3-0-1 (1 abstention).

6. Other Business:

a.) Board Discussion of Draft Land Use Ordinance Amendments (Public comment will not be taken)

Town Planner Notes:

- A public opinion survey on the three options is being conducted on the Town Website.
- The (3) Three Options are:
 - Be less restrictive than current zoning and the minimum State requirements per recommendations in the Comprehensive Plan and the need for more housing options.
 - Be more restrictive than current zoning as allowed by the new State requirements based on concerns over impacts of allowing more housing units.
 - Be neutral and simply adopt the new State requirements.
- The Town Planner has drafted Ordinance amendments to move in any of the three policy directions.
- The Conservation Commission held a public information meeting on proposed changes to the alignment of the Resource Protection District on December 6, 2022. At that meeting, there was discussion of putting two warrant article questions on the 2023 Town Meeting warrant related to realignment of the Resource Protection District.
- The first warrant article on changes to the Resource Protection District would be to fully implement the Comprehensive Plan recommendations to all

property in Durham meeting the RP criteria, whether inside or outside the current District boundary.

- The second warrant article on RP would only apply those criteria within the existing RP boundary, which would result in removal of land inaccurately mapped as floodplain in 2002. This would be a fallback position in case the first warrant article fails, giving relief to affected landowners.
- This seems the most logical approach to take on the affordable housing law questions. A first warrant article can fully implement the Comprehensive Plan recommendations for expanding housing diversity in Durham and if that warrant article fails, a second proposed article can simply bring Durham into compliance with the new State law (which Durham will need to comply with regardless of language in the Land Use Ordinance).
- The third land use policy area to be addressed is simplifying and clarifying the process for approval of roads serving multiple lots outside of subdivisions.
- Currently the Road Commissioner and Code Officer approve the road design and construction, and the Planning Board approves the maintenance agreement.
- The Historic District Commission has requested more time to review the proposed overhaul of the historic preservation regulations, and no draft amendments will be considered at the 2023 Town Meeting.
- The Selectboard is looking for recommendations from the Planning Board on the proposed Ordinances prior to the April Town Meeting.

Joe Roy (Conservation Commission) discussed with the board that the Conservation Commission would advocate for adopting the 2018 Comprehensive Plan recommendations.

Juliet Caplinger moved to propose to the Selectboard, Part 1A – to apply Resource Protection criteria per 2018 Comprehensive Plan recommendations. Allan Purinton seconded, motion carried 4-0.

John Talbot moved that if Part 1A fails, then the alternate Part 1B, which is to establish clear criteria and to correct mapping errors (pull out properties that have no Comprehensive Plan data supporting the Resource Protection) be adopted. Allan Purinton seconded, motion carried 3-0-1 (1 abstention).

The Board discussed the following amendments:

- Part 2A – Amendment of the Land Use Ordinance to implement Comprehensive Plan recommendations for housing diversity and comply with a new State Affordable Housing Law
- Part 2B – Amendment of the Land Use Ordinance to comply with a new State Affordable Housing Law (Alternate to Part 2A)

- Part 3 – Amendment of the Land Use Ordinance to clarify the process for street acceptance

The Town Planner will prepare an Amendment at the next meeting, on Wednesday, February 1, 2023, that clarifies (Part 3) private roads will only be accepted at Town Meeting.

7. Adjourn: The meeting adjourned at 8:32 pm.

5. Continuing Business:

- a. Completeness Review of Final Plan Application for the Deer Creek Crossing Subdivision Map 7, Lot 32A.**

TOWN PLANNER COMMENTS:

- The application was found to be incomplete at the November 2 meeting due to the following items:
 - DEP approval of the new stream crossing and removal of the existing one.
 - ACOE approval of the new stream crossing.
 - MDOT permit for the road entrance.
 - Assessor's map and lot number of the subject parcel on the recording plan.
- The applicant has submitted copies of their DEP and ACOE permit applications for the stream crossing.
- The applicant has submitted a stormwater permit application to DEP.
- The applicant submitted a street entrance permit application to MDOT.
- Per Section 6.8.C of the Land Use Ordinance, the applicant is to obtain approvals from outside agencies prior to submission of the final plan.
- The Planning Board tabled the application request at the January meeting at the applicant's request.
- The Town Planner has prepared draft complete and incomplete letters for Board consideration.



TOWN OF DURHAM
630 Hallowell Road
Durham, Maine 04222

**Office of Code Enforcement
and Planning**

Tel. (207) 353-2561
Fax: (207) 353-5367

PRELIMINARY SUBDIVISION APPROVAL

Deer Creek Crossing Subdivision

Conditions of Approval

1. Per Section 6.6.C, the Planning Board will request technical peer review of the following submissions:
 - a. Determination of the need or lack thereof for a high intensity soil survey to confirm the wetland delineation and engineering designs;
 - b. Recommendation on the optimum location of the proposed stormwater detention basin with respect to the stream and associated wetlands;
 - c. Review of the engineering designs for road construction, utilities, stormwater management, erosion & sedimentation controls, and the proposed fire pond; and,
 - d. Review of the engineer's construction cost estimates for the project infrastructure.
2. Per Section 6.6.L.1., the applicant shall make the following changes to the preliminary plan as directed by the Planning Board decision:
 - a. A right of way shall be extended from the turnaround to the southwest tract boundary for future road connection; and,
 - b. A fire pond meeting the requirements of Section 6.16.C shall be constructed near the road turnaround but outside of the proposed road right of way extension.
3. Per Section 6.6.L.3., the Board considers that the engineer's construction estimates and performance guarantee for the project will include the following common improvements:
 - a. Access road construction;
 - b. Electrical service;
 - c. Stormwater management system;
 - d. Erosion and sedimentation control system; and,
 - e. Fire protection system.
4. Per Section 6.7.C.3. the applicant submitted a certified boundary survey showing all existing easements. That survey clearly indicated the areas of questionable title and calculation of the area that should be deducted from the proposed open space due to questionable title. The Board granted a waiver of the preliminary plan submission requirements to allow the applicant to place monuments on the corners of the subject parcel dividing Lot 32A from Lot 32L of Tax Map 7 after final approval when the monuments are set for the individual lots.
5. Per Section 6.7.E., to address concerns raised at the public hearing and in written comments, the applicant shall provide the following additional information with the final plan as required by Planning Board to verify compliance with the subdivision standards:

- a. Survey Accuracy – See draft approval condition #4 above.
 - b. Drainage Concerns – Engineering peer review of the stormwater and erosion control plans
 - c. Location of Stormwater Basin – See draft approval condition #1.c above.
 - d. Sensitivity of Stream Crossings – DEP & ACOE permits for stream restoration and new stream crossing.
 - e. Concern for Impacts on Aquifer – Review by the Durham Code Officer of standards applicable to portions of project in the Aquifer District boundary.
 - f. Concern for Continuing Zoning Violations – Review by the Durham Code Officer for zoning violations.
6. Per Section 6.8.A. the final plans shall be submitted within six (6) months of preliminary plan approval and shall be consistent with the preliminary plan except for changes required by the Planning Board or outside reviewing agencies (such changes will be reviewed per the subdivision review criteria & standards). Failure to submit a final plan application within six (6) months shall require resubmission & re-review of the preliminary plan. Prior to expiration of the preliminary plan approval, the applicant may request an extension accompanied by explanation of the causes for delay, documentation of progress made in fulfilling the preliminary plan approval conditions, and confirmation that the Land Use Ordinance has not been amended such that changes affect the project approval.
7. Per Section 6.17.A & B., an erosion and sedimentation plan meeting the requirements of Appendix 2 shall be submitted with the final plans.
8. Per Section 6.17.C., areas intended for vegetation clearing shall be shown on the final plan plans to support the stormwater management plan assumptions and required buffers along water bodies shown on the recording plan and referenced in the plan notes.
9. Per Section 6.18.B.1 & 2., the final plan application shall include required MDOT permits. The applicant shall ask MDOT to address the safety of the intersection offset from Patriot Way.
10. Per Section 6.18.C.2., the applicant shall obtain and submit with the final plan written approval for the street name and all other requirements of Article 13. by the Durham Street Addressing Officer.
11. Per Section 6.18.D.2., the final plans shall include engineered drawings of the road meeting the requirements of Appendix 1.
12. Per Section 6.21.A.1 & 2., the final plan shall delineate and note the limits of tree clearing.
13. Per Section 6.21.B.1., the applicant shall seek consultation with the Maine Department of Conservation, Agriculture, and Forestry's Maine Natural Areas program for information on rare and exemplary botanical features in the project area and shall provide any response from the Department with the final plan application.
14. Per Section 6.21.B.2., the applicant shall seek consultation with the Maine Historic Preservation Commission for information on any historic or prehistoric resources in the project area and shall provide any response from the Commission with the final plan application.
15. Per Section 6.21.C., the applicant shall seek consultation with the Maine Department of Inland, Fisheries, and Wildlife for information on habitat for species appearing on the official state or

federal lists of endangered or threatened species in the project area and shall provide any response from the Department with the final plan application.

16. Per Section 6.21.D., the final recording plan notes and the deeds shall include notice of the clearing restrictions for lots including areas covered by shoreland zoning or resource protection.
17. Per Section 6.23.A. and 6.34.A, the applicant shall submit an engineer's construction cost estimate to cover the full costs of all required improvements, including roads, utilities, stormwater management, fire protection water supplies, and erosion and sedimentation controls along with a letter of commitment from a lending institution referencing said engineer's cost estimates.
18. Per Section 6.28.B., the final plans shall include the DEP stormwater permit and shall be consistent with requirements of that permit.
19. Per Section 6.32.D. the final plans shall include copies of covenants, articles of incorporation, and homeowner association bylaws using the template prepared by the Town Attorney or a version reviewed and approved by the Town Attorney at the applicant's expense.
20. Per Section 6.33.B.8, the applicant shall provide detailed grading plans for the building sites on Lots 6 and 7 which shall become part of the final subdivision approval conditions that can be amended with further subdivision review.
21. Per Section 6.34.B., the final plan application shall include the proposed form and amount of the performance guarantee needed to cover the costs of all improvements noted in COA #17 above, which can be a cash deposit or irrevocable letter of credit in a form satisfactory to the Town Attorney (template provided). Any other proposed performance guarantee must be reviewed by the Town Attorney at the applicant's expense.



TOWN OF DURHAM
630 Hallowell Road
Durham, Maine 04222

***Office of Code Enforcement
and Planning***

Tel. (207) 376-6558
Fax: (207) 353-5367

NOTICE OF COMPLETE APPLICATION

Date: February 1, 2023
Name: Jack Doughty
Address: 231 Flying Point Road, Freeport, Maine

Dear Mr. Doughty;

The Planning Board of the Town of Durham has reviewed your application for final subdivision review of the Deer Creek Crossing subdivision on Hallowell Road (Map 7. Lot 32A). In accordance with Section 6.8.F, the Board has determined that your application is complete and ready for formal review.

The Planning Board has scheduled a meeting for at 6:30 p.m. at which time your application will be reviewed for conformance with the criteria and performance standards of the Town of Durham subdivision regulations.

Sincerely,

George Theborge, Town Planner



TOWN OF DURHAM
630 Hallowell Road
Durham, Maine 04222

***Office of Code Enforcement
and Planning***

Tel. (207) 353-2561
Fax: (207) 353-5367

NOTICE OF INCOMPLETE APPLICATION

Date: February 1, 2023

Name: Jack Doughty

Address: 231 Flying Point Rd. Freeport, Maine

Mr. Doughty:

The Planning Board of the Town of Durham has reviewed your application for preliminary subdivision review of a project on Hallowell Road (Map 7, Lot 32A). In accordance with Section 6.8.F., the Board has determined that your application is incomplete, and the Board cannot begin a formal review of your application until all information stated in the application checklist is submitted.

For your application to be considered complete and adequate for review by the Planning Board, the following materials must be submitted:

- a. Section 6.8.C.2 – DEP approval of the new stream crossing and removal of the existing stream crossing
- b. Section 6.8.C.3 – ACOE approval of the new stream crossing
- c. Section 6.8.C.4 – MDOT permit for the road entrance

Respectfully,

George Thebarger, Town Planner

5. Continuing Business:

b. Substantive Review of Final Plan Application for the Deer Creek Crossing Subdivision Map 7, Lot 32A.

TOWN PLANNER COMMENTS:

- The applicant submitted a response to the peer review comments on November 23, 2023.
- Substantial changes have been incorporated based on the peer reviewer's comments.
- A point-by-point response is provided by the applicant in the packet for the initial and follow up peer reviews.
- Peer review comments and applicant responses where there is disagreement between the peer review and applicant's engineer are highlighted in yellow, as well as points where the response and/or proposed modification affect facts upon which the Planning Board granted preliminary approval (e.g., removal of stream crossings for the trails).
- The Planning Board is not bound by the opinions of the peer reviewer and can judge between their input and the applicant as to whether the burden of proof has been met for compliance with the criteria and standards of the Ordinance.
- Points of divergence in the professional opinions can be addressed at the point of Board deliberation of the draft findings and conclusions and a position established by majority vote of the Board.
- The final points of divergence between opinions of the engineers include the level of design detail needed for the stream road crossing, calculations of drainage areas that affect road ditch treatment, demonstration of adequate water supply for the fire pond, and finalization of all details and plans for Planning Board approval and signing.
- The subdivision recording plan dated October 17, 2022 does not include an easement for the proposed stormwater treatment area on the land to be retained by Dean Smith, therefore the Homeowners Association will lack legal right to enter the property to do required maintenance of the underdrain treatment system.
- That subdivision recording plan does include an easement for the fire pond indicating that the easement is to be conveyed to the Town of Durham (Section 6.16.C.4). The Homeowner's Association is fully responsible for maintaining both the stormwater treatment and fire protection water supply systems (as well as the road and open space), and all final plan documents should clearly indicate that responsibility and authority. The access easement gives the Town authority to access the pond and take corrective action in cases of failure of the Homeowner Association to maintain the pond in working order.

- The applicant's engineer considers that the level of detail and accuracy advocated by the Town's peer review engineer and Town Planner is excessive, and he seems to assume that contractors will work out the details in the field as conditions warrant. The applicant's engineer acknowledges that the submissions are "not perfect" and asks the Town to overlook such discrepancies so that the project can move forward.
- The Town peer review engineer's and Town Planner's experiences indicate that fully designed, documented, and accurate details assure compliance with the criteria and standards of the Land Use Ordinance. They are also important for proper construction and expedite the construction and inspection processes. Inaccurate or insufficient construction details lead to construction defects, arguments over what the Planning Board approval required, and increased costs of inspection and construction as well as project delays like those being experienced in the review process.
- Per a letter from the applicant's engineer dated October 25, 2022, the applicant is requesting a conditional approval under Section 6.34.C which requires completion of all subdivision infrastructure improvements prior to the sale of any lots or issuance of any building permits. The applicant can return to the Board for posting of a financial performance guarantee for remaining improvements at any point in the construction. They will also need to provide a performance guarantee for the erosion controls and site stabilization. A note to this effect should be placed on the subdivision recording plan.
- The Town Planner has prepared draft of findings and approval conditions based on the preliminary plan approval, the submissions, peer review, and checklist for Board processing of the application.
- The Board can vote to add, delete, or modify any of the draft findings and approval conditions.
- To grant approval, a Board majority must make findings that the applicant has met the burden of proof of compliance with each subdivision criterion and standard.
- The Board can apply approval conditions necessary to assure compliance and should seek applicant input on acceptance of such proposed conditions of approval.
- If a Board majority finds that the applicant has not met the burden of proof of compliance with one or more of the criteria and standards, it should adopt such findings to serve as the basis for denial.

****DUE TO THE LARGE FILE SIZE, SUBMISSIONS FOR DEER CREEK
ARE SEPARATE FROM THE PACKET****

Grange Engineering LLC

New Gloucester, Maine
Grange.Engineering.Me@gmail.com
207 712 6990

George Thebargé
Deer Creek Crossing
Final Approval Application- Comment Response

December 7, 2022

Town of Durham Planning Board,

In response to the peer reviews second round of comments, I have prepared the following letter and supporting documentation.

Thanks,

Charlie Burnham, P.E.
Project Engineer

Attachments:

A – DEP NRPA Permit
B – Plan Set

1. The plan view on sheet C-200 has the stream crossing culvert called out as 48", revise the size.

Note changed to say the 60" arch.

2. Sheet C-305 shows the stream crossing. We recommend that the detail be improved to show the size of the culvert footers and the top and bottom elevations of the footers. It is not clear if the cross section on this sheet is drawn to scale, (no scale provided). It is not clear what the effective cross-section of the new culvert will be as it appears that the top of the arch is set just about at the top of the existing stream banks, which may not be the intent. The culvert that is drawn in the section appears to be a metal "box" culvert shape rather than an "arch" shape. We have concerns that if more detail is not provided, it will be confusing at the time of construction on how to construct this culvert. The notes on this sheet could be confusing because they appear to be generic notes from the USACE General Permit. For example, notes 2.a, 2.b, and 5.2 do not apply to the arch-type culvert that is being installed for this project.

The details have been updated. The culvert could be boxed or arched as long as it spans 60".

3. Sheet C-200 calls out invert-in and invert-out elevations for the culvert, however, since the structure is an open bottom arch, the inverts will be the natural inverts of the stream channel.

Inverts have been removed.

4. The response to prior comment #31 states that General Note 4 on Sheet C-101 has been removed. General Note 4 still indicates that if side setbacks are cleared during the grading of the lots or road, the same number of trees that were removed will be replanted. Our question remains. How will the number of trees that are removed during construction be quantified so the correct number can be replanted. It would be more appropriate to restrict tree cutting in the side setbacks.

Note #4 has been removed this time.

5. Provide a rip rap spillway detail for the ponds.

A note has been added specifying the spillway details on C-303.

6. Response #14 states that separating the roadway runoff from the total runoff would not affect the peak flows. We still recommend that the ditch flows and capacities should be checked as noted in the original comment to verify the stability of the roadside ditches. We also recommend revising the HydroCAD stormwater calcs and culvert capacity calcs to account for the impervious runoff. We performed a quick check of the peak runoff from the roadway, (pavement and ditch), from the southerly side of the road from approximately Station 9+00 to 16+00. The calculated peak flows were 0.12 cfs for the 2 yr. storm, 0.43 cfs for the 10 yr. storm and 0.74 cfs for the 25 yr. storm at the cross culvert to the underdrained soil filter, which are close to your calculated peak flows from the entire site. As stated in the original comment, combining the roadway runoff with the large wooded HSG A areas artificially suppresses the peak flows from the roadway. Additionally, the ditch flows may collect runoff from the developed lots as well.

It is our opinion that the stormwater model as provided took an extremely conservative approach. Subcatchment lines were drawn along the edge of streams and the actual area draining to the Point of Analysis is so large that any changes to our site would have been negligible. We chose to analyze smaller areas and provide treatment in accordance with the sizing standards set forth by the DEP. Each Subcatchment was drawn in accordance with what areas are draining to our points of interest. It is our opinion that despite the difference in smaller storms, the 25-year storm as modeled had a greater peak runoff than the 0.74 mentioned above. Therefore, it is our opinion that the model provides appropriate stormwater quality and quantity treatment.

7. As noted previously, the subdivision plan shall be stamped by the surveyor and the engineer.

The recorded plan will be hand stamped by the engineer and surveyor.

8. As noted previously the transformer easements shall be added to the subdivision plan.

A note was added to the Subdivision Plat requiring that all transformers and public utilities be located inside the ROW. Utilities shown are for permitting purposes only. It is our understanding/experience that CMP will locate the transformers wherever they want them inside the ROW.

9. The use of erosion control blankets for slopes greater than 15% is recommended by the MDEP Maine Erosion and Sediment Control Best Management Practices manual for Designers and Engineers. An erosion control blanket shall be specified for slopes greater than 15% rather than the 3:1 proposed in your response.

Note has been updated.

10. As noted previously, Route 9 should be labelled on sheets C101, C102, C200.

"Hallowell Road" has been added to each plan.

11. Show the stream setbacks on plan sheet C303.

Stream setbacks have been added to C-303.

12. Response #44 states that an NRPA permit application has been submitted. It does not appear that the impact to the stream by the underdrained soil filter has been included in the NRPA application as an impact adjacent to a protected natural resource. The application shall be revised to include the underdrained soil filter impact within the stream setback.

NRPA application has been revised and a copy of the application is attached.

13. The loam and seed on the sloped banks of the underdrained soil filter shall be called out on Detail Sheet C303. A reference to the seeding plan in the erosion control notes should be added to the underdrained soil filter detail for seeding of the soil media.

C-303 has been updated.

14. Response #77 noted that a reference to the Town's Dry Hydrant Standard is on Sheet C-302. A reference to the standards was not found.

A note has been added to the C-302 requiring Fire Chief signoff on all Dry Hydrant materials/equipment prior to installation.

15. The comment to supply a typical house lot erosion control plan was not addressed in the response letter.

A page from the Maine DEP contractor's manual has been included which shows a typical house lot erosion control plan.

16. A MaineDOT entrance permit is pending. The permit shall be submitted to the Town upon receipt.

Still pending.

17. A ditch is required on the right side of the road from approximately 15+00 to 18+00 to direct uphill drainage including potential lots from draining into the road.

Spot grades have been added to show that there is depression along the northside of the road.

Engineering Review Memorandum

To: George Theborge, Town Planner
From: Will Haskell, PE, Gorrill Palmer
Date: December 22, 2022
Subject: Final Submission – Subdivision Application
Project: Deer Creek Crossing Subdivision
Applicant: Jack Doughty

The Deer Creek Final Submission Peer Review Response Package dated December 7, 2022, was reviewed for compliance with the Town of Durham Subdivision requirements as well as generally accepted civil engineering standards and we offer the following comments. The application and plans were prepared by Grange Engineering, LLC.

1. As noted previously, the stream crossing culvert detail does not appear to provide the necessary detail for construction. Sheet C-305 shows the stream crossing culvert. We recommend that the detail be improved to show the top and bottom elevations of the footers. The proposed culvert does not span the existing stream channel as the existing channel meanders over the length of the existing culvert. A new channel will need to be constructed inside of the new culvert. The roadway slopes extend past the culvert ends. We have concerns that if more detail is not provided, there will be confusion for the contractor and the Town's inspector on how to construct this culvert.
2. Submit the USACOE permit to the Town upon receipt.
3. Sheet C-200 has inverts of the stream culvert shown in the profile view. Remove the inverts.
4. A note describing the rip-rap spillway for the grassed underdrained soil filter has been provided rather than a detail. Is the invert of the rip-rap spillway at the top of the rip-rap? An impermeable barrier needs to be installed within the rip-rap to prevent flow through the stone below the invert elevation.
5. No ditch flow calculations have been provided. Based on the ditch slopes and apparent tributary area, it does not appear that the ditches will require rip-rap lining. Since ditch flow calculations have not been provided, we recommend that a geotextile erosion control blanket be placed at the bottom of all the roadside ditches to prevent erosion until the ditch is stabilized with vegetation. Call out the erosion control blanket on the typical roadway section detail.
6. The Applicant has stated that a note has been added to the subdivision plan requiring the installation of electrical transformers within the right of way. A revised subdivision plan has not been provided.
7. Call out seeding of the surface of the soil filter media for the grassed underdrained soil filter on the filter detail.
8. A MaineDOT entrance permit is pending. The permit shall be submitted to the Town upon receipt.
9. As noted previously a ditch is required on the right side of the road from approximately 15+00 to 18+00 to direct uphill drainage including potential lots from draining into the road. The

response stated that spot grades were added to the plans. A revised plan C-201 showing the roadway was not provided.

Please let me know if you want to review and discuss any of the comments.

Sincerely,
Gorrill-Palmer

A handwritten signature in black ink, appearing to read "William C. Haskell". The signature is fluid and cursive, with the first name "William" and last name "Haskell" clearly distinguishable.

William C. Haskell, PE
Principal

WCH/jwa U:\4041_Durham_PR Deer Creek Subdivision\C Corr Out\2022-12-21\2022-12-22 Subdivision Application Review.doc

Grange Engineering LLC

New Gloucester, Maine
Grange.Engineering.Me@gmail.com
207 712 6990

George Thebargue
Deer Creek Crossing
Final Approval Application- Comment Response

November 22, 2022

Town of Durham Planning Board,

In response to peer review and completion review, I have prepared the following response letter and supporting documentation. The peer review provided a lot of good suggestions, which lead to some changes in the profile and alignment of the road. Two additional outside agency permits were submitted and will hopefully have approval by the scheduled planning board meeting or soon thereafter. The project will require a Permit by Rule for disturbing more than an acre and a preconstruction notification for the Army Corps as a result of disturbing wetlands.

The major changes include changing the stream crossing back to a 60" arched culvert and adjustments to the profile and road alignment.

Thanks,

Charlie Burnham, P.E.
Project Engineer

Attachments:

- A – DEP NRPA Permit Application
- B – Army Corp Permit Application
- C – Soils Map
- D – Replacement Culvert Sizing
- E – Stormwater Report
- F – Engineers Estimate
- G – HOA Documents
- H – Plan Set

Application

1. List the underdrained soil filter, wooded buffer, and fire pond as Common Property in the Homeowners Association documents (Section 6.32.E.1).

See HOA.

2. Provide operation and maintenance requirements for the underdrained soil filter, wooded buffer, and fire pond in the Homeowners Association documents (Section 6.32.E.1).

See HOA.

3. A Maine DEP Stormwater Permit is required if the disturbed area is greater than one acre. If the impervious area is less than one acre, and the developed area is less than five acres then the Basic Standards must be met which requires a Permit by Rule Application. If there is one acre or greater of impervious area or greater than five acres of developed area then a full permit application is required.

The disturbed and impervious areas for existing and proposed are summarized in the stormwater treatment summary table. A Permit by Rule application has been submitted to the DEP to meet the Basic Standards. A copy of the application is included as Attachment A.

4. Provide a plan and calculations showing whether a Maine DEP Stormwater permit is required. If a permit is required, a copy of the permit application shall be submitted to the Town when it is submitted to Maine DEP.

See above.

5. Will the lots be developed by the Applicant? If the lots are not proposed to be developed by the Applicant, then the developed/impervious areas on the lots are not required to be counted towards the Maine DEP Stormwater permit thresholds. If any of the lots are to be developed by the Applicant, then the developed/impervious areas for those lots shall be counted towards the Maine DEP Stormwater permit thresholds.

The lots will not be developed by the applicant.

6. Provide a Medium Intensity (NRCS) Soil Map for the site to assist in the peer review of the stormwater calculations. Based on the nature of the site and wetlands, we do not see the need for a high intensity soils survey for this project.

A Soils Map has been included as Attachment C.

7. The Maine DEP NRPA application states that the stream crossing will consist of a 60" arch culvert. The plans call out a 48" diameter culvert. Clarify and revise as necessary. Provide documentation showing that the culvert has been sized in accordance with Maine DEP requirements.

The plans have been adjusted to show the 60" arch culvert.

8. Provide a determination from the US Army Corps of Engineers (USACE) that a permit is not required for the proposed stream crossing. In our opinion, if the channel meets the definition of a stream, then a USACE permit is required. Note that Maine DEP and USACE stream crossing standards prefer culverts with natural stream beds, or depressed inverts with natural stream bed material and culvert spans of 1.2 times the bankful width of the stream. Also note that they prefer that the road embankments be steepened to 2:1 at crossing locations, which will require guardrail

The Army Corps was contacted, and a Preconstruction Notification was submitted and is included as Attachment B.

9. Provide culvert sizing calculations for the stream crossing culvert.

Culvert sizing calculations have been included as Attachment D.

10. Provide a hydrogeological report to confirm availability of groundwater for the fire pond in accordance with the subdivision regulations (Section 6.7.D.2).

Plans have been modified to show an 18" clay liner. The pond receives runoff from the roadway. The pond won't be fed by groundwater.

11. The HydroCAD model for the grassed underdrained soil filter includes a 0.75" orifice. The location of the orifice could not be found on the plans or details. Call out the orifice on the plans or revise the model.

A note has been added to the outlet calling a cap with a 0.75" orifice.

12. Revise the post-development HydroCAD model of the fire pond so that the starting volume of the pond is set at the proposed water surface, not at the bottom of the pond. If the intent of the pond is for it to always be filled, the storage volume below the spillway is not effective.

The fire pond has been adjusted and the permanent pool elevation changed from 193 to 189 (look at the starting elevation for the pond).

13. Revise the HydroCAD model for the grassed underdrained filter so that the starting volume is set at 167, not the 165 elevation used in the calculation.

The void ratios for each layer have been set to model the decreased storage in the filter media.

14. Combining the roadway subcatchment with the hydrologic soil group A wooded area and starting the time of concentration flowpath in the wooded area artificially reduces the calculated runoff from the roadway surface. The roadway and ditch should be modelled as separate subcatchments with separate times of concentration to depict the runoff from the roadway more accurately.

The wooded areas draining to the road are minimal and it is our opinion that the subcatchments are modeled accurately. Breaking the woods off as a separate subcatchment and running it as a reach through the ditch does not represent the flows

as they will exist. Taking 100' (or so) off the channelized flows reduces the times of concentration by fractions of a minute and would have a negligible effect on the runoff.

15. There appears to be an existing stream crossing upstream of the proposed stream crossing culvert. We understand that the existing culvert at this existing crossing is 15" diameter which appears to be a significant restriction in the channel. This existing stream crossing shall be removed. Restoration of the stream crossing site should be reviewed and discussed with Maine DEP.

The existing crossing is downstream of the proposed crossing. The crossing has been there for over 20 years as part of original logging operations. The intent is to remove the crossing and has been included in the application for the DEP.

16. The subdivision application notes that a trail will cross the stream. Provide a detail for the trail crossing of the stream.

The stream crossing has been removed from the trail system.

17. Provide stormwater treatment calculations for the underdrained soil filter.

See Attachment E.

18. Provide a MaineDOT entrance Permit for the proposed roadway, or evidence of discussions with MaineDOT with their determination of the acceptability of the roadway location.

DOT Permit is still pending.

19. Provide a spillway analysis for the underdrain soil filter and the fire pond, assuming that the spillway is the sole outlet in accordance with MDEP requirements. Maine DEP requires that there be one foot of freeboard from the water elevation over the spillway to the top of the berm for the 25-year storm. Additionally, the berm should not overtop during the 100-year storm.

See Attachment E.

20. Provide culvert sizing calculations for all cross culverts.

Peak runoff for the entire site during a 25-year storm is 0.82 cfs). It is our opinion that this is unnecessary.

21. Provide ditch sizing calculations to ensure adequate ditch capacity and to determine the need for ditch protection caused by erosive velocities.

The ditch slopes don't go above 4.5% and carry very minimal amounts of water (peak runoff for the entire site during a 25-year storm is 0.82 cfs). It is our opinion that this is unnecessary.

Existing Conditions Plan (C-100)

22. The extent of the existing onsite gravel areas is shown on an aerial view of the site. This area should be shown on the design plans and a note should be provided describing how the previously disturbed area will be stabilized and restored.

The gravel areas were existing and were not included in the site remediation requirements set forth in the Use Violation from the previous owner. The lot(s) will not be revegetated prior to the selling of the lots. I would imagine it will be used as a laydown yard during construction and the perimeter will be protected using an erosion control fence. Once the lots are developed it will be up to the owner what they would like their yard to be.

23. Label Route 9 on the Existing Conditions plan and the Overall Site Layout plan.

Road label has been corrected.

24. The existing contours should include more labels to facilitate the engineering peer review (all plan sheets with contours).

More contour labels have been added to all plans.

Subdivision Plan

25. Add the subdivision plan to the plan set for the project.

Subdivision Plan has been added to the Plan Set.

26. The final subdivision plan shall be sealed by both the surveyor and design engineer as required by the Maine Board of Licensure for Professional Engineers.

Subdivision Plan has been stamped by both surveyor and design engineer.

27. Show electric transformer easements on the subdivision plan.

Easements added.

28. Add a note to the subdivision plan stating that driveways for each lot will require a driveway entrance permit from the Road Commissioner.

Note added.

29. Call out the snow storage area on the subdivision plan at the T turnaround.

Note added.

Overall Site Layout Plan (C-101)

30. Add the well exclusion zone for lot 12.

Well exclusion zone has been add for lot 12.

31. General note #4 states that trees removed from lot setbacks will be replanted. There is a significant amount of grading and clearing in setbacks shown on lots 3,4,5,6,7,9,12,13.

We recommend that trees be counted and identified on the plans so that the number of trees to be replanted is known before clearing/grading occurs

Note has been removed and the grading has been reduced to show only the construction of the road and stormwater facilities.

Grading and Erosion Control Plan (C-102)

32. Additional proposed grading is needed downhill from the fire pond to tie in the existing grades. The flow length of the proposed wooded buffer at the fire pond spillway should be checked after the grading changes.

Grading has been added below the fire pond.

33. There are proposed ditches with longitudinal slopes less than 1%. MaineDOT recommends ditch slopes be 1% minimum except in difficult situations where they should never be less than 0.5%. Flatter ditches tend to pond water creating stagnate water and breeding grounds for insects.

The grading at the beginning of the road has been adjusted to provide at least 0.5% slope and gradually increases to 1%.

34. Add a note to the grading plans specifying where erosion control blankets should be installed.

Note was added to provide erosion control blankets on any slopes greater than 3:1.

35. Additional underdrain appears to be required for the underdrained soil filter. Maine DEP requires a maximum 15 foot spacing of underdrains in an underdrained soil filter, this gives an effective drainage area of 7.5 feet on each side of an underdrain. Provide appropriately spaced underdrains at the proposed underdrained soil filter. Set an underdrain 7.5 feet from an edge of the filter area, then space at 15' on center.

Underdrain has been provided within 7.5' of the perimeter of the filter area and spaced 15' apart.

36. Maine DEP and USACE standards for stream crossings require the instream work to occur Between July 15 to September 29. This will be specified by the permits from these agencies. We recommend adding a note identifying the timing of the instream culvert work on the plans and the stream crossing detail.

The stream crossing has been returned to the 60" arch that will not require any work in the stream.

37. Verify with MaineDOT whether a culvert will be required at the proposed roadway intersection with Route 9.

Maine DOT engineers have reviewed the project. There are no ditches along this stretch of Route 9. Therefore, a culvert would just create a ponding problem or drive the ditches to an unreasonable depth in the area.

38. The plan shows a 15" cross culvert directing ditch flow to the underdrain soil filter. The grading of the ditch at this culvert does not appear to be complete. Water from the ditch may continue to flow past the culvert and down to the stream unless a berm is added to direct flow into the culvert.

Spot grades below the culvert inlet have been added to clarify the drainage path.

39. Label Route 9 on the plan.

Label added.

40. Show the stabilized construction entrance on the plan.

Construction entrance has been added to C-102.

41. Revise the location of the sediment barrier/clearing limits along the 50' wide entrance segment of the proposed roadway to avoid impacts to abutting properties. Alternatively, obtain temporary easements from abutting properties for the encroachments.

Alignment has been adjusted so that there is no encroachment on an abutter besides the applicant's (Snell is partners with the applicant).

42. Revise the erosion control sediment barrier so it does not extend across the stream as it will impede stream flow.

Erosion control fences have been removed crossing the stream and road entrance.

43. Add the Maine DEP 25' and 75' jurisdictional stream setbacks on all plans that show the streams. Also add the 100' Resource Protection District stream setback. Adding these to all the plans will facilitate the peer review process and help prevent encroachments during construction.

All requested setbacks have been added to all plans.

44. It appears that the underdrained soil filter is located within the 100' and 75' stream setback. Maine DEP will require a NRPA permit by rule for impacts adjacent to a protected natural resource if the filter remains in this location. Alternatively, the filter could be relocated outside of the 75' NRPA jurisdictional setback.

The Underdrain soil filter is in the lowest portion of the previously disturbed area. The intent is to minimize any further disturbance while capturing and treating as much as area as practical. A NRPA has been submitted.

45. Maine DEP standards recommend adding a sediment forebay to the underdrain filter to reduce future maintenance requirements of the filter media. We recommend adding a sediment forebay for the ditch and culvert inlet into the underdrained soil filter.

It is our understanding that forebays are more applicable for closed stormwater systems. When the pond is fed by vegetated swales the sediment is negligible. Vegetated swales are included as a pretreatment measure according to the DEP's underdrain soil filter BMP manual.

46. Lot 13 is mislabeled as Lot 3. Please revise.

Revised to Lot 13.

47. Add the lot setbacks on this plan to facilitate the peer review process and to help prevent encroachments during construction.

Lot setbacks have been added.

48. The Town Standard road section for private roads allows ditch fore slopes to be 2:1 maximum. Maine DOT standards require that slopes steeper than 3:1 be protected with guardrail. Provide guardrail for all areas where ditch foreslopes are steeper than 3:1. Also provide a guardrail detail on the detail sheets.

All foreslopes have been changed to 3:1.

49. The grading of the ditch at the wetland on Lot 12 will result in the entire wetland draining to the ditch, therefore, the entire wetland will be impacted. Will the additional wetland impact require a Tier 1 NRPA permit application from Maine DEP? Alternatively, the ditch grading could be revised to prevent the remaining wetland from draining to the road ditch.

Grading has been modified. This is a dangerous precedent that would require nearly every culvert replacement or road underdrains to account for adjacent wetlands.

50. There appears to be a pinch point in the ditch near the T turnaround where it curves around to the fire pond. Additionally, the ditch is quite flat in this area. We recommend revising the ditch grading in this area to minimize water ponding.

Fire Pond has been regraded.

51. Provide a sediment forebay at the ditch inlet to the fire pond to reduce sediment from entering the pond and increase future maintenance requirements.

See comment 45.

52. Provide a calculation confirming that the infilled 36" culvert at the wetland crossing has adequate capacity.

It is not a stream crossing. It is a culvert to maintain connectivity for the wetland.

53. The proposed grading, off the end of the T turnaround appears to unnecessarily increase the disturbed area of the road construction.

Grading has been tightened up as much as possible.

54. It appears that the fire pond may be located within the Maine DEP 75' jurisdictional stream setback. If so, this would require Maine DEP NRPA permit by rule for adjacency to a protected natural resource. Alternatively, the fire pond could be relocated outside of the 75' setback.

It is not. The line shown is the 100' foot stream setback.

Plan and Profile (C-200 and C-201)

55. We recommend adding lot numbers to plan and profile sheets to facilitate the peer review and for general clarification.

Lot numbers have been added to both profiles drawings.

56. We recommend adding a north arrow on plan and profile sheets to facilitate the peer review and for general clarification.

Noted.

57. Correct the road name for Route 9.

Road name changed to Hallowell Road.

58. We recommend adding the lot setbacks on these plans to facilitate the peer review and for general clarification.

Setbacks added.

59. We recommend showing the culverts as ovals with the height to scale on the profile views.

Culverts are too scale on the profile views.

60. Why is the end of the roadway in a cut condition as shown on the C-201 Plan and Profile? Are the cut and fills for the roadway balanced?

Grading has been adjusted to minimize cut fills.

Erosion Control Notes (C-300)

61. The Erosion and Sedimentation Control Report states that half of the site is covered with pavement and building slabs. Is this correct? If so, show the area on the existing conditions plan. If not, revise or eliminate the note.

Report corrected.

62. The Erosion and Sedimentation Control Report lists a construction start date of Fall 2021. Revise the date.

Date changed.

63. The construction schedule of the Erosion Control report lists construction of building foundations and pads. Revise as necessary. Civil Details (C-301, C-302, C-303)

Foundations and pads will be part of the project regardless of who the builder is.

64. Add the gradation of the road base and subbase gravels on the detail.

See C-302.

65. Add the compaction requirements for pavement and gravel to the road buildup detail, in accordance with the Town standards.

See C-302.

66. The roadway detail calls out clearing to the right of way. The Subdivision Plan notes that clearing should not extend to the ROW unless needed. Revise and clarify this discrepancy. Note that the grading plan shows roadway grading extending well beyond the roadway in several locations.

The subdivision plan notes have been changed. The grading has been minimized to the maximum extent practicable.

67. The Maine DEP requires certain specifications for the soil filter media. Revise the detail to specify the clay content of less than 2%. Also revise to specify the gradation of the coarse gravel.

See C-303.

68. We recommend calling out the seeding of the underdrained soil filter surface.

See C-303.

69. Provide details for the trail stream crossing.

The trail won't cross the stream.

70. Provide details for the road stream crossing culvert that shows the requirements for Maine DEP and USACE.

See C-305.

71. The Typical Roadway Section allows for 2:1 (maximum) ditch sideslopes. We recommend using 3:1 side slopes to reduce the need for guardrail. MaineDOT standards require guardrail where side slopes are steeper than 3:1.

All slopes have been changed to 3:1.

72. Provide the berm width for the fire pond and provide a construction detail for the berm.

The fire pond is a cut. There is minimal berms associated with the construction.

73. Provide a spillway detail for each pond showing an impermeable barrier set to the required spillway elevation to prevent flow through the rip rap at lower elevations.

The clay liner/ and hdpe liner will be brought spillway elevations respectively. Riprap will not impact storage volume as you noted.

74. We recommend adding a detail showing a typical house lot erosion control plan.

75. On the Dry Hydrant detail, list the volume between elevations 185 and 187, as required by Town specifications.

Volume provided in the hydrocad report volume summary report for the firepond.

76. Specify the strainer and support.

See C-304.

77. Add a note to the Dry Hydrant detail referencing the Town Standards.

See C-302.

Miscellaneous

78. Provide a plan and calculations that documents the proposed disturbed area onsite and the proposed developed area. If the applicant is not developing the lots, then those areas do not need to be included, unless portions of the lot are being disturbed as part of the road construction.

See Treatment summary in the stormwater report.

79. Provide a plan and calculations that documents the existing onsite impervious area and compares it to the proposed onsite impervious area. If the applicant is not developing the lots, then those areas do not need to be included.

See Treatment summary in the stormwater report.

80. Based on the current market, the submitted construction estimate feels low. The following revisions are requested:

- a. Increase Erosion Control to \$10,000 LS
- b. Increase Paving (including base and subbase gravels) to \$160/LF
- c. Increase Utilities to \$20/LF
- d. Increase Loam and Seed to \$40,000/acre
- e. Increase Monumentation to \$5,000 LS
- f. Add a cost for the underdrained soil filter
- g. Add a cost for the fire pond and piping



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SUBDIVISION APPROVAL DECISION FINDING OF FACTS

PROJECT NAME: _____ Deer Creek Crossing _____

A. PROJECT DESCRIPTION

The application is for a thirteen-lot cluster subdivision off Hallowell Road. There is an existing gravel road that runs across the site. The southern end of the property has a very defined stream running along it. The stream will need to be crossed to access the site. The proposed subdivision is a clustered layout with each lot being at least 45,000 square feet per the allowance for lot-size and frontage regulations for cluster subdivisions.

The open space wraps around the perimeter of the site and includes the areas along the stream. A trail looping around the open space will provide recreational opportunities (hiking, cross country skiing, the observation of wildlife etc.). The open space protects important natural features (streams, hills, forested wetlands, existing rock walls etc.) from the adverse impacts of development. The cluster subdivision will put over 50% of the property into “open space” that belongs to the Homeowner’s Association. The “open space” consists of large dry wooded areas along with the stream around the perimeter of the site.

The subdivision will be served by a 2400 linear-foot private road with a hammerhead turnaround. A dedicated right of way will be extended from the road turnaround to the project boundary for future street interconnection. The lots will be served by individual wells and septic systems. Utilities will be placed underground. A fire pond with dry hydrant will be provided as a water supply for fire protection.

B. PROJECT PLAN SUBMISSIONS

1. Deer Creek Crossing Final Subdivision Plan dated October 17, 2022, prepared by Cornerstone Professional Land Surveying Inc.
2. Sheet C-100 Existing Conditions Plan dated October 19, 2022, revised November 22, 2022, prepared by Grange Engineering LLC.
3. Sheet C-101 Overall Site Layout Plan dated October 19, 2022, revised November 22, 2022, prepared by Grange Engineering LLC.

4. Sheet C-102 Grading and Erosion Control Plan dated October 19, 2022, revised November 22, 2022, prepared by Grange Engineering LLC.
5. Sheet C-200 Plan and Profile dated May 18, 2022, revised November 22, 2022, prepared by Grange Engineering LLC.
6. Sheet C-201 Plan and Profile dated October 19, 2022, revised November 22, 2022, prepared by Grange Engineering LLC.
7. Sheet C-300 Erosion Control Notes dated October 19, 2022, prepared by Grange Engineering LLC.
8. Sheet C-302 Civil Details 2 dated October 19, 2022, revised November 22, 2022, prepared by Grange Engineering LLC.
9. Sheet C-303 Civil Details 3 dated October 19, 2022, revised November 22, 2022, prepared by Grange Engineering LLC.
10. Sheet C-304 Fire Pond Details dated October 19, 2022, revised November 22, 2022, prepared by Grange Engineering LLC.
11. Sheet C-305 Stream Crossing Details dated October 19, 2022, revised November 22, 2022, prepared by Grange Engineering LLC.
12. Sheet D-100 Existing Stormwater Plan dated October 19, 2022, prepared by Grange Engineering LLC.
13. Sheet D-100 Proposed Stormwater Plan dated October 19, 2022, prepared by Grange Engineering LLC.
14. The Simple Erosion and Sediment Control Plan for Small Sites (House lots) from the DEP Erosion Control Manual.
15. Figure 1 – Lot 6 and Lot 7 Layout dated October 13, 2022, prepared by Grange Engineering, LLC.

C. SUBDIVISION REVIEW CRITERIA

Section 6.2 SUBDIVISION REVIEW CRITERIA

- A. When reviewing any application for a subdivision, the Planning Board shall find that the following criteria as found in 30-A M.R.S.A. §4404 as well as all applicable provisions of this Land Use Ordinance have been met before granting approval. The proposed project:
 1. **Pollution:** Will not result in undue water or air pollution. In making this determination, the Planning Board shall at least consider:
 - a. The elevation of the land above sea level and its relation to the flood plains;
 - b. The nature of soils and subsoils and their ability to adequately support waste disposal;
 - c. The slope of the land and its effect on effluents;
 - d. The availability of streams for disposal of effluents; and,
 - e. The applicable State and local health and water resources rules and regulations;

Motion made by _____: The proposed subdivision project will not result in undue water or air pollution. In making this determination, the Board has considered the five adopted criteria for pollution, and the applicant has submitted evidence and testimony of compliance with the performance standards for elevation of land and relation to floodplain management contained in Section 6.25, for soils and wastewater disposal in Section 6.19, for

Subdivision Approval Findings of Fact – Project Name Deer Creek Crossing

slope of land and effects on effluents through erosion control plans and stormwater management under Section 6.17 and 6.28, and for state and local health rules under Sections 6.16 for water supply, 6.19 for sewage disposal, and 6.24 for impact on groundwater quality.

Motion seconded by _____:

Votes to approve: _____ Votes to deny: _____

2. **Sufficient Water:** Has sufficient water available for the reasonably foreseeable needs of the subdivision;

Motion made by _____: The proposed subdivision will be served by individual wells per the requirements of Section 6.16.A and B., and the proposed fire protection water supply has been reviewed and approved by the Fire Chief per the requirements of Section 6.16.C.

Motion seconded by _____:

Votes to approve: _____ Votes to deny: _____

3. **Erosion:** Will not cause unreasonable soil erosion or reduction in the land's capacity to hold water so that a dangerous or unhealthy condition results;

Motion made by _____: The proposed subdivision will prevent soil erosion and sedimentation through the procedures outlined in the erosion and sedimentation control plan meeting the requirements of Appendix 2 as determined by the Town's peer review engineer. Topsoil will be retained and used on site.

Motion seconded by _____:

Votes to approve: _____ Votes to deny: _____

4. **Traffic:** Will not cause unreasonable highway or public road congestion or unsafe conditions with respect to the use of the highways or public roads existing or proposed and, if the proposed subdivision requires driveways or entrances onto a state or state aid highway, located outside the urban compact area of an urban compact municipality, the Department of Transportation has provided documentation indicating that the driveways or entrances conform to 23 M.R.S.A. §704 and any rules adopted under that section;

Motion made by _____: The proposed subdivision will not create unreasonable highway or public road congestion or unsafe conditions. Sight distances on Hallowell Road are adequate, and the slight intersection offset with Patriot Way does not constitute a safety hazard. The roadway serving the subdivision has adequate capacity to serve the anticipated levels of traffic and all road construction will meet the engineering standards of Appendix 1 as determined by the Town's peer review engineer.

Motion seconded by _____:

Votes to approve: _____ Votes to deny: _____

5. **Sewage Disposal:** Will provide for adequate sewage waste disposal;

Motion made by _____: The proposed subdivision will provide for adequate sewage waste disposal. Soil test pits have been submitted to document that each lot

will have a septic system location that meets Maine wastewater disposal rules without the need for a variance or off-site easement.

Motion seconded by _____ :

Votes to approve: _____ **Votes to deny:** _____

6. **Municipal Solid Waste Disposal:** Will not cause an unreasonable burden on the municipality's ability to dispose of solid waste if municipal services are to be utilized;

Motion made by _____ : Solid waste generated by the proposed subdivision can be accommodated within the capacity of the Town's current solid waste disposal services.

Motion seconded by _____ :

Votes to approve: _____ **Votes to deny:** _____

7. **Aesthetic, Cultural, and Natural Values:** Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the Department of Inland Fisheries and Wildlife or the municipality, or rare and irreplaceable natural areas or any public rights for physical or visual access to the shoreline;

Motion made by _____ : The project will not have undue adverse effects on aesthetic, cultural, and natural values. The project limits clearing of trees to those areas designated on the plan and maintains a 50-foot vegetative buffer along existing roadways. The applicant has consulted with State agencies on historic resources, significant wildlife habitat, and unique natural areas, and available data indicates the absence of such natural and cultural resources on or adjacent to the project site.

Motion seconded by _____ :

Votes to approve: _____ **Votes to deny:** _____

8. **Conformity with Local Ordinances and Plans:** Is in conformance with a duly adopted subdivision regulation or ordinance, comprehensive plan, development plan or land use plan, if any. In making this determination, the Planning Board may interpret these ordinances and plans;

Motion made by _____ : The proposed subdivision is in conformance with requirements of the Land Use Ordinance, which is consistent with the Comprehensive Plan. The Code Enforcement Officer has conducted inspections of the project site and determined that there are no current violations of the Land Use Ordinance and that standards of the Aquifer Protection District will be met with the proposed road construction.

Motion seconded by _____ :

Votes to approve: _____ **Votes to deny:** _____

9. **Financial and Technical Capacity:** The developer has adequate financial and technical capacity to meet the standards of this Article;

Motion made by _____ : The applicant has demonstrated financial capacity under Section 6.23.A. by submitting engineering cost estimates for required improvements. A conditional agreement per Section 6.34.C. will require the completion of all

project infrastructure prior to sale of lots or issuance of building permits until a performance guarantee is approved by the Board. The applicant has demonstrated adequate technical capacity under Section 6.23.B. through the submission of technical drawings and studies that have been peer reviewed, and through the provision of an inspection escrow fund to verify satisfactory completion of the project improvements, which is a condition of final approval.

Motion seconded by _____:

Votes to approve: _____ Votes to deny: _____

10. **Surface Waters:** Whenever situated entirely or partially within the watershed of any pond or lake or within two hundred and fifty (250') feet of any wetland, great pond or river as defined in 38 M.R.S.A. §§ 435-490, will not adversely affect the quality of such body of water or unreasonably affect the shoreline of such body of water;

Motion made by _____: The proposed subdivision is not located within the watershed of Runaround Pond and is not located on property subject to mandatory shoreland zoning. Construction of the new stream crossing and removal of the existing stream crossing have been approved by the Maine Department of Environmental Protection and Army Corps of Engineers. The stormwater treatment facilities have been moved away from the stream in accordance with DEP standards.

Motion seconded by _____:

Votes to approve: _____ Votes to deny: _____

11. **Groundwater:** Will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of ground water;

Motion made by _____: Septic systems will be required to meet the Maine subsurface wastewater disposal rules and wells will be required to meet State rules for well drilling, including the well exclusion zones on each lot as shown on the subdivision plan. There are no documented problems with obtaining an adequate supply of potable water in the project area, and the density of the proposed development and projected household water consumption do not raise concerns for the effect of ground water withdrawals.

Motion seconded by _____:

Votes to approve: _____ Votes to deny: _____

12. **Flood Areas:** Based on the Federal Emergency Management Agency's Flood Boundary and Floodway Maps and Flood Insurance Rate Maps, and information presented by the applicant determine whether the subdivision is in a flood-prone area. If the subdivision, or any part of it, is in such an area, the applicant shall determine the 100-year flood elevation and flood hazard boundaries within the subdivision. The proposed subdivision or project plan must include a condition of plan approval prohibiting the construction of any dwellings or other structures except for access roads and essential utilities within the 100-year floodplain;

Motion made by _____: No development is proposed within areas mapped as being flood-prone.

Motion seconded by _____:

Votes to approve: ____ **Votes to deny:** ____

13. **Fresh Water Wetlands:** All freshwater wetlands within the proposed subdivision have been identified on maps submitted as part of the application, regardless of the size of these wetlands;

Motion made by _____: All freshwater wetlands within the proposed subdivision have been mapped by qualified professionals.

Motion seconded by _____:

Votes to approve: ____ **Votes to deny:** ____

14. **Farmland:** All farmland of five (5) or more acres that is in active farm production or consisting of five (5) or more acres of prime farmland soil or soil classified as unique farmland or farmland of State or local importance has been identified on maps submitted as part of the application;

Motion made by _____: There is no active farmland nor prime farmland of five or more acres within the project site.

Motion seconded by _____:

Votes to approve: ____ **Votes to deny:** ____

15. **River, Stream, or Brook:** Any river, stream or brook within or abutting the proposed subdivision has been identified on maps submitted as part of the application. For purposes of this section, "river, stream or brook" has the same meaning as in 38 M.R.S.A. §480-B.9;

Motion made by _____: All streams meeting the definition of a regulated stream under the Natural Resources Protection Act have been identified on maps by the applicant and appropriate stream buffers are shown on the subdivision plan.

Motion seconded by _____:

Votes to approve: ____ **Votes to deny:** ____

16. **Storm Water:** The proposed subdivision will provide for adequate storm water management;

Motion made by _____: Per Section 5.28.B., the applicant has submitted a stormwater management plan meeting the requirements of DEP regulations and that stormwater management plan has been peer reviewed.

Motion seconded by _____:

Votes to approve: ____ **Votes to deny:** ____

17. **Spaghetti-Lots Prohibited:** If any lots in the proposed subdivision have shore frontage on a river, stream, brook, great pond as these features are defined in 38 M.R.S.A. §480-B, none of the lots created within the subdivision have a lot depth to shore frontage ratio greater than five (5:1) to one;

Motion made by _____: No lots are proposed within an area regulated by Mandatory Shoreland Zoning that would violate the "spaghetti-lot" rule.

Motion seconded by _____:

Votes to approve: ____ Votes to deny: ____

18. **Great Pond Phosphorus Concentration:** The long-term cumulative effects of the proposed subdivision will not unreasonably increase a great pond's phosphorus concentration during the construction phase and life of the proposed subdivision;

Motion made by _____: The project site is not located within the watershed of Runaround Pond.

Motion seconded by _____:

Votes to approve: ____ Votes to deny: ____

19. **Impact on Adjoining Municipalities:** For any proposed subdivision that crosses municipal boundaries, the proposed subdivision will not cause unreasonable traffic congestion or unsafe conditions with respect to the use of existing public ways in an adjoining municipality in which part of the subdivision is located.

Motion made by _____: The proposed residential subdivision will not generate levels of traffic that would cause unreasonable traffic congestion within Durham or any adjacent municipality.

Motion seconded by _____:

Votes to approve: ____ Votes to deny: ____

20. **Land Subject to Liquidation Harvesting:** Timber on the tract being subdivided has not been harvested in violation of rules adopted pursuant to 12 M.R.S.A §8869.14.

Motion made by _____: The applicant has submitted certification by a licensed forester that timber harvesting on the site was conducted in compliance with Maine forestry management rules.

Motion seconded by _____:

Votes to approve: ____ Votes to deny: ____

D. CLUSTER SUBDIVISION APPROVAL

Section 6.33 CLUSTER DEVELOPMENT ALTERNATIVE

- A. **Purpose of Clustering:** The purpose of these provisions is to allow for flexibility in the design of subdivisions to allow for the creation of open space which provides recreational opportunities or protects important natural features from the adverse impacts of development, provided that the net residential density shall be no greater than is permitted in the district in which the development is proposed. Notwithstanding provisions of Article 4 relating to dimensional requirements, the Board, in reviewing and approving proposed residential subdivisions, may modify the provisions related to dimensional requirements to permit flexibility in approaches to housing and environmental design in accordance with the following guidelines. This shall not be construed as granting variances to relieve hardship, and action of the Zoning Board of Appeals shall not be required.

Motion made by _____: The proposed subdivision meets the intent of clustering lots to allow for creation of open space, to provide recreational opportunities, and to protect important natural features and complies with the density limitations and design standards for cluster developments of Section 6.33 B.

Motion seconded by _____:

Votes to approve: _____ **Votes to deny:** _____

E. CONDITIONS OF APPROVAL & DECISION

Section 6.8. FINAL PLAN APPLICATION PHASE

- J. **Decision on Final Plan Application:** Within thirty (30) days from the public hearing or within sixty (60) days of determining a complete application has been received, if no hearing is held, or within another time limit as may be otherwise mutually agreed to by the Board and the applicant, the Board shall make findings of fact, and conclusions relative to the criteria for approval contained in 30-A M.R.S.A., §4404 and the standards of these regulations. If the Board by majority vote finds that all the criteria of the statute and the standards of these regulations have been met, they shall approve the final plan. If by majority vote the Board finds that any of the individual criteria of the statute or the performance standards of these regulations have not been met, the Board shall either deny the application or approve the application with conditions to ensure all of the standards will be met by the subdivision. The reasons for any conditions shall be stated in the records of the Board.

Motion made by _____: To approve the final subdivision application with the following conditions of approval.

Motion seconded by _____:

Votes to approve: _____ **Votes to deny:** _____

1. Per Section 6.10.E., the recording plan must be recorded in the Androscoggin County Registry of Deeds within ninety (90) days of the Planning Board signing. Failure to record within that time frame will require resubmission and reapproval of the final plan.
2. Per Section 6.10.G., no changes, erasures, modifications, or revisions shall be made unless an amended plan is submitted per the terms of Section 6.11.
3. Per Section 6.10.I., the applicant shall commence construction of the required improvements within twelve (12) months and shall substantially complete said improvements within thirty-six (36) months. The applicant shall maintain a performance guarantee for any remaining required improvements throughout the construction period.
4. Per Section 12.A., at least five (5) days prior to the start of construction the applicant shall notify the Road Commissioner in writing of the time of construction commencement so the Town can arrange for inspections by a qualified engineer.
5. Per Section 6.34.C., the Planning Board approves a conditional agreement that requires the completion of all project infrastructure prior to sale of lots or issuance of building permits. The applicant may return to the Planning Board at any point in the construction

to seek approval of a performance guarantee for remaining improvements to allow lot sales and building permit issuance. A performance guarantee shall be submitted for the full cost of erosion and sedimentation controls and site stabilization. Per Section 6.34.F., prior to release of the performance guarantee or any portion thereof, the Road Commissioner or their designee shall determine and provide written certification to the Planning Board that all improvements have been constructed in conformance with the final plan and all applicable codes and ordinances. Partial drawdowns will be allowed.

6. Per Section 6.34.B., no lot in the subdivision may be sold, leased, or otherwise conveyed until the street leading up to and along the frontage of said lot is constructed unless a performance guarantee has been approved and the Fire Chief has provided written verification that said road and lot are accessible by emergency vehicles.
7. Per Section 6.6.C. and 6.34.E., prior to release of the recording plan, the applicant shall replenish the peer review escrow fund to cover the costs of all peer review services incurred by the Town and deposit a check for two (2%) percent of the engineer's construction cost estimate to pay for the cost of Town inspections of the project improvements by a qualified engineer.
8. Prior to the issuance of any certificate of occupancy, the proposed trail shall be fully constructed.
9. The Planning Board approval of Deer Creek Crossing Subdivision is contingent upon the adoption of and compliance with the draft Homeowner Association legal documents submitted by the applicant on November 22, 2022 (Attachment H).

DATE OF FINAL APPROVAL:

6. Other Business:**a. Board Discussion of Public Hearing Date for Draft Land Use Ordinance Amendments**

7. The Planning Board recommendations for a set of proposed Ordinance amendments for the April Town Meeting were presented to the Select Board on January 10.
8. The draft amendments are ready for posting on the Town website.
9. Part 1A of the amendments will fully implement recommendations of the Comprehensive Plan for realignment and expansion of the Resource Protection District.
10. Part 1B will be an alternate warrant article in case 2A fails passage.
11. Part 1B will only realign the Resource Protection District per the Comprehensive Plan criteria within the existing District boundary.
12. Part 1B will also grant relief to landowners whose land is restricted based on outdated floodplain data.
13. Part 2A of the draft amendments will implement recommendations of the Comprehensive Plan for improving housing diversity.
14. A second accessory apartment will be allowed with any single-family home for a maximum of three housing units.
15. One accessory apartment will be allowed with any duplex for a maximum of three housing units.
16. A consistent 2-acre minimum lot size will be required for either housing unit configuration.
17. Part 2B of the draft amendments will be an alternate warrant article in case Part 2A fails passage.
18. Part 2A will incorporate into our Land Use Ordinance the language of LD 2003 which requires up allowance for up to 3 housing units on any developed lot and 2 housing units on a vacant lot (as of the enactment date).
19. Part 3 of the draft amendments will state the requirement for Town Meeting acceptance of any private roads for public maintenance.
20. A public hearing must be held on the proposed Land Use Ordinance amendments no earlier than 30 days before the Town Meeting vote.
21. A mail notice will be sent to 480 individual landowners affected by the proposed Resource Protection realignment two weeks before the public hearing.
22. The second Wednesday of March (Mar. 8) would be the normal date for a special meeting of the Planning Board.



Town of Durham

**630 Hallowell Road
Durham, Maine 04222**

**Tel.: (207) 353-2561
Fax: (207) 353-5367**

February 22, 2023

Re: Changes to the Zoning Map of Durham

Dear Resident:

If you are receiving this notice, there are changes proposed to the Zoning Map of Durham that could affect your property. The changes affect the boundaries of the Resource Protection District as indicated on the maps enclosed with this letter.

The Resource Protection District is a Town zoning district designed to protect certain natural resources. Within the Resource Protection District there are limitations placed on some activities, such as energy development, building construction, and certain road construction. While other activities, including agriculture and timber harvesting activities may not be restricted. A full list of allowable, permittable, and restricted activities in Resource Protection zones can be found in Table 3.1- Table of Land Uses, in the Durham Land Use Ordinance (available at <https://www.durhamme.com/code-enforcement/durham-land-use-ordinance>).

The boundaries of the current Resource Protection District are based on outdated and inaccurate inventories of floodplains and wetlands from the 2002 Comprehensive Plan, which includes outdated Federal Emergency Management Agency (FEMA) floodplain data, and incomplete state wetland mapping data. Since then, FEMA and the State of Maine have provided far more accurate mapping to the Town. Additionally, the Town voter-approved 2018 Comprehensive Plan recommends a policy of realigning the Resource Protection District boundaries to match the more recent and more accurate data, as well as the Resource Protection criteria approved in the 2018 Comprehensive Plan.

The Planning Board has recommended two warrant articles on the Resource Protection realignment for consideration at the April 1, 2023 Town Meeting. Part 1A will fully implement the recommendations in the 2018 Comprehensive Plan to adopt the following six specific criteria as the basis for Durham's Resource Protection District:

1. 100-year floodplains;
2. Areas subject to Mandatory Shoreland Zoning;
3. Land within 100 feet of most perennial streams;
4. Wetlands of 10 or more acres;
5. Land within 250 feet of an emergent wetland rated moderate or high value for waterfowl and wading bird habitat; and,
6. Areas rated by IF&W's Beginning with Habitat program as having a convergence of natural resources rating of 6 or more.

Under Part 1A, these natural resource protection criteria will be applied to all areas of Durham, and any land meeting one of them will be retained or added to the existing Resource Protection District. Land within the existing District that does not meet any of the criteria will be changed to Rural Residential and Agricultural District zoning.

The Planning Board has recommended a second warrant article designated as Part 1B that will only apply those criteria to land within the existing Resource Protection District. If Part 1A is not approved by the voters, this measure will grant relief to landowners whose land is restricted based on inaccurate floodplain data. Under Part 1B, no new land will be added to the Resource Protection District.

The Planning Board will conduct a Public Hearing on these and other draft Land Use Ordinance amendments on **Wednesday, March 8, 2023, at 6:00 p.m. at the Eureka Center**, 606 Hallowell Road in Durham. Additional information related to proposed changes to the Land Use Ordinance and Zoning Map can be reviewed on the Town web site. Please email Town Planner George Thebarger at townplanner@durhammaine.gov with questions and/or if you are interested in making an appointment to discuss the changes in person.

Thank you,

Jerry Douglass
Town Manager

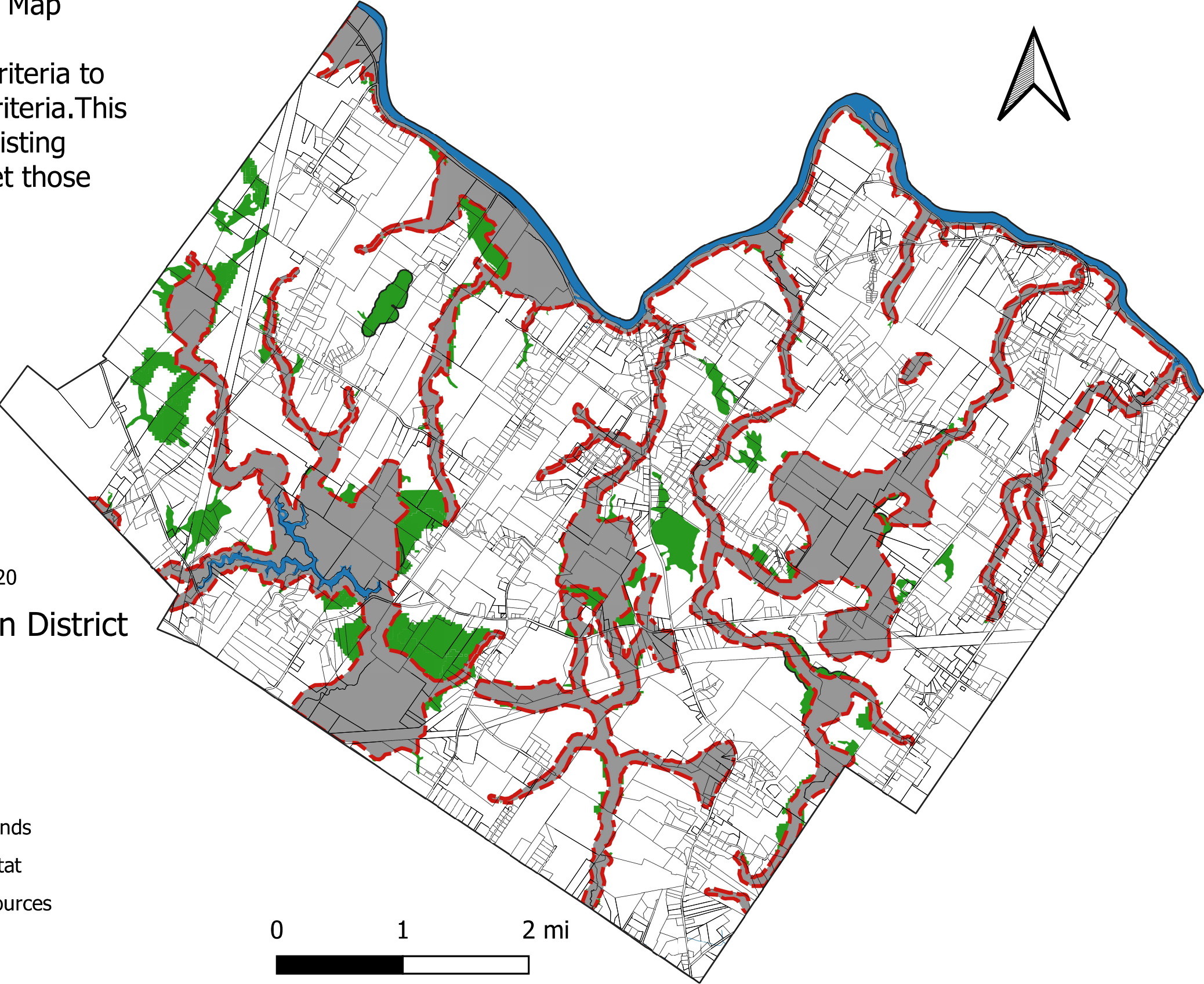
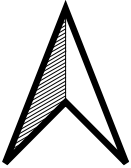
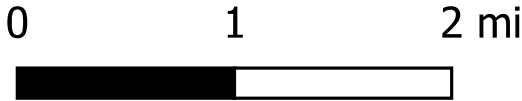
ZONING MAP AMENDMENTS PART 1A - AREAS ADDED TO RESOURCE PROTECTION PER COMPREHENSIVE PLAN CRITIERA

Draft January 2023

The draft amendments to the Zoning Map apply the 2018 Comprehensive Plan recommended Resource Protection criteria to all areas of Durham meeting those criteria. This map depicts the areas outside the existing Resource Protection District that meet those criteria and will be added.

LEGEND

- Existing Resource Protection District 2020
- Proposed Resource Protection District
- 100 Year Floodplains
- Androscoggin River Shoreland Zone
- Runaround Pond Shoreland Zone
- 100-Ft Stream Buffer
- Beginning with Habitat 10-Acre + Wetlands
- Inland Waterfowl and Wading Bird Habitat
- Beginning with Habitat 6+ Multiple Resources



ZONING MAP AMENDMENTS PART 1A & 1B - AREAS REMOVED FROM RESOURCE PROTECTION PER COMPREHENSIVE PLAN

CRITERIA

Draft January 2023

The draft amendments to the Zoning Map apply the 2018 Comprehensive Plan recommended Resource Protection criteria to all areas of Durham meeting those criteria. This map depicts the areas within the existing Resource Protection District that meet none of those criteria and will be removed.

LEGEND

 Areas Removed RP

Proposed Resource Protection District

 100 Year Floodplains

 Androscoggin River Shoreland Zone

 Runaround Pond Shoreland Zone

 100-Ft Stream Buffer

 Beginning with Habitat 10-Acre + Wetlands

 Inland Waterfowl and Wading Bird Habitat

 Beginning with Habitat 6+ Multiple Resources

