



The State of New Hampshire
Department of Environmental Services



Robert R. Scott, Commissioner

REQUEST FOR MORE INFORMATION

June 24, 2024

Mr. John Gay
Granite State Landfill, LLC
1855 Vermont Route 100
Hyde Park, VT 05655
(sent via email to: john.gay@casella.com)

RE: Alteration of Terrain Permit Application AoT 231113-224
Granite State Landfill
172 Douglas Drive – Dalton & Bethlehem
Tax Map 406 Lots 2.1 & 3

Dear Applicant:

On June 24, 2024, the New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain Bureau (AoT) reviewed the above-referenced application. Pursuant to RSA 485-A:17, II-b(a) and Rules Env-Wq 1500, NHDES AoT Bureau determined the following additional information is required to complete its evaluation of the application:

1. AoT Permit Application Form (Env-Wq 1503.05(c)): The application does not list all the parcels that will be disturbed as part of the project. The plans depict ground disturbance on Tax Map 406 Lot 1 along Douglas Drive in Bethlehem. The owner of any parcel within the limits of disturbance must be included in the application and the owner(s) must sign the application.
2. The *Project Description* states Lots 2.1 and 3 will be purchased by Granite State Landfill, LLC (GSL) after issuance of permits and that easements will be established for access through the subject parcels. Depict the easements on the plans.
3. Local Advisory Committee (LAC) Comments: The Ammonoosuc River LAC commented on this application in a letter dated January 24, 2024. In your resubmittal, explain how each of their comments have been addressed.
4. Limit of Disturbance
 - a. On the plans, include a limit of disturbance line instead of a limit of proposed grading line and include all areas to be disturbed during construction.
 - b. Some of the proposed stormwater basins are accessed only by a 12-foot-wide drive. The access to Pond 11 is over 500 feet long. Confirm that the grading limits shown represent the area that will be disturbed to construct this pond and any others.
5. Threatened & Endangered (T&E) Species
 - a. Revise the Wildlife Protection Notes on the Overall Site plan (Sheet 3) to reference Env-Wq 1504.17 instead of Env-Wq 1504.18.

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- b. As required by rule Env-Wq 1503.19(h), this project requires consultation with NH Fish & Game (NHFG). Once NHFG reviews the submitted information, the plans must be revised as necessary to incorporate any recommendations from NHFG. The datacheck map included in the NHB report does not fully encompass the limits of the project. Please submit a new NHB report with your resubmittal that includes the full limits of the project.
 - c. The Natural Heritage Bureau (NHB) report identified the endangered plant species, marsh horsetail, and the natural community, northern white cedar seepage forest. NHDES requests that you follow up with NHB at the Department of Natural and Cultural Resources (nhbreview@dncr.nh.gov) to address concerns associated with T&E species. Summarize how their comments are being addressed and provide copies of correspondence to NHDES.
6. Wetlands Mapping (Env-Wq 1504.06(e)(4) & 1504.01(c))
- a. There are discrepancies between the wetland delineation submitted with this application and the wetland delineation submitted with the NHDES Wetlands permit application. Revise the plans as necessary to accurately depict the limits of wetlands.
 - b. Pursuant to Env-Wq 1504.01(c), add the date the wetland delineation was performed to Note #3 on the Overall Site Plan. The plan must also include the certified wetland scientist's seal and signature. Also, please be aware that wetland delineations older than 5 years will need to be revisited to ensure their accurate representation.
7. Water Supply Wells
- a. A Blasting Plan was submitted with the application pursuant to Env-Wq 1503.11(h). The plan states there are no drinking water wells within 2,000 feet of blasting activities. To confirm there are no wells present, submit a printout from OneStop that includes a 2,000-foot offset from the limits of blasting and depict any well locations that are shown. Add all the blasting notes from Env-Wq 1510 to the Permitting Plan Set.
 - b. Pursuant to Env-Wq 1504.06(f), identify on the plans all drinking water supply well sources, whether private or public, with setbacks as specified in Env-Wq 1508.02. Confirm all setback requirements are met and provide the anticipated classification of any proposed wells.
8. Erosion & Sedimentation Controls (Env-Wq 1504.06(i))
- a. The temporary erosion and sedimentation controls noted on the plans are insufficient to meet Env-Wq 1504.06(i). Please submit Sediment and Erosion Control Plans. Include and/or address the following on the plans:
 - Depict and label erosion control blankets on areas that exceed a 3:1 slope.
 - Depict or call out inlet protection for culverts and catchbasins.
 - Evaluate the layout of proposed perimeter controls pursuant to Env-Wq 1506. Silt fence must follow the contour of the land as closely as possible. Review the requirements for maximum contributing area and length of contributing slope and add additional rows as necessary.
 - Depict the location of construction exits.
 - Depict temporary stone check dams where required.
 - When project activities are located within 50 feet of a water body or wetland, please show a double row of perimeter controls on the plans.
 - b. Evaluate all slopes for benching requirements pursuant to Env-Wq 1508.21. Provide a detail and revise the grading plan as necessary.
9. Env-Wq 1505.03, Maximum Open Area Allowed
- a. The total area of disturbance exceeds 5 acres. Any open area exceedances of 5 acres are

considered on a case-by-case basis and must meet the requirements of Env-Wq 1505.03(c). The plans only include phasing for the landfill portion of the project and does not include Douglas Drive, the leachate collection area and remaining infrastructure. The construction sequence plan (phasing plan) must clearly show how the remaining construction will be phased with the landfill, depict the limits of disturbance for each phase, note the associated area, and indicate that each area must be stabilized before advancing to a successive phase. Include a construction sequence with applicable erosion control notes pursuant to Env-Wq 1504.15 and 1505.

- b. This project must meet the requirements of Env-Wq 1505.03(f). Revise the plans as necessary.
10. Env-Wq 1507.06: The Peak Runoff Control Requirements are not being met at Analysis Point Out-D for the full build out and the intermediate stages. The Drainage Report notes this is due to upsizing existing culverts under Douglas Drive. It has not been adequately demonstrated that the requirements cannot be met.
 11. Infiltration Feasibility Report (Env-Wq 1504.13)
 - a. There are many inconsistencies noted in the testing, test pits, and site specific soil survey for the design of the infiltration basins. Typically, infiltration rates determined by testing are supported by the findings in the site specific soil survey and design test pits. In many cases tested infiltration rates were found in HSG C soils with rates greater than 20 inches per hour. Such soils would have very low or near zero expected infiltration rates in the C Horizon, or parent material. Review and comment and include a response from the soil scientist to support these discrepancies.
 - b. The report acknowledges that insufficient testing was completed prior to submittal and includes a table with additional tests that are required. Please complete the required number of tests. Please note the number of tests required differs for systems in native soils and disturbed soils.
 - c. Pursuant to Env-Wq 1504.13(f): Submit a plan (8.5"x11" is acceptable) for each practice showing the soil series for the soils at the location of the proposed practice and within 100 feet of the area's perimeter, in accordance with SSSNNE Special Publication No. 3, Version 7.0, Site-Specific Soil Mapping Standards for New Hampshire and Vermont, July 2021. Include the test pit locations and any nearby test pits as shown on the Site Specific Soil Plans.
 - d. The report states that the depth to ESHWT noted in the test pit logs was based on observations of root depth and do not represent the ESHWT for the design of the basins. Pursuant to Env-Wq 1504.13(d), the elevation of the location of the ESHWT and bedrock, if within 5 feet below the base of the practice, as observed and described by a certified soil scientist or an individual holding a valid permit as a permitted designer as issued by the NHDES Subsurface Systems Bureau, shall be included in the report. The report also states that the ESHWT for the basins was determined using groundwater monitoring data. A Groundwater Separation Plan was provided in Appendix C. No supporting information including the scope of the sampling, duration and frequency of sampling, or location of monitoring wells was provided. In some cases, the separation to ESHWT in the test pits conflict with the depths noted in the Groundwater Separation Plan. The information provided is insufficient to determine if the separation requirements are being met at each stormwater BMP. Env-Wq 1504.13(e) requires that test pits or borehole data have profile descriptions written in accordance with the descriptive procedures, terminology, and interpretations found in the Field Book for Describing and Sampling Soils, Version 3.0, NRCS, 2012, available as noted in Appendix B.
 - e. The test pit labels in the report must match or reference the test pit labels depicted on the plans.
 - f. Please include the elevation at which each infiltration test was conducted on the Infiltration

Testing Sheets.

- g. Additional infiltration tests, when required, shall be located within the footprint of the proposed practice, and sufficiently spaced apart to be representative of the overall conditions.
- h. Additional test pits, when required, shall be sufficiently spaced within the footprint, with at least one test pit in the location of the greatest cut. Separation must be met at this location.
- i. Review and revise the test pit existing grade elevations noted in the report for conformance with the plans. Many do not match the grades shown on the plans.

12. Drainage Plans (Env-Wq 1504.01 & 1504.09)

- a. In the plan set, the match lines on all the plans do not line up with the noted adjacent plan. Revise the location of the match lines as necessary, to align adjacent plans.
- b. On the plans, label all nodes that are shown on the routing diagram in the drainage analysis. The nodes must be labeled on each plan sheet that they appear.
- c. Include all existing and proposed tree lines on all plans including offsite areas.
- d. Expand the limits of existing topography beyond the limits of all subcatchments, as necessary, to allow verification of the boundaries.
- e. The Existing Conditions Soil Mapping Plans depict a watershed boundary line that differs from the watershed boundary shown on the Drainage Plans. Revise the plans to be consistent or if a revision is not necessary, provide an explanation for the discrepancy.

13. Pre-Development Drainage Plans (Env-Wq 1504.09): The Pre-Development drainage plans are at a scale of 1"=50' but the scale bars are at 1"=100'. Please revise the plans to match.

14. Post-Development Drainage Plans & Intermediate Drainage Plans (Env-Wq 1504.09)

- a. Add roadway station numbering to the plans to match the Permitting Plan Set.
- b. Consider matching the numbering of the outlet structures to that of the ponds.
- c. Revise the scale bars to match the scale of the plans.

15. Color Hydrologic Soil Group Plans for Pre- and Post-Construction (Env-Wq 1504.09)

- a. The limits of the site specific soil survey are depicted on the plans. Some of the disturbed areas, including the location of Pond P1 and Rain Garden P6, are located outside the limits of the survey. Please update the site specific soil survey to include all areas that will be disturbed.
- b. Revise the plans to ensure all the soil series lines are the same line thickness and are legible.
- c. List all the soils from the Site Specific Soil Survey in the legend.

16. Sediment Forebays (Env-Wq 1508.12)

- a. The sediment forebays consists of a check dam constructed of 2-4" crushed stone. As designed, the berm will not impound water and create separate pools between the sediment forebay and stormwater ponds to allow for sediment deposition. Please revise the design to include a riprap spillway set in an earthen berm. The forebay must be a minimum of 2 feet deep from the bottom to the elevation of the spillway. Each spillway must be designed to convey the inflow, some of which exceed 50 cfs.
- b. Do not include infiltration in the drainage analysis for sediment forebays. Sediment forebays are pretreatment practices and tend to clog over time due to deposition of sediment.
- c. If forebays are located within the ESHWT, set the starting water surface elevation in the drainage analysis to the spillway elevation.
- d. Consider lining the forebays that are located close to the landfill or leachate collection areas as a secondary containment measure in the event of a leachate release.

17. Bioretention Systems (Rain Gardens, Env-Wq 1508.08)

- a. The drainage analysis uses the stormwater modeling software, HydroCAD. The analysis is overestimating the flow and volume of exfiltration during the design storm events. When modeling with separate storage volumes in a pond, revise the analysis to only allow exfiltration in one storage volume. Otherwise, HydroCAD analyzes the storage volumes as adjacent storage volumes and increases the exfiltration area accordingly. Alternatively, HydroCAD allows the use of only one storage definition.
- b. In consultation with the UNH Stormwater Center, the current best management practice is to directly seed the filter media of bioretention systems with a suitable seed mix instead of placing mulch over the filter. Please consider removing the mulch layer and seeding the filter.
- c. The systems should have underdrains that are laid flat. If the design will include a 0.5% slope as proposed, the reservoir course will need to be deeper on the downslope end. Provide more information on the plans and detail, to include the required depth of stone to meet the requirements of Env-Wq 1508.08(g) for each basin.
- d. Rain Garden Detail (Sheet D-14)
 - A 3-inch pea gravel layer must be placed between the filter and the stone reservoir.
 - Please remove the filter fabric from the bottom of the systems. The UNH Stormwater Center has found that filter fabric used in this way has the tendency to clog very quickly resulting in little or no infiltration.
 - The underdrain system must be 14" deep. Specify the material pursuant to Env-Wq 1508.08(g).

18. Interim Grading Plans

- a. To ensure there will be no increase in post-development flows from the site during construction of the landfill, stormwater BMPs must be constructed and stabilized downslope of each cell, as necessary, prior to commencing grubbing activities in the upslope cell footprint. Pond 12 must be constructed prior to grubbing Stage 1, Cell 3 and Pond 13 must be constructed prior to grubbing Stage 2 Cell 2. Revise the plans accordingly.
- b. Depict and label all the stormwater infrastructure that will be constructed as part of each phase including culverts.
- c. Include the edge of road lines on the plans.
- d. Culvert RB3 (15" HDPE, located northeast of Pond 12) is undersized. Although flows decrease from the pre- to post-development, the design storms still overtop the road. Increase the diameter of the culvert or provide a stable conveyance over the road.

19. There are large ponding areas or basins that collect runoff from the area located directly around the leachate collection area and Future Gas Facility. The basins receive untreated stormwater before conveying it to stormwater treatment BMPs. The basins must be lined pursuant to Env-Wq 1508.18. Provide a minimum 6-inch-deep sump (do not include this volume in the analysis). Revise the grading of the basin area adjacent to the leachate tanks to allow it to freely drain or provide a suitable outlet.

20. General Grading & Drainage Plan Comments including Douglas Drive

- a. Depict all property lines on the grading plans in the Permitting Plan Set to confirm the area of disturbance is within the lots noted in the application.
- b. Include roadway stationing on all the plans.
- c. Label the start and end limits of curbing. Where required, set catch basin grates at the face of curb.

- d. There appears to be a surface grading boundary shown on the plans. Please freeze this layer prior to printing.
- e. Use a smaller linetype scale for the existing grade contours.
- f. The proposed grade lines do not tie in correctly to existing grade in many locations and loop back on themselves. There appear to be additional contour lines generated by CAD software that need to be deleted. Review and correct the proposed grade contours on the plans including all stormwater basins. Label additional contours.
- g. Provide more detail on the plans for each of the proposed buildings. Include roof lines, as necessary, and finished floor elevations. How will the buildings be accessed?
- h. Include the inverts for all pipe outlets. Many outlets refer to the Stone Outlet Protection Detail (Detail 5, Sheet 43) but the outlet is not included nor are any elevations.
- i. The proposed grades for stormwater ponds are required to be curvilinear. Revise as necessary.
- j. Depict and label all test pits on the plans including those noted in the Infiltration Feasibility Report.

21. Grading & Drainage Plans

- a. This plan set is a supplemental plan set submitted on 1/30/24. Incorporate this twelve-sheet plan set into the Permitting Plan Set.
- b. PHW-5 (Sheet 9 of 12): Place the headwall into the slope on the plans. It appears the culvert is undersized. The plans depict a 10± foot cut at the inlet. The water surface elevation in the 50-year storm is 14 feet above the crown of the pipe and exceeds the elevation of the road. If flow will be directed over the road, secondary routing and a controlled conveyance is required. If runoff is directed down the side slopes of the depression, the slope must be armored.
- c. PHW19 & 20 (Sheet 7 of 12): It does not appear headwalls can be constructed at the elevations shown. Review and comment.
- d. PHW24 (Sheet 8 of 12): The analysis notes there is a 0.5 foot elevation change between the swale and culvert inlet, but it is not shown on the plans. Provide more detail on the plan. Confirm the headwalls can be constructed at the elevations shown.
- e. Verify the riprap apron dimensions calculated match that shown on the plans. The riprap apron must be level for the full length. If the outlet is located on a steep slope, alternative measures (plunge pool or diversion to level spreader) are necessary to prevent reconcentration of flow. Pipes that outlet into swales must depict riprap to the length required and to the depth of the design storm in the swale.
- f. Main Access Road: The portion of the road from Sta. 86+00 to 92+00± appears to require a curb. Revise the plans as necessary.
- g. The exterior slopes adjacent to the landfill perimeter access drive (Grading & Drainage Plan subset Sheet 1) are shown at a 1:1 slope. How will these areas be stabilized?

22. Douglas Drive Roadway Plan & Profiles

- a. Include all the existing grade topography. Specifically, the areas under proposed grading and hatching that have been omitted from the plan set.
- b. Label more proposed grade contours including all basins and forebays.
- c. Revise the side slope grading at Sta. 63+00 to 64+00 Rt. The contours do not tie in correctly.
- d. Provide a plan that includes the proposed grading for the parking area located at Sta 51+00 Rt.
- e. Sheet DD6: The proposed grading to the north of the parking area does not tie into existing grade. Revise the plans as necessary.
- f. Add the invert elevations for all the existing and proposed culverts along Douglas Drive to the plans. The analysis could not be verified for some of these crossings.

- g. Include labels, sizing, and elevations for all catch basins. The plans could not be verified with the drainage analysis.
 - h. The proposed grading of Douglas Drive from Sta. 16+50 to 18+00, Sta. 20+50 to 23+00, Sta. 25+50 to 29+75, Sta. 31+00 to 34+50, and Sta. 39+25 to 43+50 will direct stormwater to a V-channel created by the edge of gravel shoulder and a berm along the road. This conflicts with the Douglas Drive Typical Section detail on Sheet D-22 and will result in erosion of the shoulder. Provide a stable conveyance in this location. If curb is proposed (could not be determined) do not depict a gravel shoulder on the plans.
23. Pollutant Discharge Minimization Requirements (Env-Wq 1507.03): There are sections of Douglas Drive that will discharge stormwater runoff from impervious areas that will not be treated pursuant to Env-Wq 1507.03. Provide stormwater treatment for the runoff from these areas which are located within Subcatchments D1, D3, D6 and E12.
24. Drainage Analysis (Env-Wq 1504.09)
- a. Submit an Area Listing and Soil Listing printout for the full post-development analysis.
 - b. Display HydroCAD errors and warnings in accordance with Env-Wq 1504.09(b)(4).
 - c. Correct any errors related to high oscillation values in the HydroCAD analysis including, but not limited to, Infiltration Basin P13.
 - d. The travel path for the time of concentration (Tc) must start at a high point on the edge or within the subcatchment, not midslope, as noted for the Tc of Subcatchment C8 in the post-development. Revise all Tc paths as necessary.
 - e. Do not model the impervious area as unconnected. This can modify the CN value in certain conditions and is only applicable in situations where runoff from impervious areas occurs over a pervious area as sheet flow and is not collected by stormwater BMPs.
25. Post Development Drainage Analysis for Outfall A (Env-Wq 1504.09)
- a. The inverts for PWH-34 do not match the plan. Revise as necessary.
 - b. Peak flows from the design storms that cannot be passed by the culverts located at PWH-34, PWH-31, PWH-28 must be routed as secondary flow, at the bypass weir elevation shown, down to the next culvert. Evaluate the need for riprap at each weir.
 - c. Infiltration Basin 13 (P13)
 - Five (5) infiltration tests were completed to support the design infiltration rate used in the analysis. Per the area of the basin floor, ten (10) tests are required. The tests shall be sufficiently spaced apart to be representative of the overall conditions.
 - Revise the test pit surface elevations in the Infiltration Feasibility report to match that shown on the plans.
 - Site Wide Infiltration Test Summary Table (Appendix C of the Infiltration Feasibility Report): The ESHWT noted for each design test pit does not match the test pit logs.
 - Test Pit C is logged as clay silt at the depth the infiltration test was performed. Clay silt is typically not suitable for infiltration practices. The test resulted in a rate of 23 inches per hour which is more typical of sandy soils. Review and comment.
26. Drainage Analysis for Outfall B (Env-Wq 1504.09)
- a. Review the length of Reach RB1 (Pre) for consistency with the plan.
 - b. Reach RB5 must be modeled as a pond to match the pre-development analysis. Label the diameter of the proposed pipe as 18" on the construction plans or revise the pipe diameter to be 15" per the pre-development and plan.
 - c. Revise the inlet invert of Reach RB4 to be lower than the outlet invert of RB5.

- d. The area of Woods, HSG D increases from the pre to the post in Subcatchment B1. Review and revise as necessary.
 - e. Confirm the area of woods in Subcatchment B6 is correct.
 - f. Infiltration Basin 11 (P11)
 - Pond 11 was not included in the Infiltration Feasibility Report.
 - The basin is proposed to be constructed on a 33% slope. Pursuant to Env-Wq 1507.02(c)(3), no infiltration practice shall be located in an area with slopes greater than 15%, unless calculations are provided demonstrating that resulting seepage forces do not cause slope instability.
 - An infiltration rate of 5 in./hr. is used in the drainage analysis. Infiltration practices cannot be placed over Becket soils without testing because the default infiltration rate in the C Horizon is less than 0.5 in./hr. No supporting subsurface information including test pit logs or infiltration tests were submitted. One of the required test pits must be logged at the high end of the system.
 - g. Infiltration Basin 12 (P12)
 - Additional test pits and infiltration tests are required pursuant to Env-Wq 1504.13(c) and Env-Wq 1504.14(f).
 - Revise or submit supporting information as necessary to support the design. This location does not appear to be suitable for infiltration per the following:
 - The basin is located in Tunbridge (99) soils. The bottom of the basin is 28 feet below existing grade. Per the Site Specific Soil Survey, Tunbridge soils have bedrock at a depth of 20-40". In TP MC3, bedrock was found within the footprint at a depth of 34". SHWT was found at 22" in nearby TP MC2.
 - Infiltration testing was conducted in three test pits. The logs for all three test pits noted clayey till or silty till clay. Only one test pit infiltrated stormwater during the test and this appears to most likely be an anomaly or an error.
27. Drainage Analysis for Outfall C (Env-Wq 1504.09)
- a. The Lyme soil group (247), HSG C, is hatched as HSG C and D on the soil plans within Subcatchment C2. Revise as necessary and confirm the soil group used in the analysis is correct.
 - b. The 50-year storm overtops the road at PWH5. If this is the design intent, provide a separate outlet to route flow over the road to the appropriate downstream structure. Provide a stable conveyance.
 - c. The 50-year storm overtops the road at PHW19. If this is the design intent, provide a separate outlet to route flow over the road to Pond 8. Provide a stable conveyance.
 - d. C10 (subcatchment to P5): The watershed boundary does not reflect the proposed grading. Provide more detail including spot grades if necessary. How will the roof runoff be collected?
 - e. The Tc for Subcatchment C15 (post) should not exceed Subcatchment C3 in the pre-development. Revise the Tc for Subcatchment C3 if necessary.
 - f. Subcatchment C16: The tree line shown on the post plans is not consistent with the aerial image. Revise as necessary.
 - g. There appears to be an additional subcatchment boundary line that passes through Subcatchment C20 and the Future Gas Facility. Revise as necessary.
 - h. Subcatchment C17: The boundary could not be confirmed with the information shown on the plans. Provide additional proposed grades to support the delineation of this subcatchment.
 - i. Revise the C15 subcatchment boundary shared with Subcatchment C20 to reflect the crown of the road between Sta. 69+80 and 73+00.

- j. Subcatchment C20: The boundary does not reflect the high point at proposed contour elevation 1152 near PHW-4. Revise as necessary.
- k. PCB1 in the analysis is labeled as PCB-3 on the plans. The outlet pipe does not appear to be adequately sized to pass the peak flow generated during the design storms. Review and revise as necessary.
- l. Water Storage Basin 1 (P1):
 - The pond is noted to be used for water storage for reuse and is intended to be full. The basin must be lined. Please set the starting water surface elevation at the spillway elevation to reflect a full condition.
 - Provide treatment for the impervious area that flows to the basin.
 - What is the mechanism for reusing the water?
 - The riprap at the spillway outlet must extend to the toe of the exterior fill slope. Consider relocating the spillway to a more upgradient location.
 - The exterior fill slope is at a 1.5:1 slope. Flatten the slope or line it with riprap.
- m. Infiltration Basin 2 (P2):
 - Label the culvert that is depicted under the maintenance access drive.
 - How is pre-treatment provided? Deep sump catch basins are limited to a maximum 0.25 acre catchment area. Which catch basins contain deep sumps? There are two typical details on the plans.
 - The rim elevation of the outlet structure is 1109.40 in the analysis and details and 1110.40 on the grading plans. Review and revise as necessary.
 - The test pits are not deep enough to verify the separation requirements to ESHWT and bedrock are being met. Provide additional test pit data.
 - The basin is located in Skerry soils (559) which consist of a dense basal till in the C Horizon as noted in the site specific soil survey. The default infiltration rates for the C horizon for this soil are too low to be used for infiltration. The two design pits noted dense and compact till in the C Horizon of the test pits and noted the drilling effort to be difficult. No ESHWT was found although it is typically found above the dense till layer per the site specific soil report. However, the infiltration tests all exceed 24 inches per hour in the dense compact till. Review and comment.
 - Three infiltration test locations are required, two were provided. Provide one additional infiltration test.
- n. Infiltration Basin 3 (P3)
 - The design was not fully reviewed because the pond was not included in the Infiltration Feasibility Report and no test pits were provided. The basin is located in Udorthents, bedrock less than 60" (550), and the bottom of the basin is in a 5 foot cut, indicating the entire basin is most likely located within bedrock.
 - The top of the 24-inch outlet pipe is 4 feet above finished grade. Review and revise as necessary.
 - Extend the riprap of the forebay spillway to the toe of the slope.
 - Please note two test pits are required.
 - A minimum of three test locations are required for infiltration testing.
- o. Infiltration Basin 4 (P4)
 - Provide pretreatment of the stormwater runoff from the parking lot.
 - The depth of the test pit is not deep enough to conclude that the separation requirements are being met. Provide additional test pit data.

- One additional test pit is required based on the bottom area.
 - Seven additional infiltration tests are required. Please perform the tests in a different part of the system footprint than the first test and include the areas with the largest cut. The test locations must be representative of the entire footprint.
 - The outlet pipe does not have sufficient cover. Review and revise as necessary.
 - The outlet pipe and emergency spillway must have a stable conveyance to the toe of the fill slope.
- p. Infiltration Basin 5 (P5): The design was not reviewed because the pond was not included in the Infiltration Feasibility Report and no design test pits were provided. The underlying soil series is not clearly shown on the color soil plans. It appears to be Lyme which are described as poorly drained wetland soils in the site specific soil survey.
- q. Rain Garden P6
- Exfiltration through the media must be routed to the 6" underdrain at 10 inches per hour in the analysis.
 - The rim of the outlet structure is 1124.40 in the analysis and 1126.19 on Sheet G&D-3. Review and revise as necessary.
 - On Sheet G&D-3, the bottom of pond elevation 1124 contour must extend for the full width of the basin.
 - Pull the outlet end of the outlet pipe in toward the fill slope to allow for adequate cover over the pipe and provide a buffer to the adjacent wetland.
- r. Infiltration Basin 7 (P7)
- Depict the proposed grade 1139 contour that represents the bottom of the pond on the G&D plans.
 - The sediment forebay outlet elevation must be set lower than the berm elevation of the forebay.
 - The existing grade elevation of TP B in the Infiltration Feasibility Report does not match the plans. Review and revise as necessary.
 - The pond is entirely located within Becket soils (57, HSG C). The expected infiltration rate in the C Horizon is between 0.06-0.6 inches per hour. The tested rates were found to average 19 and 24 inches per hour in the field. Please have the soil scientist review and comment on this discrepancy.
 - The depths of the test pits are not deep enough to conclude the separation requirements are being met. Provide additional test pit data.
 - Two additional infiltration tests are required. Please perform the tests in a different area of the system footprint than the first two tests.
- s. Infiltration Basin 8 (P8)
- The sediment forebay outlet elevation (1151) is depicted as 1150 on the G&D plans. Review and revise as necessary.
 - This pond includes a 19 foot cut within the pond bottom footprint and is located within Becket soils (57, HSG C) which have an expected infiltration rate in the C Horizon between 0.06-0.6 inches per hour. The analysis includes a design infiltration rate of 5 inches per hour. The design of this pond was not reviewed because there are no supporting test pits within the footprint of the system (two are required) and the pond was not included in the Infiltration Feasibility Report.
- t. Infiltration Basin 9 (P9)
- The sediment forebay outlet elevation must be set lower than the berm elevation of the

forebay and basin.

- Two test pits located within the footprint are required for the design.
- Test Pit A consists of compact silty till below 1.1 feet of silty loam. The tested infiltration rate was found to be 24 inches per hour which is typical of sandy well drained soils and is not consistent with the soil noted in the test pit log. Please have the soil scientist review and comment on this discrepancy.
- An additional infiltration test is required. Please perform the test in a different area of the system footprint.

u. Infiltration Basin 10 (P10)

- The forebay outlet elevation in the analysis (1212) does not match the G&D plans (1210). Review and revise as necessary.
- Two test pits located within the footprint are required for the design. The design test pit is located within a different soil series than the basin. The basin is located within Tunbridge soils which has bedrock at a depth of 20-40" and is not typically conducive for infiltration.
- Three infiltration tests within the footprint are required.
- Pull the outlet end of the outlet pipe in toward the fill slope and set the outlet structure into the side slope to provide adequate cover over the pipe.

28. Drainage Analysis for Outfall D (Env-Wq 1504.09)

- a. Subcatchment D1 (pre): The Tc length measured on the plans is longer than that used in the analysis. Revise as necessary.
- b. Subcatchment D2 (pre): Revise the area of woods/grass combination to all woods as shown in the aerial plan and in the post development analysis.
- c. Subcatchment D3 (pre & post): The subcatchment boundary is missing a significant up slope area to the east. Review and revise as necessary.
- d. Review the boundary between Subcatchment D4 and Subcatchment D6. A large area of Subcatchment D6 should be included in Subcatchment D4 and routed to RD6. The Tc for Subcatchment D6 cuts across a natural depression (approximately from Sta. 54+50 to 55+50) formed by the elevation 1150 and 1152 contours. Revise the boundaries for Subcatchments D4 and D6 and the Tc for Subcatchment D6, accordingly.
- e. Subcatchment D5:
 - Per the aerial plan, there does not appear to be any woods in this subcatchment. Revise the Tc to reflect the correct cover type.
 - The impervious area in this subcatchment does not meet the criteria of unconnected impervious area. Revise the analysis.
- f. Subcatchment D5 (post): Revise the slope of the shallow concentrated flow section across the paved area to be 2.5% per the plan.
- g. Subcatchment D7 (pre):
 - Review the boundary of the subcatchment. It appears some of the area flows to the east, including portions of the road.
 - Revise the Tc calculation to match the travel path shown on the plans.
- h. Forebay FDD5 (Plan DD-6)
 - Forebay FDD5 must be 2 feet deep from the bottom to the lowest outlet and the basin water surface elevation must be set to the lowest outlet elevation.
 - Depict and/or label the bottom elevation as 1147.
 - Extend the rip apron for DDP17 to the toe of slope.

- Review and revise the proposed grading of the forebay. The proposed grades do not tie into existing grade properly.
- i. Pond DD5 (Plan DD-6)
- Exfiltration through the media must be routed to the 6" underdrain at 10 inches per hour in the analysis.
 - The outlet structure grate dimensions are 4'x4' on Sheet D-8 and 2'x2' in the analysis. Review and revise as necessary.
 - Revise the mulch storage definition to be 3 inches deep to match the detail instead of 9 inches.
 - Include the elevation of the ESHWT in the BMP worksheet. Provide supporting test pit data.
 - Review and revise the proposed grading of the basin. The proposed grades do not tie into existing grade properly.
 - Depict the width of the retaining wall that proposed contours 1146, 1148 and 1150 tie into.
- j. Forebay FDD6 (Plan DD-7)
- Label the pipe that outlets into the forebay.
 - Revise the analysis to eliminate any "outflow exceeds the inflow" errors.
 - The forebay is located within the ESHWT. Set the starting water surface elevation in the drainage analysis to the spillway elevation.
- k. Pond DD6 (Plan DD-7)
- Review and revise the proposed grading of the basin. The proposed grades do not tie into existing grades properly.
 - The design test pit was dug to a depth of 1 foot. Please provide another test pit that is deep enough to prove separation requirements are met.
 - The infiltration test was not conducted at the bottom elevation of the pond. For bioretention systems this is the elevation at the bottom of the filter. Conduct a test at the correct elevation.
 - The pond must be included within the limits of the site specific soil survey.
 - Set the riprap apron at the pipe outlet. Depict the outlet structure on the plans.
29. Drainage Analysis for Outfall E (Env-Wq 1504.09)
- a. The inflow to eCB1 and eCB2 must each be separate points of analysis in the drainage report as well as any culverts to the east under Route 116. Revise the analysis accordingly.
 - b. Subcatchment E1 (pre & post): The impervious area for this subcatchment could not be verified. The boundary does not fully encompass the disturbed area associated with the Route 16 road work and the limits of the subcatchment is not fully shown on the drainage plans. Revise the plans as necessary.
 - c. Break up Subcatchment E2 (pre) to include the area that flows to the beginning of Reach RE1.
 - d. The area of Subcatchment E3 (pre) north of Reach RE4 should be included in Subcatchment E4 (pre). Review and revise as necessary.
 - e. Likewise, the area of Subcatchment E3 (pre) south of Reach RE4 on the east side of the road crown should be included in Subcatchment E2 (pre).
 - f. Review and revise the subcatchment boundary between E3 and E4. A portion of the road will bypass Pond PDD1 and should be included in E.
 - g. A portion of Subcatchment E6 (pre) should be directed to culvert RE7 per the existing grade contours for the road. Review and revise as necessary.

- h. Subcatchments E7 (pre) & E14 (post): There appears to be a longer Tc (time) if the travel path starts at a high point in the wooded area of the subcatchment. Confirm the travel path is in the correct location.
- i. Break up Reach RE3 (pre) into two reaches, one upstream and one downstream of the Reach RE2 intersection. Include offsite areas that flow to these two reaches. The subcatchment boundary must reflect the area that will flow entirely through the reach from beginning to end, not along its length. Revise the post-development accordingly.
- j. Provide more detail, including contour labels on the drainage and design plans, to allow review of the subcatchment boundaries of E8, E9, and E11. The boundaries could not be verified.
- k. Subcatchment E7: Correct the boundary of the subcatchment around Pond DD2.
- l. Pond DD4 & Forebay FDD4 (Plan DD-4)
 - Forebay FDD4: The area of the 1098 bottom contour measures 16 square feet (SF). Revise the storage definition accordingly. If the system is within the ESHWT, assume the starting water surface elevation at the spillway.
 - Label Pipe DDP12 as a perforated underdrain. Relocate the pipe to the center of the basin.
 - The bottom area measures approximately 1,100 SF on the plans. Revise the analysis accordingly.
 - If the bottom of the basin is at elevation 1100, delete the extra contour line that represent the bottom.
 - On the plans, depict the 1098 contour at the bottom of the sediment forebay.
 - The outlet structure grate dimensions are 4'x4' on Sheet D-8 and 2'x2' in the analysis. Review and revise as necessary.
 - Exfiltration through the media must be routed to the 6" underdrain at 10 inches per hour in the analysis.
 - This outlet is located within the wetland boundary. However, a wetland impact area is not noted on the plans. Review and revise as necessary.
 - The outer slope is missing a 1098 contour. Confirm there is sufficient cover over the outlet pipe.
- m. Pond DD3A & Forebay FDD3A
 - Forebay FDD3A: If the system is within the ESHWT, assume the starting water surface elevation at the spillway.
 - Provide a berm and spillway at the forebay outlet.
 - Exfiltration through the media must be routed to the 6" underdrain at 10 inches per hour in the analysis.
 - Depict the bottom of basin contour on the plans.
 - The basin does not have a berm represented by two 1096 contours. The upslope 1096 contour will direct upslope areas around the pond. Revise the proposed grading or subcatchment boundary accordingly.
 - The outlet structure grate dimensions are 4'x4' on Sheet D-8 and 2'x2' in the analysis. The elevation of the grate in the table is incorrect. Review and revise as necessary.
- n. Pond DD3 & Forebay FDD3
 - Depict the berm and bottom elevation contours for the forebay and basin. On the plans, there is a small square shown in the basin that appears to be a contour line, but the area does not match any of the contours in the storage definition. Revise if necessary and label the contour.

- Include this basin in the Infiltration Feasibility Report. Infiltration does not appear to be feasible per the test pit data and soil survey. One of the two nearest test pits (MJ28) which were only located on the Existing Conditions Soil Mapping Plans, show a depth to ESHWT of 21" and that separation requirements are not met. The other test pit (MJ27) was dug to a depth of 14" for soil survey use only. The current basin bottom is set at the ESHWT where 3 feet of separation is required.
- o. Pond DD2 & Forebay FDD2
- There appears to be a retaining wall on the down slope side of the pond but only a dashed line is shown on the plans. Label and depict the actual limit of the wall based on the plans.
 - Depict the berm and bottom elevation contours for the forebay and basin.
 - Depict the elevation 1048 contour in the sediment forebay.
 - The outlet structure grate dimensions are 4'x4' on Sheet D-8 and 2'x2' in the analysis. Review and revise as necessary.
 - Exfiltration through the media must be routed to the 6" underdrain at 10 inches per hour in the analysis.
- p. Pond DD1 & Forebay FDD1
- Review and revise the proposed grading. The elevation 998 contour line does not tie in correctly. There appear to be two forebays based on the multiple elevation 998 proposed grade contours shown.
 - Additional proposed grade lines are necessary to show no impact to the adjacent wetland. Extend the proposed grade 1000 contour on the west side of the pond to tie into the existing grade 1000 contour that runs along the wetland.
 - Pond DD1 and DD1A are both labeled as DD1 on the plans. Review and correct.
 - Exfiltration through the media must be routed to the 6" underdrain at 10 inches per hour in the analysis.
 - The outlet invert of culvert DDP8 is not consistent with Plan DD-11. Review and revise as necessary.
 - The outlet structure grate dimensions are 4'x4' on Sheet D-8 and 2'x2' in the analysis. Review and revise as necessary.
 - Depict the berm and bottom elevation contours for the forebay and basin.
 - Extend the riprap spillway to existing grade on the exterior slope of the berm.
- q. Pond DD1A & Forebay FDD1A
- The proposed grade lines do not tie into existing grade correctly. The elevation 988 contour line cannot intersect with multiple 988 contours lines in the same location. Review and revise as necessary.
 - There is a small wetland that is proposed to be filled near Route 116 at Sta. 55+75 Lt. 30'. The wetland impact is not called out on the plan. Confirm whether this area will be impacted.
 - This basin must meet treatment practice criteria per Env-Wq 1508. Submit a BMP worksheet and any other necessary supporting information.
 - The drainage analysis includes infiltration. Include this basin in the Infiltration Feasibility Report. Please note the basin is over Skerry soils which have a default infiltration rate of less than 0.5 inches per hour in the C Horizon. Therefore the default rate cannot be used and infiltration testing is required.
 - Provide pretreatment for runoff from all impervious surfaces.

- A forebay is shown on the plans but the elevations are not listed in the detail on Sheet D-7. Review and revise as necessary.
 - Test pit data was not submitted. The test pit must be dug at the high end of the system in the location of the greatest cut.
 - Depict the berm and bottom elevation contours for the forebay and basin.
 - The spillway outlet elevation does not coincide with the location of the riprap shown on the plans. Review and revise as necessary.
30. Post-Development Intermediate 1 (Stage1 Cell 2) Drainage Analysis (Env-Wq 1504.09): Review and revise the boundary between Subcatchments B2 and B4 for consistency with the existing topography.
31. Post-Development Intermediate 2 (Stage2 Cell 2) Drainage Analysis (Env-Wq 1504.09)
- a. Subcatchment B7: The Tc path through woods exceeds that measured on the plans. Revise as necessary.
 - b. Peak flows from the design storms that cannot be passed by the culverts located at PWH-31 and PWH-28 must be routed as secondary flow, at the bypass weir elevation shown, down to the next culvert. Evaluate the need for riprap at each weir in this condition.
 - c. The node listing does not match the full summary printout for Outfall A, B and C. The peak flow rates differ for some of the nodes. It appears different versions were submitted. Submit the same version for both printouts.
32. BMP Worksheets
- a. Include supporting stage-area-storage and stage-discharge tables as necessary to support the information listed in the worksheets. None of the BMPs could be verified to hold the WQV. The volume that must be listed in the worksheet is the volume held below the lowest outlet elevation, not the total storage available in the basin up to the berm.
 - b. Infiltration Basin P7, P8: Provide calculations with the areas noted at the bottom of the worksheet to support the total area and impervious area.
33. Existing Gravel Pit (WPS-7943)
- a. The project limits overlap with an active gravel pit located on Tax Map 406 Lot 2.1 and 3 and permitted under WPS-7943. If the gravel pit will continue to operate during and after construction of the landfill, WPS-7943 will need to be amended or a new permit issued prior to commencing construction for the landfill project to identify the areas of the property that are covered under each permit.
 - b. This permit requires that a plan update be submitted and approved every 5 years. Please complete the update and utilize the existing topography within the excavation limits for this application.
 - c. How will the gravel pit be accessed from Douglas Drive? Add site details to the plans including entrances, drives, stationary equipment, and buildings associated with WPS-7943.
 - d. WPS-7943 requires that excavation proceed such that there is no increase in peak flow from the site from the pre- to post-development. The approved plans depict stormwater basins and swales necessary to meet this requirement due to the change from a pre-development wooded condition. Revise the pre-development analysis for AoT 231113-224 to include these features required under WPS-7943 or model the area permitted under WPS-7943 as a wooded condition to represent the condition the land was in was prior to commencing excavation activities.
 - e. The approved plans for WPS-7943 depict property bounds for the gravel pit. Please include the boundary limits and bounds on the plans. If there will be changes, include the proposed

property lines or lease limits.

34. After any necessary revisions to the HydroCAD analysis to respond to the above, submit a revised summary table of the 2-year, 10-year and 50-year pre- and post-development flows, and if necessary, the 2-year pre- and post-development runoff volumes or 1-year flow (pre), to show compliance with the requirements of Env-Wq 1507.05.
35. Env-Wq 1507.05: The application states the Channel Protection Requirements are being met pursuant to Env-Wq 1507.05(b)(1) and (b)(1)(a). This requires that the 2-year, 24-hour post-development peak flow rate generated from the proposed disturbance be equal to or less than the 2-year, 24-hour pre-development peak flow rate and the 2 year, 24-hour post-development storm volume, directed to a channel, downstream receiving water, or wetland has not increased over the pre-development volume by more than 0.1 acre-feet. To confirm the requirement is met, extend the time span of the analysis to ensure all runoff from the 24-hour storm is accounted for in the calculation.
36. Drainage Details & Notes
 - a. Provide a headwall detail and include pipe invert, length, and diameter for proposed or replacement culverts labeled on the plans for verification of the drainage analysis.
 - b. Include a temporary inlet protection detail for culverts and catch basins.
 - c. Stone Lined Swale Detail (Sheet D-6): There are many swales that are not noted to be lined, some exceeding a 20% slope. Please provide riprap sizing calculations for areas that are noted to be protected. Include calculations to confirm the unlined swales will not erode during the 10-year design storm.
 - d. Outlet Protection Detail (Sheet D-7): Specify the stone size (d50) for each apron per the submitted riprap calculations.
 - e. Stormwater Pond/Infiltration Basin (Sheet D-7):
 - Replace reference to *engineering mix* with *amended soil or soil amendment*.
 - Revise Note 5A to state: *A qualified soil scientist, geologist or engineer be retained to design the soil amendment and perform infiltration testing at the infiltration system locations. The information and test results shall be provided to the NHDES Alteration of Terrain Bureau to verify the assumed design infiltration rates of 5 in/hour (actual infiltration rate of 10 in/hour) The depth of the amended soil must be at least 24 inches thick.*
 - Remove Note 5C. The basin floor should not be planted with trees.
 - f. Stone Berm Level Spreader (Sheet D-8): Revise the stone specification to match that listed in Env-Wq 1508.19(g).
 - g. Revise the roadway cross section detail on Sheet D-22 to specify the shoulder width depicted on the plans.
 - h. Erosion Control Notes (Sheet D-12)
 - Add *basins* to Note #16.
 - Add the following note: *Runoff must be directed to temporary practices until stormwater BMPs are stabilized.*
 - i. Please add the following notes to the Infiltration Basin and Bioretention System Details:
 - Do not discharge sediment-laden waters from construction activities (runoff, water from excavations) to the basin.
 - Do not traffic exposed soil surface with construction equipment. If feasible, perform excavations with equipment positioned outside the limits of the basin.
 - After the basin is excavated to the final design elevation, the floor should be deeply tilled

- with a rotary tiller or disc harrow to restore infiltration rates, followed by a pass with a leveling drag.
 - Vegetation should be established immediately.
 - Do not place systems into service until the contributing areas have been fully stabilized.
 - j. Stone Check Dam Detail (Sheet D-12)
 - Stone check dams must be constructed of a well-graded angular 2-inch to 3-inch stone.
 - The center of the dam must be at least 6 inches lower than the outer edges.
 - k. Temporary Sedimentation Basin Berm Detail (Sheet D-14): Add the requirements of Env-Wq 1506.10(b) through (f) to the detail.
 - l. Sheet D14: Add clarifying notes to the *Wetland Fill Typical Section* and *Wetland Edge Treatment Detail* on Sheet D-14 to note all work in wetland areas shall be in accordance with required permits.
 - m. Stabilized Construction Entrance (Sheet D-14)
 - Specify that 3" *crushed* stone be used.
 - Note the minimum width to be 10 feet.
37. Source Control Plan (Env-Wq 1503.11(f)): Pursuant to Env-Wq 1504.08(b), a stormwater pollution prevention plan (SWPPP) was submitted to meet the source control requirements. The SWPPP did not include all the information required to address Env-Wq 1504.08(b)(1) and (2). Please revise the SWPPP to include the location(s) of groundwater protection areas, if any, within 1,000 feet of the site perimeter and address any procedures and practices necessary to protect groundwater quality.
38. Inspection and Maintenance (I&M) Manual (Env-Wq 1507.07)
- a. The submitted I&M Manual was not complete. Please add the following to the manual:
 - Description of each BMP
 - Conveyance swales, grass and riprap lined
 - Culverts
 - Inspection frequencies
 - Depth at which sediment is removed from forebays and catch basins
 - State whether a staff gage will be installed in sediment forebays or not
 - Deicing log
 - Note information regarding the filter media used in rain gardens
 - b. Revise the checklist for the infiltration basins and bioretention systems that will infiltrate to include the following:
 - Inspect infiltration components at least twice annually and following any rainfall event exceeding 2.5 inches in a 24-hour period, with maintenance or rehabilitation conducted as warranted by such inspection.
 - If an infiltration system does not drain within 72 hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limited to removal of accumulated sediments or reconstruction of the infiltration trench.
 - c. The manual must address responsibilities for each system, depict easements on plans as necessary, and provide draft deed language where required.
39. Please be aware there will be a permit condition that requires that a qualified soil scientist, geologist or engineer be retained to design the soil amendment and perform infiltration testing at the infiltration system locations. The information and test results shall be provided to the NHDES

Alteration of Terrain Bureau to verify the assumed design infiltration rates of 5 in/hour (actual infiltration rate of 10 in/hour). The depth of the amended soil must be at least 24 inches thick.

40. Pursuant to Env-Wq 1503.15(b), changes to the revised plans are to be called out and a revision date must be added to each page that has been changed. Graphical revision callouts should be included on the plans. If any changes to the plans or the hydrologic/hydraulic analysis were made other than those identified above, please indicate what additional changes were made in your response letter.
41. Env-Wq 1503.21(c) requires that that the permit holder and a qualified engineer certify that the project was completed in accordance with the approved plans, or that deviations were made which did not require an amended or new permit. A permit condition will require this certification.
42. Pursuant to Env-Wq 1503.15(e), provide, in electronic format, a copy of all project documents that were modified in response to DES's request for more information. Pursuant to Env-Wq 1503.15(b), changes to the revised plans are to be called out and a revision date must be added to each page that has been changed. Graphical revision callouts must be included on the plans. If any changes to the plans or the hydrologic/hydraulic analysis were made other than those identified above, indicate what additional changes were made in your response letter. As a separate document, provide a copy of the complete application with all documents current to reflect any modifications from the original application.

Please submit a **single and complete** response. Please be aware that in accordance with RSA 485-A:17, if all the information requested above is not received within the next 120 days, **by October 22, 2024, your application will be denied.** Should additional time be necessary to submit the required information, an extension of the 120-day time period may be requested. Requests for additional time must be received prior to the deadline in order to be approved. In accordance with applicable statutes and regulations, the applicant is required to send a copy of the response, with a cover letter stating the reasons for providing the additional information, to all individuals and entities to whom the applicant was required to provide a copy of the initial application.

If you have any questions, please call me at (603) 271-3568 or email at: michael.j.schlosser@des.nh.gov.

Sincerely,



Michael Schlosser, PE
Alteration of Terrain Bureau

ec: Dalton Planning Board (planningboard@townofdalton.com)
Bethlehem Planning Board (planning@bethlehemnh.org)
Adam Sandahl, CMA Engineers, Inc.
Douglas Ingerson
Ammonoosuc River LAC
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