

# TOWN<sub>OF</sub> BRISTOL

## MOUNTAIN STREET STORMWATER IMPROVEMENT SCOPING STUDY MAY 30, 2025



DuBois  
& King inc.





May 30, 2025  
230862X

Ian Albinson, Interim Town Manager  
Town of Bristol  
1 South Street  
PO Box 249  
Bristol, VT 05443  
Sent via email to: townadmin@bristolvt.org

**Subject: Mountain Street Stormwater Improvement Scoping Study**

Dear Mr. Albinson and Selection Committee,

DuBois & King (D&K) is pleased to provide the following scope of work and fee proposal to assist the Town of Bristol with the evaluation of existing stormwater infrastructure and drainage along Mountain Street in Bristol, VT. We understand that more frequent and intense rainfall events have led to the existing stormwater drainage system being overwhelmed and has resulted in property and utility damage. The D&K staff assigned to this project have extensive experience providing stormwater engineering services. They have assisted other municipalities across Vermont with similar stormwater control issues and look forward to developing alternatives to help protect the Town's infrastructure and nearby properties.

While most of D&K's stormwater team members have not previously worked with Bristol, they will draw on the firm's familiarity with the Town through previous project work. They will use their experience with stormwater design and permitting knowledge, and the firm's knowledge of the area to develop cost-effective, low-maintenance Best Management Practices (BMPs) to achieve the project's goals and provide value to the Town. I will serve as the Project Manager and primary contact for this project. I have 32 years of professional experience, including significant expertise in the planning and implementation of stormwater BMPs. I am trained in stormwater management, site design, treatment system design, and stormwater erosion and sediment control. My experience includes designing a variety of stormwater BMPs and guiding stormwater infrastructure improvements on a wide range of projects for municipalities, planning commissions, and local clients.

Aimee Rutledge, PWS, CPESC, CPSWQ, and Christopher Rivet, PE, will manage the site evaluation, permitting evaluation, and development of alternatives under this contract; both are skilled communicators and have managed and provided these services for the projects presented in our qualifications. Aimee has 26 years of experience and a deep background in green stormwater project development, wetland science, natural resource management, permitting, and NEPA. Chris is highly proficient with the VT DEC stormwater regulations and has successfully delivered a range of stormwater projects for municipalities throughout the Northeast.

We look forward to the opportunity to support the Town of Bristol under this contract. If you have any questions, please do not hesitate to contact me at 802.728.3376 or ahoak@dubois-king.com

Sincerely,  
**DuBois & King, Inc.**

Andrew Hoak, PE, PG  
Director, Environmental Services

# TOWN OF BRISTOL

## Mountain Street Stormwater Improvement Scoping Study

## Firm Overview

DuBois & King is a multidisciplinary consulting firm that provides planning, engineering, and construction phase services to municipal, state, and federal clients in the areas of environmental documentation and permitting, transportation, site development, water resources, survey, water/wastewater design, and mechanical, structural, and electrical engineering. Having extensive in-house disciplines reduces the need for subcontracting and supports a range of projects with fluid project development, management, and communications. With offices in Vermont, New Hampshire, New York and Maine, the firm employs 160 professional engineers, surveyors, technicians, environmental and permitting specialists, wetland scientists, landscape architects, and support staff.

D&K knows the Town of Bristol well and has successfully completed several transportation scoping study and engineering projects for the town directly or indirectly with the ACRPC. The D&K team members assigned to this project are relative newcomers to working with the Town. They bring a fresh perspective and ideas to the project backed by their extensive experience addressing a variety of stormwater issues for municipalities across Vermont. The D&K team presented will be supported by D&K in-house staff who have previously worked in and around the Town. The D&K stormwater team's capabilities and qualifications follow.

## Stormwater

D&K has been and continues to be a leader in the field of stormwater management, working with the evolution of stormwater regulations since their inception in the early 1970s. D&K's team includes stormwater engineers with experience designing treatment and control measures to comply with state standards for new development and redevelopment projects and as retrofits for existing sites. Stormwater management plans include water quality treatment, channel protection, groundwater recharge, overbank flood protection, and flood mitigation.

D&K also has experience with Green Stormwater Infrastructure/Low Impact Development (GSI/LID) design including:

- Non-structural measures and credits, such as disconnection of impervious surfaces
- Wet swale, dry swale
- Pond systems
- Extended detention wetland
- Infiltration systems
- Pervious surfaces
- Bioengineering
- Bioretention
- Underground storage using pipes with weir plates and modular plastic chambers
- Hydrodynamic swirl separators

## Permitting

D&K's Environmental Services team provides comprehensive environmental assessment and permitting for municipal, state, and federal clients. Recent relevant permitting experience includes:

- Construction General Permit (CGP)
- Multi-Sector General Permit (MSGP)
- Small Municipal Separate Storm Sewer System (MS4) Permit
- General Permit 3-9020 (Low Risk and Moderate Risk Projects)
- Individual Permits
- Vermont State "Operational" Stormwater Permits
- General Permit 3-9050 New/Expanded Projects
- General Permit 3-9050 Previously Permitted Projects
- Wetlands (State and Federal)
- Threatened, Endangered, or Rare species or communities
- Right of way/easements
- Local zoning, site plan, and subdivision review
- Cultural Resource Assessments and Section 106 Concurrence
- NEPA Documentation
- Act 250 Land Use Permits
- 401 Water Quality Certification
- Water Supply and Wastewater Disposal Permit
- Indirect Discharge Permits
- Insignificant Waste Disposal Event





## Hydrology and Hydraulics

D&K has dedicated water resources staff who provide hydrology and hydraulic (H&H) analyses to support stormwater, bridge, culvert, dam, floodplain management, and channel stabilization and restoration projects. The D&K team includes H&H modelers who are skilled with a wide range of models, including HydroCAD, HEC-RAS, and Hydraflow. These professionals are adept at applying the best modeling tool to answer the questions at hand. For example, in developing a design and permit application for an Agency of Transportation project in Colchester, D&K H&H modelers used HEC-RAS to evaluate the stormwater detention provided by an existing mowed meadow when it became clear that HydroCAD could not sufficiently answer the question. D&K staff have used HydroCAD to estimate peak inflows to a municipal storm drain system and then used Hydraflow to determine where the system had insufficient capacity.

## Similar Projects


The following selected projects illustrate D&K's success and current participation in projects that include the study, design, permitting, public engagement, bidding, and implementation of stormwater improvement projects.

### **GREEN SCHOOLS, STORMWATER EVALUATION AND DESIGN, STATEWIDE, VT**





D&K is providing engineering and environmental services for feasibility studies and design of stormwater improvements for the following schools under the Vermont Green Schools Initiative Phase I: North Country Union High (Newport), Northern Vermont University (Johnson), Newport City Elementary School (Newport), Poultney Elementary School (Poultney), and Spaulding High School (Barre). The Green Schools Initiative aims to reduce stormwater runoff and pollution entering Lake Champlain and Lake Memphremagog from school grounds and to meet the state Three-Acre General Permit stormwater regulation. The projects will work to incorporate green infrastructure practices and retrofit stormwater systems. The D&K team is working to incorporate coordination with watershed groups and the schools to amplify co-benefits and identify outreach and education opportunities for the school and community. The projects will result in final design, construction opinions of cost, and permit approvals in preparation for the construction phase of the Initiative.

### **THREE-ACRE PERMIT- COMPLIANT DESIGNS, MANUFACTURED HOUSING COMMUNITIES, STATEWIDE, VT**



D&K is providing design and permitting assistance for non-profit, cooperative, or privately-owned manufactured housing communities (MHCs) located within the sensitive Lake Champlain and Lake Memphremagog watersheds. D&K is working with VT DEC, in accordance with the Governor's Recovery Plan for the stormwater mitigation efforts at MHCs and in accordance with the Stormwater General Permit 3-9050, also known as the "Three-Acre General Permit." The project includes developing a project and providing permit compliance to improve stormwater runoff and water quality. For each manufactured housing community, D&K's role is to evaluate and document the suitability implementing of a wide range of green stormwater best management practices (BMPs) such as bioretention, above- and below-ground infiltration and treatment systems, and bioengineering. If conditions such as slope, soil type, presence of ledge, water table, etc., permit the use of BMPs, D&K will design and provide permitting assistance for the implementation of BMPs throughout each site. The VT DEC has assigned D&K to provide these services for eight MHCs.

### **STORMWATER FINAL DESIGN AND IMPLEMENTATION, FAIRLEE, VT**



To improve the overall function and aesthetic of the corridor, reduce stormwater impacts on businesses along US 5, and successfully implement the proposed green stormwater treatment practices to manage runoff, the town used Municipal Mitigation Grant funding through the VTtrans Municipal Assistance Section (MAS) to complete the design and implementation of green stormwater infrastructure. D&K is providing engineering design services for green stormwater infrastructure at three locations: in front of the Lakeside Automotive, Samurai Soul Food, and Country Supply. D&K's services and deliverables included attending stakeholder meetings; providing a topographic survey, base mapping and resources; preparing preliminary plans, permitting, right-of-way plans



and acquisition process, contract plans, and an opinion of probable construction costs; assisting with the bidding and award process and construction phase services.

### **STORMWATER IMPROVEMENTS, BARRE AUDITORIUM, BARRE, VT**

D&K is designing an underground sand filter, site improvements, and other appurtenant systems to improve the stormwater collection and treatment system for the parking area serving an indoor municipally owned gathering space. The site includes a drainage area of 27.4 acres, of which approximately 10 acres is impervious. Along with the municipal buildings and parking lot, a portion of the drainage area includes residential development along several streets. Stormwater is currently collected in a series of storm drains originating along residential streets in the upgradient portions of the watershed which eventually combine with storm flows generated at the Barre City Auditorium site and ultimately daylight to Gunners Brook. As part of a previous region-wide initiative, D&K developed 30% designs and the purpose of this project is to review the conditions and regulations and collect input from the owners and stakeholders. D&K's responsibilities included final design, permitting, and construction phase services.

D&K is assessing conditions and providing design alternatives, including considering green infrastructure improvements. D&K's services include compiling relevant data; conducting site visits and stakeholder meetings, including with VTDEC, VTrans, and USACE; developing and integrating conceptual through contract documents; providing a final report with an OPCC; and providing permitting assistance.

### **RAIN GARDEN AND BULB- OUT, MERCHANTS ROW, RANDOLPH, VT**

To collect, infiltrate, and treat stormwater from a one-block, one-way street with sidewalks, D&K designed a rain garden and sidewalk extension. The project disconnects a significant amount of impervious surface from the municipal closed drainage system and provides additional space for pedestrians to safely navigate the crossings at this four-way intersection. D&K provided survey, engineering, permitting, and landscape architecture for the successful completion of this project.

### **EAST LAKE ROAD IMPROVEMENTS, EASTMAN COMMUNITY ASSOCIATION (ECA), GRANTHAM, NH**

D&K assessed existing conditions (including stormwater patterns, drainage infrastructure, erosion areas, roadway conditions, and subsurface conditions) to evaluate stormwater quality, erosion, and roadway improvements to mitigate water quality impacts to Eastman Lake. The ECA is located within the sub-association of the Eastlake Condominium Association (ELCA), and D&K collaborated with both stakeholders on developing improvement alternatives. D&K's engineering study reviewed the roadway surface, stormwater collection, and stormwater treatment options to enhance water quality discharging to the lake. Through the completion of a study summarizing the assessment, public meeting input, and direction from the ECA, portions of the project were designed by

### **IMTEC LANE GULLY STABILIZATION AND RESTORATION, WINDHAM REGIONAL COMMISSION, ROCKINGHAM, VT**

WRC sought to improve channel and slope stability adjacent to Imtec Lane and the Sonnax Facility. The site is situated in a wooded commercial/industrial park and is susceptible to significant erosion and incision due to physical and geologic conditions, including steep slopes and sandy soil conditions. Project objectives include reducing erosion and sediment contribution to downstream reaches, stabilizing deep-seated slope movement and stream banks, and protecting utilities and private property within the project reach.





D&K and constructed. D&K provided H&H analysis, open and closed drainage system evaluation and design, geotechnical engineering, wetland delineation, survey, and NHDES permitting assistance. D&K provided periodic construction observation.

### **NORWICH RESERVOIR DAM REMOVAL, CONNECTICUT RIVER CONSERVANCY, NORWICH, VT**

The Norwich Reservoir Dam was a run-of-the-river, cyclopean concrete gravity dam located on the Charles Brown Brook. The dam impounded a reservoir which became silted in and the dam served no useful function.

The dam caused significant negative impacts to the brook and to downstream reaches. The dam blocked fish passage and caused downstream sediment starvation. The D&K team designed a restoration of Charles Brown Brook several hundred feet upstream of the dam. Services included topographic survey, wetland delineation, hydrologic and hydraulic modeling, geomorphic assessment, regulatory coordination, community outreach, and final dam removal and river restoration design.



### **SLOPE STABILIZATION AND STORMWATER QUALITY IMPROVEMENTS, CHROMA TECH, BELLOWS FALLS, VT**

D&K provided evaluation, design, and permitting services to stabilize a failed embankment abutting a stream and improve on-site stormwater collection and treatment practices at a light industrial campus. The size of the slope experiencing failure was approximately 0.3 acres and the approximate size of the site is 12 acres.

D&K collaborated with regulatory and funding agencies and the owner to address watershed and site issues.



### **STORMWATER ASSET MANAGEMENT PLANNING, PEMBROKE, NH**

D&K led the development of a stormwater Asset Management Plan and worked collaboratively with the town to supplement field-collected data with GIS information for their stormwater collection, conveyance, and treatment system. D&K coordinated with the town to identify and rate stormwater features for the inventory, prioritization, and life cycle costs. The town's inventory included more than 20 miles of pipes, and 800 other assets, such as catch basins and outlets. D&K helped the town to form their Vision Statement and Level of Service (LOS) statement and to identify the stakeholder group. The project received funding from the Clean Water State Revolving Fund (CWSRF).



### **WESTON FLOOD STUDY WESTON, VT**

This study was completed this study to improve the Town's understanding of the hydraulic capacity on the West River near the village center of Weston. The study area begins near the intersection of VT Route 100 and Burton Road and continues approximately 1,000 ft downstream of the Lawrence Hill Road Bridge. Portions of Cold Spring Brook are also included in the study area and extend from its confluence with the West River approximately 500 ft upstream. The watershed area of the West River at the study area is approximately 26.5 sq. mi.



D&K completed a detailed hydrologic and hydraulic analysis of the potential flood reduction if various alternatives are implemented. Based on the results of the analysis, the removal of the Mill Dam has the greatest potential impact on reducing flood Written Scheme of Examination (WSE) and extents, particularly in the upstream reaches of the project area. Potential modifications to the Lawrence Hill Road Bridge and stream channel below the dam also had a minor but positive impact on flood reduction. However, none of the evaluated alternatives (either individually or in combination) effectively mitigated storm flows to the degree that would prevent overbank flow or inundation of the developed portion of the



study area. D&K provided the following recommendations to mitigate flooding.

- Floodplain Management
- Lawrence Hill Road Bridge Modification
- Old Mill Dam Removal
- Supplemental Flood Mitigation Measures

D&K recommends owners of structures in these areas investigate other flood damage mitigation options such as wet and dry flood proofing, elevating structures, and FEMA property buyouts.



### SUBSURFACE GRAVEL WETLAND, ESSEX JUNCTION, VT

D&K assisted the City of Essex Junction in meeting the Town's phosphorus TMDL by designing a subsurface gravel wetland (SGW) as proposed in the Indian Brook Flow Restoration Plan. The SGW treats the stormwater discharge from a 17.7-acre watershed, including 6.5 acres of impervious area associated with three homeowners associations, roadways, and sidewalks. Stormwater treatment includes reducing total suspended solids and phosphorus loading. D&K coordinated with three homeowners associations, led design, and provided permitting assistance.



Stormwater treatment includes reducing total suspended solids and phosphorus loading. D&K coordinated with three homeowners associations, led design, and provided permitting assistance.

### JENNESS COVE SEDIMENTATION STUDY, MEREDITH, NH

D&K's environmental and water resources staff led a study that evaluated potential pollutant sources and pollutant loading to the cove, including site reconnaissance, desktop review and analysis, utilizing the EPA STEPL method for pollutant load, hydrologic modeling with HydroCAD, and sediment sampling of the cove and the upstream wetland/stream. Multiple recommendations were made to address cove sedimentation and aquatic plant growth and reduce pollutant loading.

The Vermont Lake Wise Program was used as a reference for evaluating the cove watershed and recommending best



management practices for water quality improvement. D&K held a virtual meeting with Windy Waters Conservancy and stakeholders to present and discuss the project findings. The final deliverable, Preliminary Findings and Recommendations Memorandum, will be used by the Conservancy for a state water quality grant application.

### D&K'S BRISTOL PROJECT EXPERIENCE

- West Pleasant Street Sidewalk
- Pine Street Scoping Study
- Airport Drive Scoping Study
- Firehouse Drive Scoping Study
- Munsill Avenue Scoping Study
- VT 17/Lincoln Road Intersection
- West Street Slope Stability
- Park Lighting
- FEMA Briggs Hill Slope
- MAS Basin Street Reconstruction
- Accessible Recreation Design

## Approach to the Scope of Work

D&K will initiate the project by meeting with the Town and other stakeholders to discuss identified problem areas and project priorities. D&K will conduct field investigations, preliminary design, and a permitting evaluation as outlined in this proposal. D&K has formatted the scope of work to coincide with the requirements of BRIC funding and the objectives of the RFP. Where necessary, we have provided additional details to support our approach to the project.

D&K understands that stormwater flows in a westerly direction off Hog Back Mountain in the vicinity of Mountain Street via sheet flow, shallow concentrated flow, and within several unnamed tributaries discharging to shallow roadside swales and catch basins along the eastern side of Mountain Street. A more significant unnamed tributary located directly to the east of the elementary school produces flows year-round and is directed to a paved and stone reinforced roadside swale along Mountain Street. During heavy rainfall events the unnamed tributary produces significant flows to the point where the paved roadside swale and downstream stormwater infrastructure is overwhelmed. This has resulted in flows crossing Mountain Street and impacting the elementary school and adjacent properties.

Preliminarily D&K plans to include several alternatives as part of the Scoping Study to help address stormwater impacts in this area. We anticipate that the list of alternatives will

change as additional information is obtained, but may include the following alternatives

- Installation of a catch basin at the discharge location of the unnamed tributary leading to Mountain Street to prevent or limit overtopping along the road;
- Improving, enlarging, or deepening the paved roadside swale to increase hydraulic capacity;
- Installation of additional catch basins on the west side of Mountain Street along the curbed section adjacent to the elementary school to aid in stormwater collection during significant storm events;
- Enlarging or repositioning the RCP culvert that collects flows from the paved roadside swale;
- Installation of a new overflow culvert along Mountain Street and Garfield Street to convey flows;
- Potential collection, detention, and controlled release to the existing drainage system; and
- Implementing Green Stormwater strategies on the elementary school property to reduce the overall volume of water conveyed to the storm drain system.

Once stormwater is collected along Mountain Street it proceeds in a westerly direction along Spring Street and then to the south along North Street, crossing Main Street and continuing south along South Street until it ultimately discharges to the New Haven River. D&K understands the importance of not only evaluating stormwater related impacts in the vicinity of the project location but also evaluating the downstream stormwater collection and conveyance system. Often times downstream drainpipes may be undersized, lack sufficient grade, or are in need of repair to effectively convey flows. As part of our scope of work D&K plans to evaluate the complete stormwater collection system for this subwatershed to affirm appropriate design and condition.

D&K understands that existing drainage features surrounding the site may limit potential design options. We will aim to implement practices that are focused on effectively collecting and conveying stormflows from the project site. With this in mind, D&K will develop alternatives that are appropriately sized and focus on addressing on-site stormwater impacts.

## Scope of Work

### TASK 1. KICKOFF AND DATA COLLECTION

D&K will schedule and lead a kickoff meeting at the project site with the Town and other project stakeholders. With project stakeholders, D&K will review the scope of work and schedule, identify project objectives and potential challenges, and identify relevant existing information, such as previous surveys, tax maps, ROW or utility restrictions, and infrastructure.

Prior to formal site reconnaissance/investigations, D&K will collect and review available information and records from the Town, VT DEC, and other relevant sources as available. D&K will review the documents and create a chronological summary of the available information for future use.

**Deliverables:** Kickoff meeting minutes, a tabulated list of reviewed referenced information

### TASK 2. FIELD INVESTIGATION

D&K will complete a topographic survey of features of interest within the project area. D&K's land survey crew will complete data collection to include a combination of survey-grade Real Time Kinematic (RTK) Geographic Positioning System (GPS) merged with available LiDAR Digital Elevation Models (DEMs). The survey team will conduct elevation measurements relative to the National Geodetic Vertical Datum of 1988 (NGVD 88).

D&K will use the survey data to generate a digital base map in AutoCAD that includes one-foot contour interval topography, existing infrastructure, visible or marked utilities, treelines, existing drainage features, and other information pertinent to conceptual design development. We will add buried utilities identified on any Town-provided plans or marked in the field to the base map, along with approximate property lines estimated from municipal tax maps and boundary evidence located in the field.

D&K will perform a desktop review of the site soil information using the Natural Resources Conservation Service (NRCS) Web Soil Survey. We will use the soil information we gather to support our initial evaluation of potential stormwater management infrastructure and BMPs for the site.

**Deliverables:** Completed survey point file, existing conditions plan using AutoCAD Civil 3D



### TASK 3. HYDROLOGY & HYDRAULICS ANALYSIS

D&K will develop a HydroCAD model of the project area using the topographic survey, LiDAR survey data, site observations, aerial imagery, and soil mapping results to define the stormwater collection and conveyance system. D&K will evaluate information on velocity, water surface elevation, pipe sizing, catch basin placement and grate size, and alternatives for effective stormwater management.

**Deliverables:** Completed HydroCAD hydrologic model and supporting files

### TASK 4. ALTERNATIVES ANALYSIS

D&K will develop a list of alternatives for stormwater improvements at the project location. We will evaluate each alternative against a set of criteria, including construction costs, durability, operations, impacts to adjacent property owners, and additional criteria identified as the project develops.

D&K will prepare a matrix tabulation to compare the alternatives for the following parameters:

- Construction costs
- Hydraulic performance
- Permitting requirements
- Additional analysis required/data gaps
- Budget-level engineering fees for design, permitting, and construction
- Adverse historic or natural resources considerations and mitigations for each alternative

**Deliverables:** Brief description and conceptual configuration of identified alternatives and matrix



### TASK 5. CONCEPTUAL DESIGN

D&K will develop the selected alternative into a preliminary site plan (30% design level) depicting the necessary site improvements. The preliminary plans will indicate the existing topography and other base information, and illustrate the proposed work. We will indicate identified rights-of-way, utilities, natural and cultural resources, and other features affecting the design on the plans. The Preliminary Plans are anticipated to consist of:

- Title Page
- Notes Sheet
- Layout Sheets showing existing and proposed features
- Preliminary profiles
- Approximate right of way lines and construction limits
- Typical Sections and Details for the proposed improvements
- Erosion Prevention and Sediment Control Plan

**Deliverables:** Completed conceptual plans for the selected alternative

### TASK 6. COST ESTIMATES

D&K will prepare an itemized table of probable construction costs for the conceptual design based on estimated take-off quantities from the design drawings and recent bid information. As the design is developed and refined, D&K will update the table of probable costs to reflect refined material quantities and any new information about item costs. D&K will finalize the opinion of probable construction cost based on comments received on the preferred alternatives.

To determine future benefits of the preferred alternative compared to the likely costs, D&K will complete a FEMA Benefit-Cost Analysis (BCA) at the project location utilizing the FEMA BCA Calculator - version 6.0. Our analysis will include the calculation of the Benefit-Cost Ratio (BCR) which estimates annual hazard risks and evaluates mitigation cost effectiveness, all of which helps in determining appropriateness for future funding.

**Deliverables:** Completed opinion of probable construction cost for the conceptual alternative, completed FEMA BCA with calculation spreadsheets



## TASK 7. PERMITTING EVALUATION AND DRAFT REPORT

Our project team will identify natural resources within the project area through field observation and coordination with the appropriate resource agencies. D&K will utilize in-house GIS capabilities to import known natural resource information into the base mapping. The D&K team will identify anticipated impacts to any known resources and consider them in our plans. We will identify these resources within the vicinity through review, evaluation of available data, and field delineation. Through this coordination, we will review resources and planning initiatives in the study area and summarized below:

- Wetlands and water quality
- Fish and wildlife habitat
- Floodplains
- Archaeologically sensitive areas
- Endangered species/habitat
- Agricultural land
- Hazardous waste sites
- Rivers, streams, lakes, and ponds
- Conformance to the Town Strategic Plan

The D&K team will compile the results of the Alternatives Analysis in a draft Summary Report. The objective is to provide the Town with several feasible alternatives, along with their associated costs and impacts and advantages and disadvantages for future decision-making. D&K will provide a recommendation for selection, supported with technical reasoning.

D&K's comparison of the alternatives will include a written description of the major features, construction costs, ongoing maintenance costs, and an assessment of relative liability, aesthetics, available uses, and other pertinent criteria. The team will present the results of our comparison in narrative form and a summary matrix.

**Deliverables:** Completed list of anticipated permitting requirements for each conceptual alternative and one electronic copy and one paper copy of the Draft Project Report with attachments

## TASK 8. PROJECT TEAM MEETING

D&K will meet with the Town and identified stakeholders to discuss the findings of our investigation and draft summary report. We will receive questions and comments for incorporation into revised materials.

**Deliverables:** Team meeting notes

## TASK 9. FINAL REPORT

D&K will incorporate additional comments from the Town and project stakeholders into a final report, which will be provided in paper and PDF.

**Deliverables:** One electronic copy and one paper copy of the Final Project Report with attachments

The D&K staff assigned to this project has the experience, expertise, and availability to successfully complete project tasks by December 1, 2025. We also understand the importance of maintaining the project schedule based on the funding source. D&K is currently working on several other BRIC-funded projects and understands that extensions for currently funded projects will not be granted. Since this project was included in the 2022 funding round, a final completion date of November 21, 2026 has been provided by FEMA. We plan to complete all tasks on this project well in advance of that date.

Our team is available to begin the project upon execution of a contract. We propose to complete the services outlined in this proposal in accordance with the following schedule:

TASK	DATE
<b>Task 1:</b> Project Kickoff and Data Collection	July 1, 2025
<b>Task 2:</b> Field Investigation	August 1, 2025
<b>Task 3:</b> H&H Analysis	September 1, 2025
<b>Task 4:</b> Alternatives Analysis	September 15, 2025
<b>Task 5:</b> Conceptual Design	October 1, 2025
<b>Task 6:</b> Cost Estimates	October 1, 2025
<b>Task 7:</b> Permit Evaluation/Draft Report	November 1, 2025
<b>Task 8:</b> Project Team Meeting	November 15, 2025
<b>Task 9:</b> Final Report	November 28, 2025



The D&K team has the experience, expertise, availability, and familiarity with stormwater management projects to successfully complete the project and meet the schedule objectives. Our approach to providing engineering consulting services includes the following elements:

- Assign a manager to task orders who is knowledgeable of the services requested and the project area
- Maintain consistent management and staff throughout the life of an assignment
- Provide proactive communications to clearly ascertain and define project objectives
- Develop clear scopes of work that define responsibilities, deliverables, and schedules
- Provide ongoing communications that keep the Town and project partners informed of project status

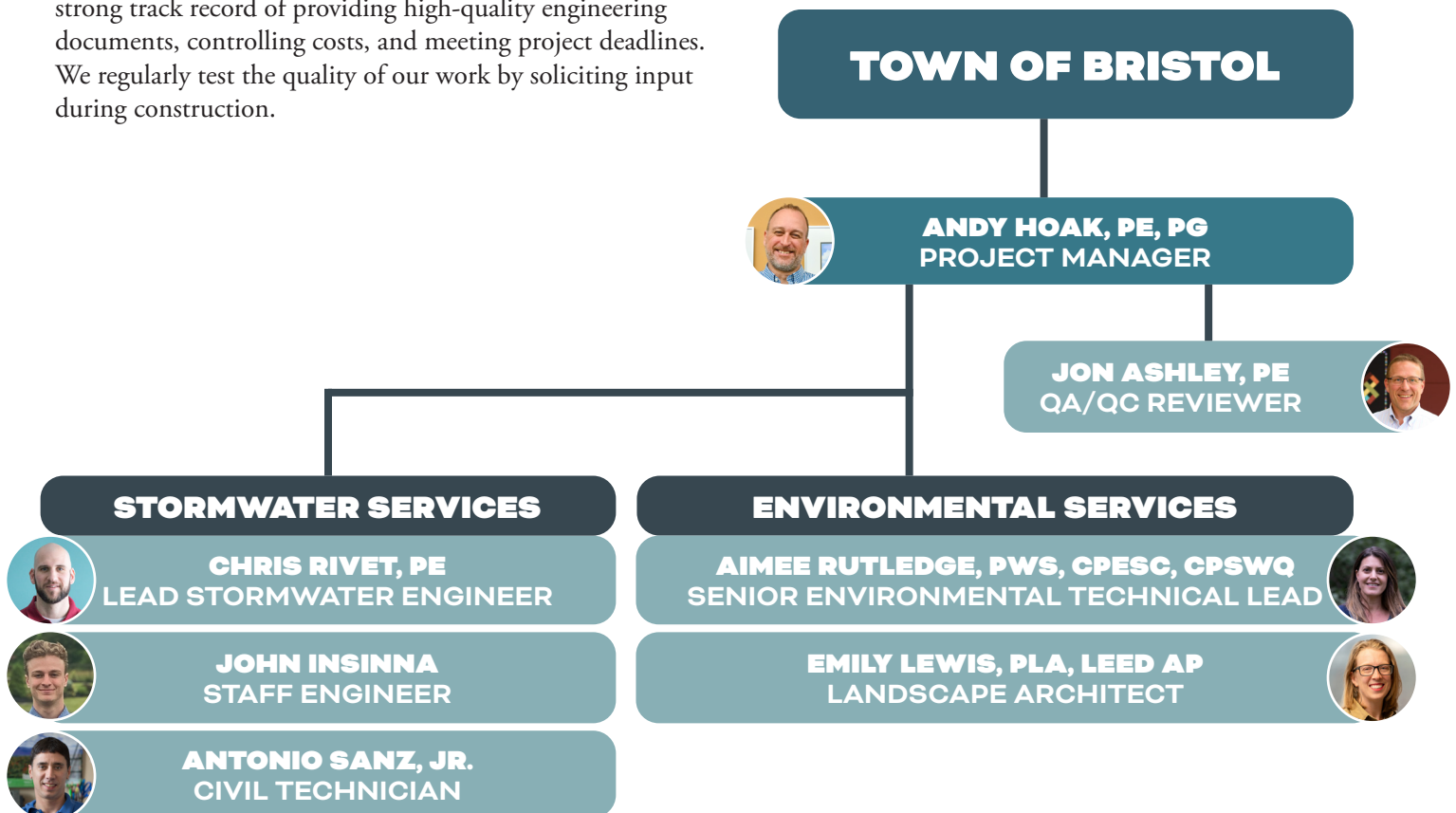
The following key elements illustrate the firm's flexibility, resourcefulness, and adaptability in accomplishing the Town's objectives:

**Commitment to Quality.** D&K understands that the quality of our work is a critical requirement and expectation. The Town of Bristol and project partners need to have confidence in our work in order for D&K to successfully advance the project to completion. D&K has achieved a strong track record of providing high-quality engineering documents, controlling costs, and meeting project deadlines. We regularly test the quality of our work by soliciting input during construction.

**Project Management.** Effective project management is the key to a successful project. The assigned D&K Project Manager is responsible to match project requirements with appropriate qualified and trained staff and adequate resources, conducting independent technical reviews and back checks, and provide documentation of quality reviews. D&K's Project Manager is responsible for the cost-effective and timely completion of assignments and deliverables. The Project Manager also reviews procedures that were followed and affirms that the documents, including plans and calculations, have undergone appropriate technical reviews.

**Communication.** D&K makes it a practice to periodically meet with clients and project managers (and others) to specifically discuss our the status and quality services. We take advantage of opportunities to meet and discuss performance evaluations with our clients and discuss the quality of our documents and overall service. Team members review what has worked well and identify areas where improvements can be made. We use these evaluations as a way to understand how our work is viewed by the Town.

## Organizational Chart



## Key Staff

D&K has extensive knowledge pertaining to engineering, environmental, regulatory, and legal issues pertinent to stormwater projects. A summary of key personnel follows:



**Andrew Hoak, PE, PG, Project Manager**, has 32 years of environmental, site development, land use planning, and hydrogeologic consulting in Vermont, New York, and New Hampshire. Andy has considerable experience in the design and permitting of stormwater management controls.

His expertise includes modeling of sediment and nutrient loading to receiving streams and calculating reductions due to engineered controls. Andy's stormwater experience includes current BMPs, erosion prevention and sediment control plans, and watershed stormwater offsets. His project experience includes successfully controlling stormwater from large impervious areas (as much as 42 acres at a Wal-Mart site), and he has successfully designed stormwater offsets to effectively mitigate pollutant loading to a "net-zero level" by providing additional off-site controls. He also serves as Project Manager for animal waste management projects including drainage, trails, heavy-use areas, and waste storage facilities for projects for State Departments of Environmental Conservation and Agriculture.



**Jonathan Ashley, PE, QA Reviewer**, has 32 years of environmental and civil engineering and hazardous materials mitigation experience. His expertise includes management and design of water/sewer main, pumping and treatment, hazardous waste and brownfield remediation, and site/civil development projects for a wide range of

clients. Jon provides engineering and management for roadway, stormwater, and slope projects. His specific stormwater experience includes permitting and design for new large site development projects, infiltration practices, culvert, and embankment protection. He recently provided quality assurance review and construction phase services on a groundwater mounding analysis for infiltrations associated with a new transit center built in the Vermont state capital. He also serves as a project manager with Andy Hoak on an ongoing Vermont Agency of Agriculture contract.



**Christopher Rivet, PE, Lead Stormwater Engineer**, has 14 years of relevant engineering experience. He has worked with a range of client partners to deliver design, construction, and compliance inspections for stormwater projects throughout northern New England. He has experience performing stormwater modeling using HydroCAD for a range of site development, renewable energy, and culvert projects. Chris served in a lead stormwater design role for the Chroma Tech, Barre Auditorium, Imtec Lane, and Fairlee Main Street to Morey projects.



**Aimee Rutledge, PWS, CPESC, CPSWQ, Senior Environmental Technical Lead**, has 26 years of experience completing environmental work, including stormwater permitting; stormwater pollution prevention plans; construction and stormwater monitoring; environmental impact statements; habitat restoration; biological assessments; spill prevention, control, and countermeasure plans; and Phase I Environmental Site Assessments. Aimee is experienced in communicating with government, academic, and industry researchers and scientists, including attending meetings with third parties/clients and representing clients at public meetings. Her knowledge and experience includes navigating the state and federal regulations and permits in New York and New England. Recently, she served as Project Manager for the Chroma Tech and Imtec Lane projects.



**Emily Lewis, PLA, LEED AP, Landscape Architect**, has 18 years of experience with multidisciplinary projects, including transportation, complete streets, parks, and trails, as well as land planning projects and stormwater management facilities. In addition to landscape planning and design services, Emily has served as the landscape construction administrator and inspector for large-scale, suburban, and rural highways, as well as provided environmental site assessments, forest delineation, and environmental restoration. She has significant experience in community outreach, including facilitating meetings and design charrettes, and presenting to community groups and local governments.





**Antonio Sanz, Jr., Civil**

**Technician**, has 24 years of experience supporting D&K's civil engineering assignments that focused on water resources and stormwater. These projects include site development, roads, bridges, dams, and on-site wastewater disposal

systems. As a Design Technician,

Antonio's responsibilities include the development of project plans using MicroStation and AutoCAD. Antonio is a valuable team member due to his long tenure at D&K and active participation in each phase of stormwater projects, including survey, initial field evaluations, drafting and design, permitting assistance, and construction observation.



**John Insinna, Staff Engineer,**

has experience in environmental engineering. John has assisted with drafting and design, cost estimating, construction observation, and daily logging and reports. His responsibilities include providing design, research, scheduling, budgeting, site

reviews, and calculations for civil and

environmental engineering projects. His specific experience has included assisting with topographic and utility surveys, stormwater construction general permits, and site design projects. His shared experience with the team includes providing design for the Imtec Lane project and the Main Street to Morey Stormwater project in Fairlee. John is proficient in AutoCAD Civil 3D.

Resumes for key staff are at the end of the proposal.

## Weston Flood Study

**CLIENT:** Town of Weston

**CONTACT:** Jim Linville

**PHONE/EMAIL:** 802.824.6721;  
selectboard@westonvt.org

## Green Schools

**CONTRACT HOLDER:** Greenprint Partners

**CONTACT:** Jim Sparber, Vice President Engineering

**PHONE/EMAIL:** 815.529.0776;  
jsparber@greenprintpartners.com

**CLIENT:** NCES/NCUH

**CONTACT:** Theresa Palagonia, Facilities Coordinator

**PHONE/EMAIL:** 802.334.5847 x2012  
Theresa.Palagonia@ncsuvt.org

**CLIENT:** Barre Unified Union School District

**CONTACT:** Jamie Evans, Facilities Director

**PHONE/EMAIL:** 802.476.8119  
jevanbsu@buusd.org

## Barre Auditorium Stormwater

**CLIENT:** City of Barre

**CONTACT:** Brian Baker, Director of Public Works/Engineering

**PHONE/EMAIL:** 802.476.0250;  
PWdirector@barrecity.org

## BUDGET ALLOCATION

Cost Proposal								
Task	A. Hoak J. Ashley	A. Rutledge C. Rivet	E. Lewis D. Mallach	A. Sanz J. Insinna	Survey Manager	Survey Crew	Hours per Task	Amount per Task
Task 1. Project Kickoff	6	6	4				16	\$2,860
Task 2. Field Investigation		24			4	22	50	\$9,030
Task 3. Hydrologic & Hydraulic Analysis	2	6		32			40	\$5,280
Task 4. Alternatives Analysis	5	36		24			65	\$9,945
Task 5. Conceptual Design	2	24	8	48			82	\$11,210
Task 6. Cost Estimates	1	4		8			13	\$1,845
Task 7. Permitting Evaluation & Draft Report	2	32		8			42	\$6,690
Task 8. Project Meeting	2	2					4	\$780
Task 9. Final Report	1	8		4			13	\$2,050
Hours per Labor Category	21	142	12	124	4	22	325	-
Hourly Rate per Labor Category	\$225	\$165	\$130	\$120	\$170	\$190	-	-
Amount per Labor Category	\$4,725	\$23,430	\$1,560	\$14,880	\$680	\$4,180	-	\$49,455
Expenses								\$235
Project Total								\$49,690





## Andy Hoak, PE, PG

### Project Manager

## EDUCATION

M.S., Hydrogeology, Clemson University, 1994  
B.A., Geology, Environmental Studies, Alfred University, 1993

## REGISTRATION

Professional Engineer: VT 8929; NY 101102  
Professional Geologist: NH 388, NY 1131  
Certified Wastewater Site Technician Type B: VT 487  
Grade 2 Domestic Wastewater Operator: VT 1421  
OSHA 40-Hour HAZWOPER Certificate  
OSHA 8-Hour Supervisor Certificate  
TSP-20-23000 NY, VT

Mr. Hoak has 32 years of experience in the design of water quality projects, with specialties in hydrogeology and environmental engineering. Andy serves as Director of D&K's Environmental Services Division, and oversees a wide range of water quality projects, including environmental investigations and remediation, water supply development and protection, decentralized wastewater disposal, site development, and land use planning. He has a proven track record of developing innovative stormwater management controls and advanced sediment and nutrient treatment methods, as well as extensive experience in stormwater permitting.

**Stormwater Improvements, Main Street to Morey, Fairlee, VT.** Project Director to improve the overall function and aesthetic of the corridor, reduce stormwater impacts on businesses along VT 5, and successfully implement the proposed green stormwater treatment practices to better manage runoff. There are three project locations: in front of the Lakeside Automotive, Samurai Soul Food, and Country Supply businesses. Responsible to provide QA review of 60% plans.

**Green Schools, Stormwater Evaluation and Design, VT DEC, Statewide, VT.** Quality Assurance Reviewer for engineering and environmental services for feasibility studies and design of stormwater improvements for the following schools under the Vermont Green Schools Initiative Phase I: North Country Union High (Newport), Northern Vermont University (Johnson), Newport City Elementary School (Newport), Poultney Elementary School (Poultney), and Spaulding High School (Barre). The Green Schools Initiative aims to reduce stormwater runoff and pollution entering Lake Champlain and Lake Memphremagog from school grounds and to meet the state Three-Acre General Permit stormwater regulation. Responsible to provide quality assurance.

**Three-acre Permit-Compliant Designs, Manufactured Housing Communities, VT DEC, Statewide, VT.** QA/QC Reviewer for design and permitting assistance for stormwater evaluation, design, and permitting at non-profit, cooperative, or privately-owned MHCs located within the sensitive Lake Champlain and Lake Memphremagog watersheds. Responsibilities include providing financial-related and technical assistance in developing a project and providing permit compliance to improve stormwater runoff and water quality.

**Norwich Reservoir Dam Removal, Connecticut River Conservancy, Norwich, VT.** Project Manager for the removal of a concrete, run-of-the-river, 16-ft-high, cyclopean gravity dam on the Charles Brown Brook. The dam was formerly a water supply dam and the impoundment silted into the dam's crest, forming a large wetlands complex in the former reservoir. The dam, which was classified as a Low-Hazard dam by the State of Vermont, was a complete obstruction to aquatic organism passage (AOP) with the potential to further damage water quality. Additional firm services provided on this project include topographic survey, wetland delineation, preparation of a sediment management plan and geomorphic assessment. The dam was removed in the fall of 2018. Since that time annual erosion monitoring has been completed to document the condition of the stream and determine whether remedial actions are necessary. Responsible to oversee design aspects of the project, including leading field investigations, conceptual designs for dam removal, cost estimation, and the schedule of deliverables.

**Slope Stabilization and Stormwater Quality Improvements, Chroma Tech, Bellows Falls, VT.** Project Director/Quality Control Reviewer responsible for overseeing the evaluation, design, and permitting services to stabilize a failed site embankment abutting a stream and improve onsite stormwater collection and treatment practices. The size of the slope experiencing failure is approximately 0.3 acres and the approximate size of the site is 12 acres. Responsible for overseeing the team and quality control review of the final design. Environmental permitting tasks for this project included Erosion Prevention and Sediment Control (EPSC) plans and permit applications for USACE Section 404 General Permit and the VTNRB Act 250 Permit Amendment.



## Jon Ashley, PE

### QA/QC Reviewer

## EDUCATION

B.S., Environmental Engineering, Rensselaer Polytechnic Institute, 1992

## REGISTRATION

Professional Engineer: VT 7350, NH 9709, NY 79818  
40-hour OSHA HAZWOPER Course  
8-hour OSHA HAZWOPER Course  
Firefighter I Certification

Mr. Ashley has 32 years of environmental and civil engineering experience. The Director of D&K's Public Works Division, Jon's experience includes planning, management, and design of water and sewer projects, hazardous waste and brownfield remediation, road and slope projects, stormwater collection and treatment, and site/civil development projects for municipal, state, local, and private clients. Jon has supported environmental documentation and permitting for infrastructure and site projects and maintains strong working relationships with regulatory officials.

**One Taylor Street Transit Center, Montpelier, VT.** Senior Environmental Engineer responsible for QA/QC review of the potential effects of proposed stormwater collection and infiltration practices to metals and PAH contamination on a brownfield site redeveloped as a \$7.5M Multimodal Transit & Welcome Center. The four-story building includes approximately 5,000 SF per floor and supports public bus operations, offices, traveler services, bike lockers, possibly a restaurant or café, and upper floor residential units. The facility will include three bus parking bays, a 23-car parking area, and bicycle access. Provided engineering support during targeted excavation, treatment, and disposal of contaminated soils during the reconstruction of a retaining wall along the Winooski River and during site preparation for a bike path that will transect the site. Conducted three underground storage tank (UST) removal assessments during site preparation for the bike path.

**ARPA Healthy Homes, VT DEC, Various, VT.** Contract Manager to lead the development of Preliminary Engineering Reports (PERs) for 11 mobile home communities throughout the state to identify needs for improvements to wastewater, potable water, and stormwater infrastructure and systems. In 2023, led the D&K team to review existing conditions for these three systems, prepare GIS mapping, review state wastewater permits, and review online water supply information, preliminary review of environmental resources utilizing the VT ANR Atlas, development of 30%, 60%, and 90% PERs for all sites with varying degrees of needs at each site, and prepare EIDs. Responsible to provide quality assurance review, firm resource scheduling and budgeting oversight, and client coordination. Provided the same services for 11 additional MHCs in 2024 and eight MHCs in 2025.

**Gravel Pit, Waitsfield, VT.** Developed site plans and a stormwater pollution prevention plan (SWPPP) for the Town of Waitsfield's municipal gravel pit. Developed plans for excavation, erosion prevention and sediment control, stockpiling areas, crushing areas, and access road. Prepared Town Zoning permit application and presented at public hearings. Assisted the Town with implementing the SWPPP, including the required sampling program.

**Bethel Mountain Road Slope Stabilization, Rochester, VT.** Project Director for the evaluation, survey, permitting, and final design for a 2,800-LF emergency roadway repair project. The project implements long-term repairs to sections of embankment that failed during a heavy spring rainfall and snowmelt event that closed the road, including upgraded drainage systems and structures, slope repair, and roadway reconstruction and minor realignment. Serving as a valuable mountain connector road between VT 100 and VT 12, rapid reopening and stabilization of the roadway was a critical need, which dictated a significantly compressed schedule. The project was managed by the Town of Rochester and received FHWA-ER funding. Responsible for providing quality assurance review, firm resource scheduling and budgeting oversight, geotechnical subconsultant coordination, and client coordination. *ACEC-VT Grand Award Winner*

**Bull Run Road Slope Stabilization, Roxbury, VT.** Project Manager for design engineering, permitting assistance, and construction administration to repair and stabilize a 75-ft by 50-ft slope failure. Key project goals included: stabilization of the eroding streambank at the toe of the landslide; reconstruction and stabilization of the failed slope; stabilization of the roadway including a new underdrain; completion and submission of Agency of Natural Resources and Army Corps of Engineers permit applications; and development of contract documents associated with FEMA funding.





## Chris Rivet, PE

### Lead Stormwater Engineer

## EDUCATION

B.S., Civil Engineering, Norwich University, 2010

## REGISTRATION

Professional Engineer: VT 109341

Mr. Rivet has 14 years of stormwater engineering experience. His project expertise includes the design, construction, and compliance inspection for site development projects throughout Vermont. Chris has served as the project manager and lead engineer for sand and salt shed projects going through the VTrans MAS process. He has prepared designs, observed construction, and performed compliance requirements for projects that cover the current stormwater permitting programs. His design work includes a range of site development, renewable energy, and culvert projects.

### **Three-acre Permit-Compliant Designs, Manufactured Housing Communities, Statewide, VT.**

Project Manager for design and permitting assistance for nine nonprofit, cooperative, or privately owned MHCs located within the sensitive Lake Champlain and Lake Memphremagog watersheds. VT DEC, in accordance with the Governor's Recovery Plan, has budgeted for stormwater mitigation efforts at MHCs in order to comply with the Stormwater General Permit 3-9050, also known as the "Three-Acre General Permit." Responsibilities include providing financial and technical assistance in developing a project and providing permit compliance to improve stormwater runoff and water quality.

**Green Schools, Stormwater Evaluation and Design, Statewide, VT.** Stormwater Engineer for feasibility studies and design of stormwater improvements for the following schools under the Vermont Green Schools Initiative Phase I: North Country Union High (Newport), Northern Vermont University (Johnson), Newport City Elementary School (Newport), Poultney Elementary School (Poultney), and Spaulding High School (Barre). The Green Schools Initiative aims to reduce stormwater runoff and pollution entering Lake Champlain and Lake Memphremagog from school grounds and to meet the state Three-Acre General Permit stormwater regulation. Responsible for evaluation, design, and permitting assistance.

**Stormwater Improvements, Main Street to Morey, Fairlee, VT.** Project Manager to successfully implement green stormwater treatment practices and enhance aesthetics along US 5. There are three project locations—in front of the Lakeside Automotive, Samurai Soul Food, and Country Supply businesses. Services provided include attending stakeholder meetings, providing a topographic survey, base mapping and resources, preliminary plans, permitting, right-of-way plans and acquisition process, contract plans, opinion of probable construction costs, assistance with the bidding and award process, and construction services. The town utilized Municipal Mitigation Grant funding through the VTrans MAS to complete the design and implementation of green stormwater infrastructure.

**Norwich Reservoir Dam Removal, Connecticut River Conservancy, Norwich, VT.** Project Engineer responsible to review and draft plans for removal of a municipally owned water supply dam that was no longer in use. The 16-ft-high concrete gravity dam was formerly a water supply dam and the impoundment silted into the dam's crest, forming a large wetlands complex in the former reservoir. The dam, which was classified as a Low-Hazard dam by the State of Vermont, was a complete obstruction to aquatic organism passage (AOP) with the potential to further damage water quality.

**Stormwater Improvements, Barre Auditorium, Central Vermont Regional Planning Commission, Barre, VT.** Project Engineer for stormwater improvements to a municipally owned arena and auditorium site, which includes 10 acres of impervious surfaces. Provided client coordination, evaluation, and design for alternatives; reviewed and coordinated development of the Engineering Feasibility Analysis; and attended site visits.



## **Aimee Rutledge, PWS, CPESC, CPSWQ**

### **Senior Environmental Technical Lead**

## **EDUCATION**

B.S., Environmental Management, University of Rhode Island, 1999

## **REGISTRATION**

Society of Wetland Scientists, Professional Wetland Scientist: 2238

Certified Professional in Erosion and Sediment Control: 4647

Certified Professional in Stormwater Quality: 732  
VT Natural Shoreland Erosion Control Practices Certification

Ms. Rutledge has 26 years of experience completing environmental work, including stormwater permitting; stormwater pollution prevention plans; construction and stormwater monitoring; environmental impact statements; habitat restoration; biological assessments; spill prevention, control, and countermeasure plans; and Phase I Environmental Site Assessments. Aimee is experienced in communicating with government, academic, and industry researchers and scientists, including attending meetings with third parties/clients and representing clients at public meetings/hearings. She has extensive knowledge and experience navigating the state and federal regulations and permits in Vermont, as well as New York and Rhode Island, and has established working relationships with the agencies and staff.

**Stormwater Improvements, Main Street to Morey, Fairlee, VT.** Wetland Scientist to improve the overall function and aesthetic of the corridor, reduce stormwater impacts on businesses along VT 5, and successfully implement the proposed green stormwater treatment practices to manage runoff. The project implements stormwater infiltration and treatment practices in front of Lakeside Automotive, Samurai Soul Food, and Country Supply. Responsibilities included coordinating the firm's wetland delineation and reviewing related deliverables. The Town utilized Municipal Mitigation Grant funding through the VTrans MAS to complete the design and implementation of green stormwater infrastructure.

**Green Schools, Stormwater Evaluation and Design, Statewide, VT.** Project Manager for engineering and environmental services for feasibility studies and design of stormwater improvements for the following schools under the Vermont Green Schools Initiative Phase I: North Country Union High (Newport), Northern Vermont University (Johnson), Newport City Elementary School (Newport), Poultney Elementary School (Poultney), and Spaulding High School (Barre). The Green Schools Initiative aims to reduce stormwater runoff and pollution entering Lake Champlain and Lake Memphremagog from school grounds and to meet the State Three-Acre General Permit stormwater regulation. Responsible for natural resource review coordination, permitting review, client and applicant coordination, and design and reporting review.

**Imtec Lane Gully Stabilization & Restoration, Windham Regional Commission (WRC), Rockingham, VT.** Project Manager for improvements to an industrial site, including reducing erosion and sediment contribution to downstream reaches, stabilizing deep-seated slope movement and stream banks, and protecting utilities and private property within the project reach. Responsible to compile relevant data; conduct site visits and stakeholder meetings, including VTDEC, VTrans, and USACE; develop and integrate up to three conceptual design alternatives; support design development through contract documents; provide a final report with an OPCC; and provide permitting assistance.

**Slope Stabilization and Stormwater Quality Improvements, Chroma Technology, Bellows Falls, VT.** Project Manager responsible for evaluation, design, and permitting services to stabilize a failed embankment abutting a stream and improve on-site stormwater collection and treatment practices. The size of the failing slope is approximately 0.3 acres and the approximate size of the site is 12 acres. Responsible to lead a collaborative approach and coordinate with regulatory agencies, grant funding agency, and the client to address overall watershed and localized site issues. Managed environmental permitting tasks, including the review and development of Erosion Prevention and Sediment Control (EPSC) plans and permit applications for USACE Section 404 General Permit and the VTNRB Act 250 Permit Amendment.

**Stormwater Asset Management Plan, Pembroke, NH.** Senior Environmental Technical Lead responsible to coordinate scheduling and budgeting, work with the Town to develop a vision statement and stakeholder list, assist with a level-of-service workshop utilizing ArcGIS for asset inventory and criticality ratings, and develop the implementation plan.





## Emily Lewis, PLA, LEED AP

### Landscape Architect

## EDUCATION

M.S., Environmental Sciences and Policy, Johns Hopkins University, 2016  
Bachelor of Landscape Architecture, Pennsylvania State University, 2007

## REGISTRATION

Professional Landscape Architect: VT 133745, NH 227, MD 3695, ME LAR5923  
Vermont Natural Shoreland Erosion Control Certification, VT ANR (exp. January 2027)  
LEED AP-US Green Building Council

Emily has 18 years of experience in the design and planning of parks and recreation projects, including regional and neighborhood parks, playgrounds, community gardens, and trails. Her experience ranges from developing master plans to construction documents. She is well-versed in environmental restoration, stormwater management facilities, and land development projects. In addition to landscape planning and design services, Emily has conducted environmental site assessments and forest delineations. She has significant experience in community outreach, including facilitating meetings and design charrettes and presenting to community groups and local governments. Emily recognizes the value of client and community input and has worked with municipal recreation departments, community groups and associations, schools, and nonprofits in the Mid-Atlantic and New England to develop community engagement strategies.

**Rain Garden and Bulb-out, Merchant's Row, Randolph, VT.** Landscape Architect to design improvements for the one-block, one-way street. The design included two bulb-outs to clarify traffic flow and pedestrian crossings—one for outdoor dining space for adjacent restaurants and one for stormwater management. The project disconnects a significant amount of impervious surface from the municipal closed drainage system and provides additional space for pedestrians to safely navigate the crossings at this four-way intersection. Planted entirely with native plants, the bioretention facility has completed its fourth growing season with very little plant mortality. Volunteer maintenance removes weeds and prunes plant materials in the early spring, rather than late fall, to provide habitat for overwintering insects. Responsible for planting plan, detail development, and planting review.

**Main Street to Morey Stormwater Improvements, Fairlee, VT.** Landscape Architect to successfully implement green stormwater treatment practices and enhance aesthetics along US 5. The project implements stormwater infiltration and treatment practices in front of Lakeside Automotive, Samurai Soul Food, and Country Supply. Responsibilities included attendance of stakeholder meetings, overseeing the development of plans, permitting assistance, coordination of right-of-way acquisition, contract plans, development of the OPC, assistance with the bidding and award process, and construction phase services.

**Three-acre Permit-Compliant Designs, Manufactured Housing Communities, Statewide, VT.** Landscape Architect for the design and permitting of stormwater management for ten manufactured housing communities throughout Vermont. The Stormwater General Permit 3-9050 requires property owners with three or more acres of impervious surface to meet new standards under the General Permit unless the entire project currently has a stormwater system permitted under the 2002 Vermont Stormwater Management Manual or later standards. The permit is a piece of Vermont's overall framework for restoring water quality in local lakes, rivers, ponds, and streams. These MHCs either do not have a stormwater system, have a stormwater system that is based on earlier standards, or the stormwater system does not cover all impervious surfaces. Responsible for conducting site visits, kickoff meetings with owners and stakeholders, and creating conceptual stormwater plans.

**Imtec Lane Gully Stabilization & Restoration, Windham Regional Commission (WRC), Rockingham, VT.** Landscape Architect assisting with a slope stability project adjacent to Imtec Lane and the Sonnax Facility. The site is situated in a wooded commercial/industrial park and susceptible to significant erosion and incision due to physical and geologic conditions at the site, including steep slopes and sandy soil conditions. Responsibilities to include developing slope planting plans.

**Slope Stabilization and Stormwater Quality Improvements, Chroma Tech, Bellows Falls, VT.** Landscape Architect to assist with the evaluation, design, and permitting services to stabilize a failed site embankment abutting a stream and improve onsite stormwater collection and treatment practices. The size of the slope experiencing failure is approximately 0.3 acres and the approximate size of the site is 12 acres. Responsible for developing slope planting plans.



## Antonio Sanz, Jr.

### Civil Design Technician

## EDUCATION

A.S., Civil/Environmental Technology, Vermont Technical College, 2000

## CERTIFICATION

Nuclear Moisture/Density Equipment: 12595  
Confined Space Certification

Mr. Sanz has 24 years of experience as a Design Technician responsible for supporting transportation and civil engineering assignments. These projects include roads, bridges, highway design, dams, facilities, and on-site wastewater disposal systems. As a Design Technician, Antonio's responsibilities include development of project plans using MicroStation and AutoCAD.

### **Green Schools, Stormwater Evaluation and Design, Statewide, VT.**

Civil Design Technician for engineering and environmental services for feasibility studies and design of stormwater improvements for the following schools under the Vermont Green Schools Initiative Phase I: North Country Union High (Newport), Northern Vermont University (Johnson), Newport City Elementary School (Newport), Poultney Elementary School (Poultney), and Spaulding High School (Barre). The Green Schools Initiative aims to reduce stormwater runoff and pollution entering Lake Champlain and Lake Memphremagog from school grounds and to meet the State Three-Acre General Permit stormwater regulation. Responsible for site testing and compiling data.

### **Slope Stabilization and Stormwater Quality Improvements, Chroma Technology, Bellows Falls, VT.**

Construction Inspector responsible to observe construction of repairs to a failed site embankment abutting a stream and improving onsite stormwater collection and treatment practices. The size of the slope experiencing failure is approximately 0.3 acres and the approximate size of the site is 12 acres. Performed submittal reviews, attended project construction meetings, composed field reports for inspections, and created site progress photo documentation.

### **Stormwater Improvements, Barre Auditorium, Central Vermont Regional Planning Commission, Barre, VT.**

Civil Technician for stormwater improvements to a municipally owned arena and auditorium site, which includes 10 acres of impervious surfaces. Responsible to observe boring collection and to provide design and drafting.

**Stormwater Improvements, Main Street to Morey, Fairlee, VT.** Civil Technician to improve the overall function and aesthetic of the corridor, reduce stormwater impacts on businesses along VT 5, and successfully implement the proposed green stormwater treatment practices to manage runoff. Responsible to perform infiltration testing.

### **Three-acre Permit-Compliant Designs, Manufactured Housing Communities, Statewide, VT.**

Civil Technician for design and permitting assistance for nonprofit, cooperative, or privately-owned MHCs located within the sensitive Lake Champlain and Lake Memphremagog watersheds. VT DEC, and in accordance with the Governor's Recovery Plan, has budgeted for stormwater mitigation efforts at MHCs in order to comply with the Stormwater General Permit 3-9050, known as the "Three-Acre General Permit." Responsibilities include providing assistance with design and drafting related to improving stormwater runoff and water quality.

**Stormwater System Assessment, Northfield, VT.** Field Technician for inventory and assessment of an aging municipal stormwater drainage system in need of improvements. Conducted field inspection, survey, and GPS location of approximately two linear miles of the existing system. Documented existing conditions with photographs and detailed field notes.





## John Insinna

### Staff Engineer

## EDUCATION

B.S., Environmental Engineering, Gannon University, 2023

Mr. Insinna has experience in environmental engineering. John has assisted with cost estimates, construction site inspections, daily logging and reports, and survey stake points in site preparation for construction. His responsibilities include providing design work, research, scheduling, budgeting, site reviews, and calculations for civil and environmental engineering projects. His specific experience has included assisting with a topographic and utility survey, a stormwater construction general permit, and a site survey and civil design project. John has performed engineering services for state, municipal, private, and public clients in Vermont and New York. John is proficient in AutoCAD Civil 3D.

### **Imtec Lane Gully Stabilization and Restoration, Windham Regional Commission (WRC), Rockingham, VT.**

Staff Engineer for improvements to an industrial site, including reducing erosion and sediment contribution to downstream reaches, stabilizing deep-seated slope movement and stream banks, and protecting utilities and private property within the project reach. Responsible to provide drafting and design of improvements.

**Stormwater Final Design and Implementation, Fairlee, VT.** Staff Engineer to assist to complete the design and implementation of green stormwater infrastructure to improve the overall function and aesthetic of the corridor, reduce stormwater impacts on businesses along VT 5, and successfully implement the proposed green stormwater treatment practices to better manage runoff. The Town utilized Municipal Mitigation Grant funding through the VTTrans Municipal Assistance Bureau (MAB). Responsible for drawings updates with some design changes and markups and edits for 60% Design Plans.

**Slope Stabilization and Stormwater Quality Improvements, Chroma Tech, Bellows Falls, VT.** Staff Engineer for the evaluation, design, and permitting services to stabilize a failed site embankment abutting a stream and improve onsite stormwater collection and treatment practices. The size of the slope experiencing failure is approximately 0.3 acres and the approximate size of the site is 12 acres. Responsible for report documents.

**Emslie Street Site and Design, Buffalo, NY.** Staff Engineer for a project to convert a former convent into apartments and implement site improvements, including grading utilities and stormwater management. Services included permitting review and assistance. Responsible to assist with surveying; draft an existing condition plans, proposed condition plans, utility plan, and drainage plan; and assist with required permit applications.

**Hillcrest Farm Waste Storage Facility, Randolph Center, VT.** Staff Engineer for the investigation, design, preparation of plans and specifications, and construction review for a Waste Storage Facility (WSF). Manure is transferred by gravity beneath Gilman Road to the existing 100-FT by 100-FT earthen WSF. NRCS assisted with preparing an existing conditions topographic survey plan for a replacement WSF. The proposed WSF will include a round concrete earthen structure with an underdrain system and it will not be expanded in size, as no increase in the number of livestock is anticipated at the farm. The culvert beneath Gilman Road is planned for replacement. Responsible for preliminary design, plan edits, and site investigations.

**Slope Stabilization, Ottauquechee Natural Resources Conservation District, Plymouth, VT.** Staff Engineer for the evaluation, alternatives analysis, conceptual engineering design, permitting review, and cost estimating for the slope failure on South End Road. A section of the shoreline of Woodward Reservoir below South End Road is slumping into the lake due to undercutting from wave erosion and ice action. Slope destabilization has led to a portion of the road sloughing and eroding into the lake which has limited access for several property owners in the area and has contributed to the sediment and nutrient load of the lake. D&K has developed potential alternatives to address slope stability, shoreline erosion, and road improvements that include water quality remediation, stabilization options, natural resource impacts, existing vegetation, nutrient loading, and other critical factors. D&K is preparing preliminary plans and Opinion of Probable Construction Costs (OPCC) for the chosen alternative. Responsible for existing conditions, preliminary plans, and OPCC.