



May 6, 2020 | Statement of Qualifications  
**Town of Barrington**

# Asset Management and Additional Engineering Services



May 6, 2020

Conner MacIver, Town Administrator  
Town of Barrington, NH  
333 Calef Highway  
Barrington, NH 03825



Re: "RFQ: Asset Management and Additional Engineering Services"

Dear Mr. MacIver and Selection Committee Members:

The Town of Barrington has wisely acquired funding from the State of New Hampshire to improve the Town's Asset Management program. It has been our experience that a robust Strategic Asset Management Plan (SAMP) could save a community up to 30% in the total costs it takes to run and operate its infrastructure. To meet the challenges of this role, VHB brings a small team of asset management professionals to this project that will develop decision-making tools to best align with the Town's desired levels of service. Our proven methodology is based on "what works" in the real world and what will enable data-driven decision making moving forward.

In our experience, we have seen many theoretical asset management programs that fail to fully align with operational goals. VHB takes a pragmatic approach to asset management, leveraging principles from ISO55000, the Environmental Protection Agency (EPA) framework, and aligning them with real-world practices. VHB will bring the Town of Barrington the following benefits:

- » **A pragmatic approach to asset management that will provide immediate value to your staff and your community.** Project manager **Juston Manville, MIAM**, has worked for local governments and has direct experience in not only developing a SAMP, but creating the organizational change to make it operational. He understands an effective SAMP needs to link strategy at the management level with day-to-day field operations. His unique ability to integrate operations, engineering, and information technology will result in a SAMP that is implementable and has buy-in from Town staff.
- » **Barrington' needs and values will govern the direction and outcomes of the project.** At VHB, we have a "listen first" approach to asset management implementation. We believe that a successful SAMP begins and ends with collaborative partnerships and client ownership. "One size fit's all" does not apply to asset management; we will bring our extensive experience with other agencies to the table to inform, not direct, Barrington's SAMP with a customized, targeted approach.
- » **SAMP that is backed local knowledge and depth of regional resources.** VHB plans to develop Barrington's SAMP based on a small team of regional professionals backed with local New Hampshire knowledge. **Bill Arcieri, CPESC, CPSWQ** is an experienced stormwater scientist that will help link asset management with programmatic business goals. Professional engineers, **Mark Verostick, PE**, and **Bob Winn, PE**, will bring their background in water and wastewater engineering; while **Dale Abbott, GISP** rounds out the core team with industry leading background in applied technology. This team will work with you to develop the optimum SAMP that will best fit your needs and goals now and into the future.

Thank you for your time spent reviewing our qualifications. We look forward to discussing the next steps forward with you. Please contact Juston Manville at 503.867.7652 if you would like to further discuss our proposal or request more information.

Sincerely,  
VHB

Handwritten signature of Dale Abbott in black ink.

Dale Abbott, GISP  
Principal-in-Charge

Handwritten signature of Juston Manville in black ink.

Juston Manville, MAIM  
Project Manager



Town of Barrington  
RFQ: Asset Management and Additional Engineering Services

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# Project Understanding and Approach

## Project Understanding

We understand that the Town seeks to develop a "decision making tool" that addresses several core elements:

- Vision Statement
- Asset Inventory
- Level of Service (LOS) Workshop
- Prioritization of Assets
- Life Cycle Cost Analysis (LCCA)
- Funding Strategy
- Implementation Plan
- Communication Plan

The Town of Barrington (Town) provides high quality and essential drinking water, wastewater, stormwater, and transportation services to approximately 9,000 citizens. The mission of Public Works Departments is to actively support public health and safety, quality neighborhoods, and a healthy and sustainable environment by effectively managing utility services. To meet this challenge, the Town Public Works Department desires to develop a Strategic asset management Plan (SAMP) and a Data-Driven "Decision Making Tool" that aligns with desired Levels of Service (LOS). This project will focus on the following five areas for improvement:

1. Developing an integrated approach coordinated across utilities into a single SAMP
2. Checking current information systems for areas of improvement
3. Establishing LOS for risk mapping and asset prioritization
4. Aligning LOS and risk with a funding strategy
5. Creating a data-driven decision through the development of a tool

To continue delivering effective and efficient municipal operations and support the governance process in all departments, the Town must manage its assets efficiently. The Town is searching for the right consultant to deliver a SAMP that aligns asset strategy with both infrastructure maintenance and replacement, as well as appropriate finances and desired LOS. The ideal consultant should provide highly technical, data-driven results that accurately reflect local conditions, preferences, and commitments. The consultant will ideally become an integrated partner with the Town and take ownership from initial development of the SAMP through final delivery of the plan.

Our team understands that one of the Town's main goals for this project is to develop a framework for a data driven decision making tool. Our understanding of how key elements of asset management, including integrating data from disparate systems, can be integrated within an asset management strategy for each line of business at the Town will be critical. VHB brings local knowledge in asset management, as well as proven experience developing and implementing asset management plans for municipalities like Barrington. **VHB goes beyond the paper by providing a deep bench of professionals that understands asset management as a process, and seeks to develop a concrete roadmap that can successfully guide implementation.**

Our team members have:

- » A complete understanding of the possibilities to grow your asset management program
- » Successfully implemented asset management programs for clients of similar size
- » Knowledge of asset management as a process, driven through an implementable roadmap
- » First-hand experience with asset management strategy implementation in a municipal environment

## Proven Project Approach

VHB takes a pragmatic approach to asset management. We have seen that theoretical asset management programs rarely align with operational goals. VHB will leverage principles from ISO55000 and the Environmental Protection Agency's (EPA's) framework for asset management and align them to real-world practices. We strive to see that there is synergy between finance, operations, engineering, and information technology. This approach has been built upon our team's knowledge of municipalities' the size of Barrington. Our approach has been refined through decades of experience and lessons learned to help ensure that it meets the Town's unique challenges and results in a practical and actionable roadmap. Our collaborative approach focuses on teaming our industry professionals with your staff to:

- » **Understand your unique operating context** by listening to your goals, challenges, and ideas while documenting your policies, procedures, workflow, and information.
- » **Identify specific, practical, and cost-effective opportunities** for improvement (Opportunities) by integrating public works staff ideas and our knowledge of engineering, maintenance, operations, finance, and information system industry best practices and lesson learned.
- » **Gain staff buy-in and ownership** through Opportunity refinement and prioritization in workshops with cross-divisional teams that represent all levels of the organization.
- » **Develop a realistic roadmap** by grouping related and dependent Opportunities into initiatives with a known level of effort, owner, and schedule that align with available resources and priorities.

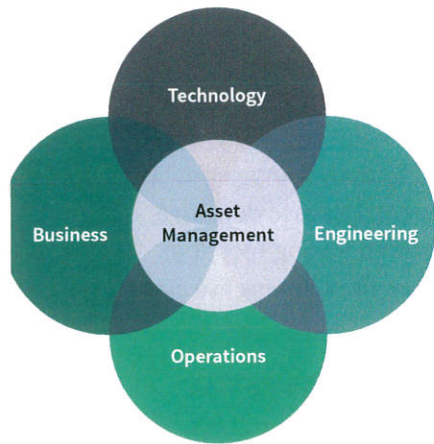
To promote more efficient and effective usage of staff time, we anticipate identifying teams to represent each of Barrington's core service lines (storm and surface water, drinking water, wastewater, and transportation) during the assessment and Opportunity development.

The VHB team will address specific challenges in the following manner:



### 1. *What is the current inventory and condition of the utility assets?*

VHB sees Geographic Information System (GIS) as essential to creating an asset inventory database. We believe that establishing an authoritative source of data and a process to update the data is critical in improving an asset inventory. We will establish processes to build on the current asset inventory by outlining how to aggregate GIS with existing systems that inform asset knowledge. VHB understands that a 360-degree process, where each Town department participates, is needed in order to build a reliable asset inventory. VHB has established this process in the community of Dover, NH, where we assisted the Town with



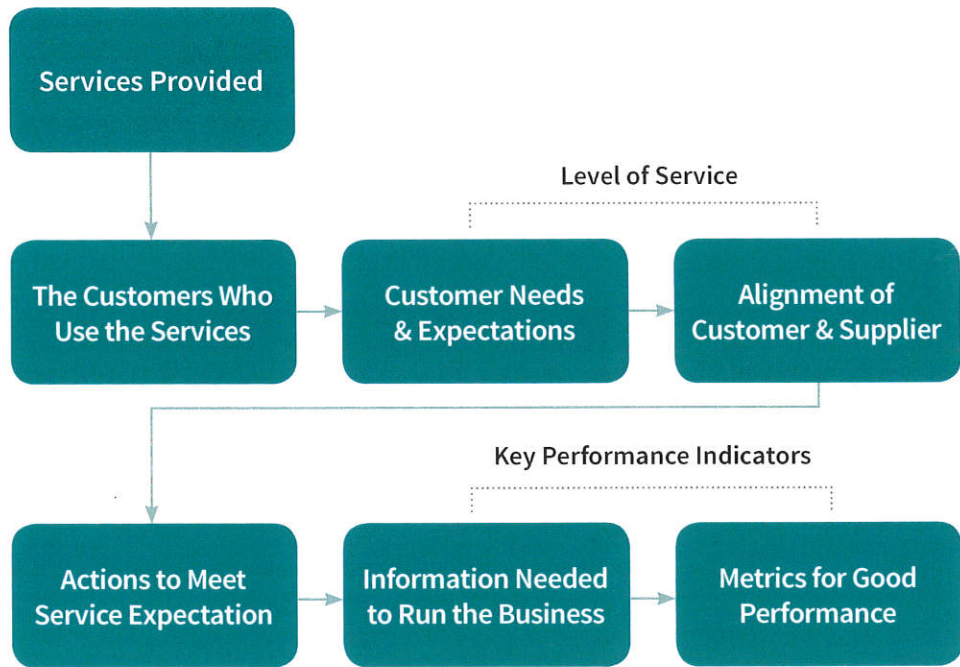


developing a solution that allowed operators to make data updates in the field using redlines and real-time GIS data updates. This process is integral to the success of building a reliable asset inventory, and we will look to take a similar approach with the Town of Barrington.



**2. What is the required for sustainable LOS and associated system performance metrics?**

VHB will take a listen first approach to establishing LOS for the Town. We will evaluate work that has been done in the past and build upon existing data to provide an updated LOS analysis. Key Performance Indicators will be established in order to gauge progress against goals.

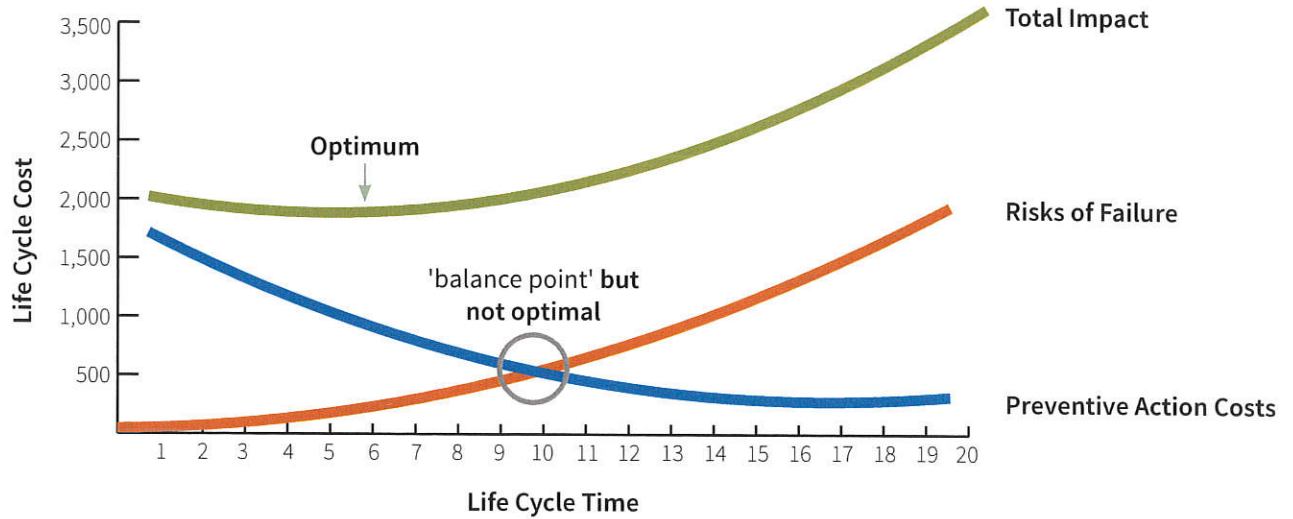


**3. Which assets are critical to sustained performance?**

VHB brings a team of experienced analysts and engineers to evaluate and identify industry best practices for establishing the criticality of assets in Town. We will establish Key Performance Indicators (KPI) that will help in identifying gaps and areas of improvement. KPI's will be critical in informing “decision making tools” in a data-driven fashion.

**4. What are the minimum life cycle costs (including operation and maintenance activities) needed to meet customer service expectations for the targeted LOS?**

Calculating life cycle costs requires taking into account risk and all direct and indirect costs associated with the creation, operation, maintenance, and ultimate disposal of an asset throughout its useful life. Calculating the minimum life cycle cost involves the selection of the option that is not always the lowest life cycle cost, but rather is informed by the Town’s risk tolerance where the outputs or benefits from all options are the same. VHB works with our clients to determine the targeted level of service, tolerance for risk and then calculates life cycle costs based on appropriate information.



**5. What is the best long-term funding strategy for the targeted LOS (operation/maintenance and capital improvement)?**

Funding requires a mix of sources. Occasionally, customer rates and charges may provide the backbone of a funding strategy, and would be used to pay for operations and maintenance (O&M) costs, however that may not be the case with the Town of Barrington. For capital improvements, some Towns may also rely on contributions to the system in the form of system development charges to replace or expand the system. For large capital expenditures, many Towns seek funding in the form of long-term debt in order to install or expand new assets. In order to determine the optimal mix of funding for Barrington, VHB will work with the Town in a financial planning process which may include stakeholder workshops and input from the Towns financial advisor.

Ultimately, we will look to serve as a partner to the Town: the intent of our consulting will be to provide you with sound advice, based on the specific needs and goals for your stormwater assets. We will work with you to evaluate options, prioritize a strategy, and recommend solutions that are implementable and feasible with your budget and resource requirements. As discussed later in our qualifications, we have a skilled team of professionals backed by recent relevant experience from which we will draw.



## 2. Firm History and Capabilities

Bedford Office  
founded in

★ **1987**

**70**

**local professionals**

supported by

**1,600**

engineers, scientists,  
planners, and  
designers company-wide

**30**

**locations**

throughout the  
East Coast, including  
Bedford, NH

Every community in New Hampshire is unique, and understanding the vision and challenges, needs and wants of each is integral to delivering successful transportation project solutions. VHB's passionate team of engineers, scientists, planners, and designers understand this. For more than 40 years, we have served New Hampshire's communities, working to improve mobility, enhance communities and economic vitality, and balance development and infrastructure needs with environmental stewardship. To accomplish this, our staff embrace our clients' goals, anticipate challenges, build long-lasting partnerships, and always strive to provide exceptional service.

Although VHB was originally founded as a transportation planning and engineering firm, we have expanded our core capabilities greatly over the years, to include leading professionals who are adept in specialized services such as asset management and stormwater planning. Offering the right balance of technology and engineering know how will help inform our understanding of and approach to the Town's requests and will enrich our ability to provide holistic, well thought-through solutions needed to improve asset management systems.

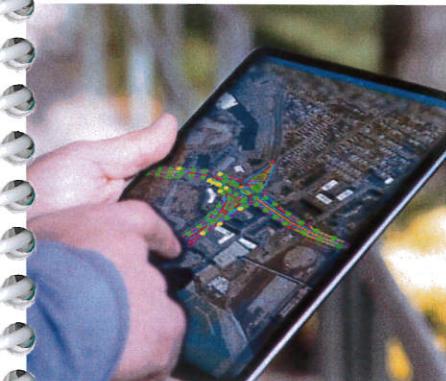
### Applied Technology and Asset Management

Our in-house Applied Technology services group is comprised of a team of professionals who work to plan, design, and implement innovative solutions to improve the way we carry out our projects and efficiently and effectively meet the needs of our clients. This group includes a team of talented planners, engineers, technicians, analysts, and developers—including a staff of 7 in our Bedford, New Hampshire office, as well as the support of more than 20 others close-by in our New England locations.

At VHB, using innovative technologies to better serve our clients is not new to us; for more than 40 years, our professionals have brought creative, leading-edge ideas and tools to yield efficiencies, as well as cost and time savings, on projects. Recognizing the needs to help communities with long-term planning for their resources and infrastructure, VHB has created tools to help our clients collect asset inventory and condition data, as well as proactively analyze potential situations, formulate work plans, and monitor progress toward established goals. Furthermore, VHB understands the importance of identifying and prioritizing risks, in order to plan ahead and reach long-term goals. We will work with you to solve key asset management issues, and develop budget-friendly and implementable solutions to improve your infrastructure systems now and into the future.

### Using Innovative Tools to Facilitate Asset Management

VHB has supported local, regional, and state government organizations for many years with tools to help plan ahead and streamline data collection and asset inventory and management in the short- and long-term. Specifically, VHB offers comprehensive, cloud-based asset management solution tools that help with data collection and reporting, as well as managing inspection data and condition assessment ratings of physical assets, including stormwater infrastructure. VHB can work with communities to develop customized solutions that best meet their needs, often leveraging a municipalities' existing Geographic Information Systems (GIS) mapping data and Esri's ArcGIS online platform. These tools are easy to implement, seamless to integrate, and efficient to use.





## Strategic Infrastructure Planning

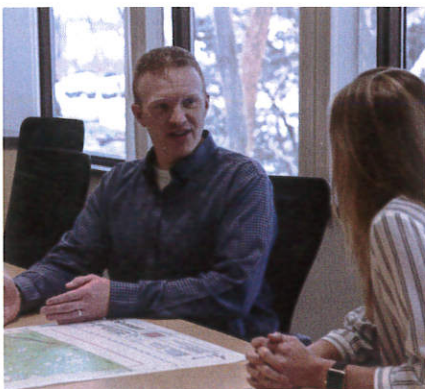
VHB has a history of providing our clients with planning recommendations that set a vision for the future. From transportation planning for community development and revitalization projects, to grant writing and funding assistance, to stormwater and water resource assessments, VHB can help clients proactively plan for the resource needs now in order to save time and money in the future.

## Transportation Planning

VHB's transportation professionals provide planning services for a wide variety of private- and public-sector clients in both urban and suburban areas. Projects have included identifying alternative mode analyses; multimodal access; congestion analyses; corridor studies; vehicular/pedestrian conflict studies; transportation impact assessments; and downtown/village parking, circulation, parking and access studies. VHB offers the ability to develop and combine technical modeling procedures with pragmatic transportation planning and traffic operations applications. We have also assisted clients with planning for their transportation infrastructure management including pavement, signs, sidewalk, and bridges, to name a few.

## Stormwater Management

VHB has an extensive group of stormwater professionals that focus on stormwater management services to enhance the municipal program operations, including asset mapping and management, budget estimating, operations and maintenance planning, capacity assessment, permit compliance services, and design and construction of stormwater Best Management Practices (BMP), among others. Our stormwater team includes scientists, planners, and engineers from our environmental, municipal services, and applied technology groups that fully understand the regulations, as well as engineering aspects of managing stormwater. Our integrated team works closely to assess and design storm drain collection and treatment systems and can perform all related tasks with in-house personnel including survey, infrastructure and drainage design and pollutant loading/water quality impact assessment. Since many of our clients are municipalities, we understand operations and how roles and responsibilities are spread across different departments with varied operational, budgetary, and regulatory concerns. We have prepared and have assisted in the implementation of numerous stormwater management programs focusing on realistic phasing of tasks and sequencing of priorities. As requested per the RFQ, VHB is prequalified on list of NHDES roster of prequalified engineers, specifically in regard to water and sewer management.



## Community Development Planning

Increasingly, communities throughout New Hampshire are revitalizing their streets and back roads, enhancing connectivity, increasing safety, and investing in their downtowns. As rural areas become more populated, though, finding the right balance between planning and development can be a challenge. For this reason, VHB's Bedford office features a "Community Development Team." This group works with local towns and cities to help them find comprehensive, context-sensitive solutions for their improvement projects. They help communities transform their vision into reality by planning for today and tomorrow.



## Financial Planning and Funding

The type of funding used on a project can impact timeline, reporting, post-construction monitoring—and even the workflow of the project itself. VHB professionals understand this. Over the years, we have worked with communities and associations to assist with obtaining state and federal grant funding, including sources such as the Environmental Protection Agency’s 319 program for watershed management/water quality efforts, or the New Hampshire Department of Environmental Services (NHDES) Aquatic Resource Mitigation (ARM) funds for infrastructure projects. For instance, we worked with the University of New Hampshire’s Stormwater Center to evaluate the financial benefits of adopting municipal stormwater regulations. We have also helped the Town of Exeter with grant writing and reporting, including assistance with funding associated with the NHDES ARM fund, NH Coastal Program, NH State Conservation Committee (Moose Plate), NOAA Coastal Ecosystem Resiliency Grant, and the National Fish and Wildlife Foundation.

## 3. Team Qualifications

Project success depends on more than merely having the technical abilities needed to deliver a viable solution. It also depends on people—their energy, enthusiasm, and commitment to achieving agreed-upon goals. VHB kept this in mind when assembling our proposed team for the Town on this project. We offer a group of professionals who are not only technically savvy, but who are also passionate about their work, communicative, and understand how to implement solutions.



Leading the proposed VHB team for this project is **Project Manager Juston Manville, MIAM**. Juston Manville has worked with communities to implement asset management strategy and systems across the country. He will lead the team in developing an asset-management strategy that addresses the Town’s key asset management goals when it comes to maintaining the life cycle of your infrastructure. Juston’s experience with both information systems management and asset management will help drive the delivery of a cohesive road map to guide future investments. Some of his relevant projects include the following:

- » **City of Gresham Asset Management Strategic Plan, Gresham, OR**  
Prior to joining VHB, Juston was Project Manager and Asset Management Consultant to the City of Gresham for an Asset Management Strategic Road Map. This SAMP helped The City of Gresham develop a strategy and ultimately buy a decision-making tool to manage assets across the municipality.
- » **Seattle Public Utility Asset Knowledge Strategic Plan, Seattle, WA**  
Prior to joining VHB, Juston was Project Manager and Data Architect for the Seattle Public Utility Asset Knowledge Strategic Plan. This plan aligned IT systems that had disparate asset registers so that SPU could track Unit Costs for Asset.
- » **City of Puyallup CIP Prioritization, Puyallup, OR**  
Juston assisted the City of Puyallup in developing a project prioritization system. A major part of the effort was helping the City make better use of their business information systems to measure financial efficiency, asset performance, and coordination across the enterprise.





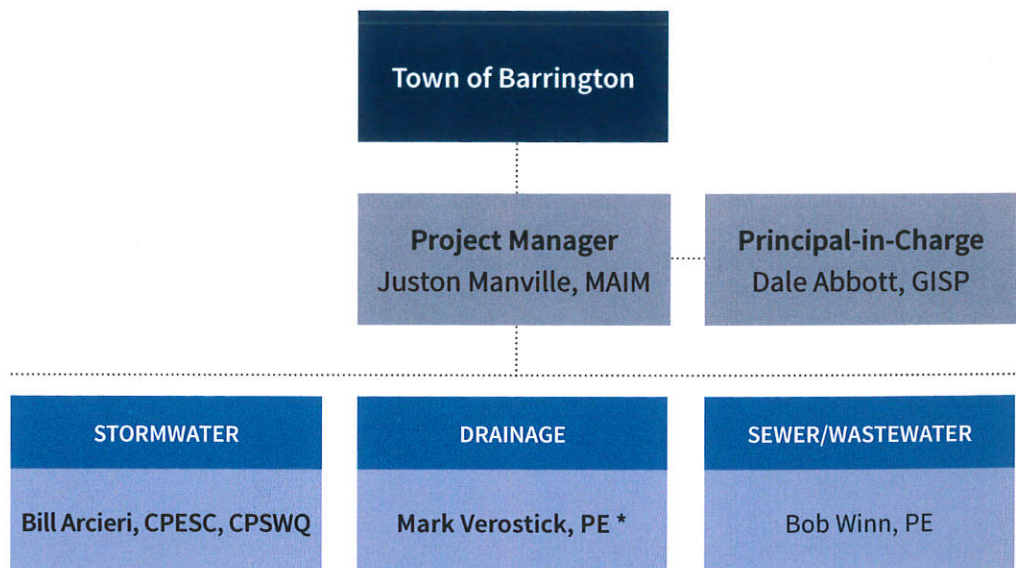
Joining Juston, is **Principal-in-Charge, Dale Abbott, GISP**. Dale brings to the project 17 years of experience working to implement GIS solutions. He is a Certified Geographic Information System Professional (GISP), and leads VHB's regional applied technology team. He will work closely with Juston to see that he has the necessary resources required to deliver successful solutions to the Town on this project. From state agencies across the East Coast, to private sector clients, to communities throughout New England, Dale has experience leading asset management and data collection projects to help clients streamline their inventory management efforts.



In addition to their asset management experience, our team members include scientists and engineers who specialize in managing infrastructure systems. For instance, regionally recognized trusted advisor in the field, **Bill Arcieri, CPEsc, CPSWQ**, will provide guidance on stormwater/water resource aspects of the project. Bill is a Senior Water Resource Scientist with extensive experience in water resource protection and water quality impact investigations. He specializes in stormwater management, developing nonpoint source pollution control strategies, coordinating sampling studies, permit negotiations, performing pollutant loading models and in the design of stormwater treatment Best Management Practices (BMPs). He is and active member of the Seacoast Stormwater Coalition and serves on the Board of Directors for the Southeast Watershed Alliance, which are both municipally driven organizations that seek to develop collaborative and cost-effective tools to assess and manage stormwater infrastructure assets and enhance regulatory compliance.

Rounding out the core team and available for guidance and technical advisory, licensed New Hampshire PE, **Mark Verostick, PE** (drainage); and licensed Maine/Massachusetts PE, **Bob Winn, PE** (sewer/wastewater), bring unique experience in understanding water systems and transportation planning and design. Juston will collaborate with these professionals to see that system solutions are developed holistically, and support required operations and maintenance.

**Project Team**



\* Licensed NH PE

## Capacity and Resources

VHB is committed to being service-oriented and responsive to our client’s needs. A key factor in this is the availability of our key staff identified in this team. A review of current committed backlogs by each of our team members indicates that all of our key personnel will have the availability to work on this project through its duration. Furthermore, VHB is an organization with a depth of resources: Including our Bedford location, we have 30 locations along the East Coast, many of which are in New England. We are able to call upon our network of colleagues for support in the event additional or specialized resources are required.

## 4. Relevant Experience

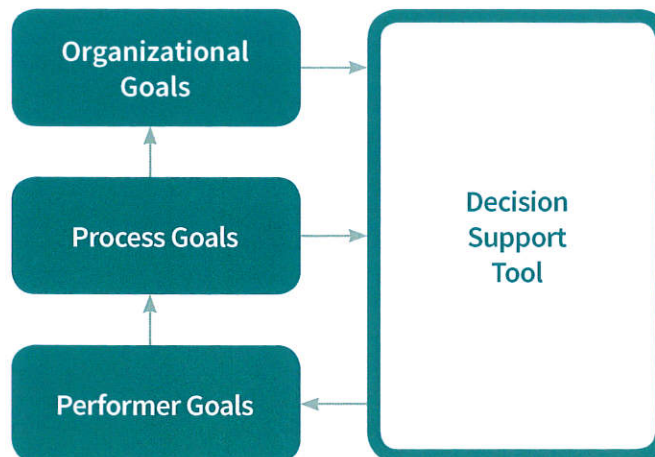
VHB has a wide breadth of experience relating to stormwater asset and inventory management and planning, as well as GIS capabilities and data collection. These projects have successfully helped communities meet both short-and long-term goals by providing the users with prioritization metrics, budgeting solutions, asset inventory, management information, new technology, and enhanced functionality. Detailed descriptions of relevant projects can be found on the following pages.

### Asset Management Planning and Data Collection

#### Tualatin Strategic Asset Management Planning | Tualatin, Oregon

The City of Tualatin is a small city of 27,000 residents just south of Portland, Oregon. Like many municipalities their size, Tualatin was looking to add capabilities to their current asset management program. Not unlike others, Tualatin had IT systems in place that offered very little in support for their decision-making processes. Wisely, Tualatin hired VHB to develop a Strategic Asset Management Plan (SAMP) in order to align organizational goals, Levels of Service and Risk within a Strategic Asset Management framework.

VHB performed a kick-off workshop to align users of the system that included representatives from the Managers Office, Finance, Engineering, Operations and Information Technology. A deeper dive into each of the groups was performed in individual workshops.

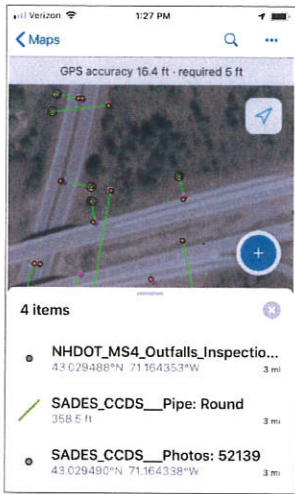


VHB developed a Risk Map based on desired Levels of Service developed in the deep dive workshops. The result of this analysis was a SAMP, based on ISO 55000, an international standard for Asset Management Systems, that outlined steps to increase the maturity of the asset management program at the City.



### Utility Data Collection Web Application | Devens, Massachusetts

MassDevelopment and the Town of Devens were seeking to develop a solution for improved data sharing across their internal departments, as well as externally with consultants. Additionally, they wanted to be able to streamline workflow of field data collection by developing digital collection processes to replace using paper inspection forms. Through a series of on-site meetings, VHB worked with MassDevelopment to conduct a GIS needs assessment for the Devens Utility Department to support mobile data collection, Web GIS, and CAD to GIS workflows. Based on the needs assessment and client requirements, VHB developed an implementation plan for web GIS and mobile data collection. This new system provided MassDevelopment and the Town with the ability view, edit and share their utility data in the field.



### NHDOT Stormwater Infrastructure Asset Inventory | Statewide, New Hampshire

As part of new EPA stormwater requirements, state agencies are tasked with developing and updating mapping, as well as performing inspections of their stormwater infrastructure systems related to inlets and outfalls. VHB was retained by the New Hampshire Department of Transportation to help meet these requirements. Specifically, VHB developed a geodatabase of all NHDOT Operated outfalls with the impacted areas. In addition to compiling the geodatabase, VHB is supporting field teams by leveraging mobile data collection solutions such as Collector for ArcGIS in combination with Survey123, performing spatial analysis in ArcGIS Pro to estimate roadway drainage, and combine outfall locations with NHDES impaired waters data. Additionally, VHB is using business intelligence (BI) tools such as Operations Dashboard to track outfall inspections and various outfalls statistics such as receiving waters and water quality impairment.

### NHDOT Stormwater BMP Inspection Inventory | Statewide, NH

VHB recently developed a stormwater BMP mobile data collection application for the New Hampshire Department of Transportation (NHDOT). The field application leverages the following ArcGIS Online products, ArcGIS Online, Collector for ArcGIS, Survey123, and Operations Dashboard. VHB developed a custom data model to represent the stormwater BMP structures, and then developed a field application for inspection and maintenance purposes. Field staff have the ability to review previous inspection records, take photos, update attribute data, and complete custom inspection forms using Survey123. VHB leverages web URLs to pass attribute information from Collector to Survey123. All surveys are launched through Collector, providing a seamless integration between the two applications. Results of the inspections are provided via an Operations Dashboard, which provides District Engineers and stormwater staff with easy access to the inspection data.



### Additional Asset Management and Data Collection Projects

In addition to those listed, VHB's applied technology team has provided data collection and inventory management for projects throughout the East Coast, including data collection solutions for Massachusetts Bay Transportation Authority, Massachusetts Department of Transportation, Rhode Island Department of Transportation, New York State Department of Transportation, as well as the communities of Dover and Merrimack, New Hampshire; and Deland and Orlando, Florida.



## Stormwater and Transportation Infrastructure Management

### On-Call Stormwater Management Services

VHB has assisted several New Hampshire communities in developing long-term budget plans to address permit compliance needs, deferred maintenance and capacity issues for stormwater assets.

- » **Rochester, Portsmouth and Hudson, NH** | As part of our on-call municipal contracts, VHB developed annual budget estimates and operations and maintenance plans to enhance the municipal program operations to include additional stormwater infrastructure inspection and maintenance.
- » **Concord and Keene, NH** | VHB is working to identify capital improvements and budget needs to remediate chronic flooding problems in several neighborhoods during large storm events due to insufficient capacity in the City's stormwater infrastructure. A similar stormwater analysis was conducted in Keene to identify critical infrastructure needs to reduce flooding in vulnerable areas throughout the City.
- » **Various Locations, NH** | VHB has worked with several communities to identify various structural and nonstructural control measures on a watershed basis to improve water quality in water bodies that have been identified as having declining or impaired water quality conditions.

### Pavement Assessment and Asset Management

VHB offers communities assistance through asset management tools and solutions to help effectively management their pavement and realize significant cost and resource savings overtime. We can help municipalities prioritize inventories, and plan and budget for needed public works programs, including pavement management, and other municipal assets.

- » **Dedham, MA** | VHB developed and implemented a Pavement Management System to help its staff understand and plan for future budget and workload needs. Through a comprehensive database, the Town can review a catalog of all town roads and their attributes, including the average condition and backlog of work needed on each, as well as pavement budget projections. These critical tools help the Town plan ahead and achieve its goals for the road network.
- » **Portsmouth, NH** | VHB has been assisting the City of Portsmouth in managing its pavements since 1993 when a full city pavement condition evaluation was performed and



Approx. 70 PCI in 2006

Approx. 84 PCI in 2015

#### Case Study: Proactive Planning for Long-term Savings in Dedham, MA

With the Town of Dedham, VHB identified an average Pavement Condition Index (PCI) to measure existing and targeted levels, as well as associated costs and projected budgeting needs for short- and long-term pavement management. Based on our recommendations and proactive planning, the Town increased its budget for pavement management and continued regular maintenance over a period of time. Overtime, by performing consistent updates and pavement management analysis, the benefit of Dedham's investment was evident in the increase in pavement condition levels, as well as significant maintenance cost savings.



the RoadManager2000 system was implemented on town computers. Since that time, with VHB’s assistance the City has used the system to determine its roadway budget and identify roadway projects that would provide the best cost-benefit to the City.

- » **Smithfield, RI** | For a local office park, VHB assessed the current condition of the total asset infrastructure system, including parking facilities, targeting areas for proposed rehabilitation, and developing pavement analysis and designs for those areas.

## Water and Utility Infrastructure Management

From assisting public utilities to guiding municipalities, VHB has extensive experience in providing water and utility services planning and design, including water infrastructure facilities, water reuse, storage, distribution systems, and wastewater systems. Our team can evaluate the conditions of any existing system to identify needed improvements and help prioritize actions moving forward.

- » **Water Systems Interconnection | Charlestown, NH** | VHB is working with the Town of Charlestown to help assess alternative options to expand its existing water infrastructure systems and connect to those in North Charlestown, ultimately improving its overall water supply for the community.
- » **Water System Analysis | Meredith, NH** | VHB assisted the Town of Meredith in their review of options to correct design issues associated with a water boosting pump station, and to review options for providing water service to a potential future development near the intersection of Routes 106 and 3. VHB coordinated with the Town, obtained, and reviewed necessary information and data related to the existing water distribution system, and provided recommendations for improvements.

## 5. References

Client satisfaction is at the forefront of any assignment the VHB Team undertakes. We are pleased to have strong relationships with our clients, including municipalities throughout New Hampshire. We encourage the Town to contact the following references; their comments will reinforce our record of outstanding performance.

Project	Reference/Address	Contact Information
<b>Tualatin Strategic Asset Management Plan</b> <i>Tualatin, OR</i>	<b>Nic Westendorf   City of Tualatin</b> 18880 SW Martinazzi Avenue, Tualatin, OR 97062	(503) 691-3673 nwestendorf@tualatin.gov
<b>NHDOT Stormwater Outfall Inventory</b> <i>Statewide, New Hampshire</i>	<b>Mark Hemmerlein   NHDOT</b> Water Quality Program Manager 7 Hazen Drive, Concord, NH 03301	(603) 271-1550 Mark.Hemmerlein@dot.nh.gov
<b>MassDevelopment Engineering Utility GIS</b> <i>Various Locations, MA</i>	<b>John Marc-Aurele   MassDevelopment</b> 99 High Street, Boston, MA 02110	(978) 784-2926 JMarc-Aurele@Massdevelopment.com
<b>On-Call Stormwater Services</b> <i>City of Portsmouth, NH</i>	<b>Brian Goetz   Deputy Director of Public Works</b> City of Portsmouth, NH 118 Pleasant Street, Portsmouth, NH 03801	(603) 427-1530 bfgoetz@cityofportsmouth.com
<b>Streetlight LED &amp; Utility Pole Asset Inventory</b> <i>City of Dover, NH</i>	<b>Annie Dove   Director of Information Technology</b> City of Dover, NH 288 Central Avenue, Dover, NH 03820-416	a.dove@dover.nh.gov 603.516.6325



# A: Additional Engineering Services

## Core Services

Transportation Planning & Engineering |  
Land Development | Planning & Design  
Environmental | Applied Technologies

## Core Markets

Transportation Agencies | Real Estate |  
State and Local Governments | Institutions |  
Federal Government | Energy



Bob Winn, PE  
Senior Project Manager,  
Water/Wastewater



Bill Arcieri, CPESC, CPSWQ  
Senior Project Manager,  
Stormwater/Water Quality



Dave Fenstermacher, PE  
Director of Land Development



Greg Goodrich, PE, NBIS  
Structures Team Leader



Julie Whitmore, PE  
Structures Project Manager

At our core, VHB is a full-service engineering consulting firm, specializing in transportation, planning, land development, environmental, and applied technologies services. We are proud to offer a range of core disciplines backed by the resources of a deep bench of specialty services under one roof. As requested in the RFQ, VHB provides several additional in-house services, and has extensive experience providing similar projects under on-call contracts with communities throughout New Hampshire and beyond. For each service, we have provided a handful of select project highlights, as well as headshots of representative project managers and leaders.

## Relevant Services, Associated Project Examples

### Drinking Water, Wastewater & Stormwater Design and Management

VHB designs drainage improvements for public agencies, site owners, and new developments. Our services include the preparation of contract plans, specifications, estimates, utilities design – including green infrastructure, grading and drainage design, stormwater management, erosion control design, and design of structural improvements. Complying with the many new stormwater management requirements while balancing municipal budgets is a challenge facing many municipalities and institutions. VHB has extensive experience in all areas of stormwater management, including: NPDES permitting, EPA and DEP compliance, stormwater hydrologic/hydraulic and pollutant load modeling, Illicit discharge detection and elimination (IDDE), and Best Management Practice (BMP) design and engineering.

**Project Examples:** *Water Systems Interconnection, Charlestown, NH; Water System Analysis, Meredith, NH; On-Demand Utility Modeling, Keene, NH; Drainage Improvements, Adams, MA; Various Stormwater On-Call*

### Civil/Site Evaluation & Design

VHB's site/civil practice is focused on the planning and design of public, private, and institutional development projects, and the utility and roadway infrastructure that supports each project. Our integrated, sustainable design approach is applied to the engineering design of site features that include roadways, parking areas, walkways, stormwater management facilities, utility corridors, water features, pump stations, and other supporting site elements. We begin by undertaking a thorough site assessment noting existing conditions, opportunities, and site constraints. Our civil design responds to program and budget requirements, while seeking to integrate with existing site conditions in an environmentally responsive manner.

**Project Examples:** *I-93 Rest Areas, Hooksett, NH; Premium Outlets, Merrimack, NH; Marine Patrol Headquarters, Gilford, NH; Jenness Beach Bathhouse, Rye, NH*

### Bridge Evaluation & Design

VHB provides the complete range of bridge and structural engineering services. Project services include bridge design, bridge inspection, construction inspection/management and replacement, multi-level parking facilities, and modifications to structures, as well as structures to support signage and intelligent transportation system (ITS) equipment. As a major provider of structural services, VHB has performed inspection, rating, evaluation, and repair of municipal, state-owned, and federal bridges throughout many locations along the eastern seaboard, including major bridge and ramp structures on major Interstate highways/turnpikes, as well as major river crossings, railroad crossings, road crossings, and interchanges. Projects also include buildings, retaining walls, structure



underpinning, culverts, shoreline protection, and bike/pedestrian crossing structures. Many of VHB's projects have also called for historical sensitivity, and we have cultural/historical specialists that can be called upon for those requirements.

**Project Examples:** *Downtown Tunnel Study, Lebanon, NH; Hooksett Turnpike Bridge, Concord, NH; Birchdale Road Bridge, Concord, NH; Clothespin Bridge, Webster, NH*



Greg Bakos, PE  
Senior Project Manager  
Roadway, Bike/Ped, Trail Design

### Roadway, Sidewalk, Trail, Path & Streetscape Evaluation, Permitting & Design (NHDOT LPA Certification required for projects utilizing this funding program)

VHB designs highway and roadway projects for state transportation agencies, municipalities, and private developers. Projects range in size from the design of multi-lane limited access highways and interchanges to the reconstruction of arteries, sidewalks, and local roads. Services encompass the full design process, including preliminary planning and design; identification of mitigation measures; preparation of contract plans, specifications and estimates; construction sequencing and scheduling; traffic management during construction; value engineering; and contract documents and bidding services. Projects have included segments of interstate highways and interchanges, multilane urban arterial highways, and numerous urban downtown street redevelopment and reconstruction projects, including complete streets and streetscape design. Additionally, VHB brings a wealth of knowledge gleaned on bicycle and pedestrian bridges, including numerous rail to trail projects and paths up and down the East Coast. VHB has nearly a dozen LPA certified professionals in our Bedford, NH, office who specialize in managing LPA projects, as well as navigating permitting needs to meet environmental compliance requirements.

**Project Examples:** *Route 27 Corridor Study, Exeter, NH; Riverfront Implementation, Nashua, NH; Roundabout Improvements, Pelham, NH; Downtown Manchester Rail Trail, Manchester, NH*



Mark Verostick, PE  
Site/Civil Engineer Project Manager

### Planning Board Assistance or Peer Review

VHB has extensive experience providing civil/site and traffic engineering peer reviews to municipalities throughout New England, including New Hampshire. In addition, we also work in the development world, affording us a thorough understanding of the options available to developers, the factors affecting the feasibility of a development, and the permits required. This experience facilitates our ability to work with the Town, stakeholders, and developers to achieve a positive and affirmative outcome that attains the best planning, design, and engineering solutions possible. Indeed, we have a strong track record of providing a reasonable review of development proposals for compliance with local regulations—as well as advising communities regarding public health, safety, and welfare within the context of their regulations.



Robin Bousa  
Managing Director, Traffic Engineering

**Project Examples:** *Peer Review on-call services, Towns of Derry and Bedford and City of Concord, NH; Traffic Review, Town of Bedford, NH*



### Experience Providing On-Call Services in New Hampshire

VHB has been providing services under on-call contract to municipalities throughout New Hampshire for decades, so we understand the importance of quality assurance, flexibility, and responsiveness. For example, we have established and maintained long-standing relationships with communities such as Bedford, Concord, Salem, and Goffstown, where we are currently providing on-call engineering support. Additionally, we hold on-call contracts with regional agencies such as the Southern New Hampshire Regional Planning Commission, New Hampshire Department of Transportation (in several categories), and New Hampshire Department of Public Works, to name a few. We look forward to partnering with you to provide the same first-rate services from our team.



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