



QUALIFICATIONS

Final Design Services

PHASES 2A AND 2C OF BRUCE FREEMAN RAIL TRAIL

ENGINEERS
FST FAY, SPOFFORD & THORNDIKE
Since 1914

In association with

VHB *Vanasse Hangen Brustlin, Inc.*

November 8, 2010



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November 8, 2010

Mr. Steve Ledoux, Town Manager
Acton Town Hall
472 Main Street
Acton, MA 01720

Re: Final Design Services for Phases 2A and 2C of the Bruce Freeman Rail Trail

Gentlemen/Ladies:

The vision of a rail trail through the communities of Westford, Carlisle, Acton and Concord began 25 years ago and was originally called the Lowell-Sudbury Rail Trail. State Representative Bruce Freeman attended those original meetings and envisioned a trail similar to the Cape Cod Rail Trail. Based on his passion for this trail, the name was officially changed to the Bruce N. Freeman Memorial Bike Path after his death in 1986. When complete, this trail will connect historic and cultural sites, natural resources, recreational facilities, and commercial and residential areas, as well as provide active recreation and alternative non-motorized transportation along its entire 25-mile route.

Fay, Spofford & Thorndike (FST) and **Vanasse, Hangen, and Brustlin (VHB)** share and support the four communities vision of this trail as a resource that will benefit residents, merchants, and the region by celebrating the past and creating a recreational facility for future generations. FST and VHB are the two largest design firms of rail trails in Massachusetts. Individually, each design firm has developed more trails than any other single firm in Massachusetts. Each firm's designated "Bike Team" specializes in trail design, gives presentations at regional conferences, volunteers their design skills for projects in their communities, and hosts outings along completed trails with friends and families. Our team takes great pride in our trail projects.

Complementing the expertise of the FST Design Team will be **LEC Environmental Consultants, Inc. (LEC)** and **Lamson Engineering Corporation (Lamson)**, two firms that we routinely team with on projects. LEC brings important knowledge on wetland resources and wildlife habitats to the project team. Lamson brings geotechnical expertise as well as bridge foundation design to strengthen our team.

The successful and timely completion of the project requires a team with the necessary depth of direct, relevant experience working on trail designs of similar complexity that are subject to MassDOT review and approval. The FST Design Team has this collective experience. We also recognize that the completed trail will ultimately become a continuous corridor of locally managed trail segments. Successfully achieving the overarching transportation goal for this project while incorporating each Town's vision for their trail segment will require close and on-going coordination with and between the four communities. Having worked on many multi-community projects, we feel we have the experience to successfully achieve this goal. Recent/current multi-community projects where we have strived to incorporate town-specific and corridor wide goals include:

- Tri-Community Greenway/Bikeway (7 miles, 3 communities)
- Bike to the Sea Trail (9 miles, 5 communities)
- Blackstone River Bikeway (2 miles, 2 communities)
- Border to Boston Trail (19 miles, 5 communities)
- Cape Cod Rail Trail (22 miles, 6 communities)
- Nashua River Rail Trail (11 miles, 4 communities)

We also have direct experience working with the BFRT communities on prior phases of the BFRT project. FST completed a BFRT Feasibility Study for the Town of Acton in 2003 and an Environmental and Engineering Assessment for the Town of Concord in 2005. VHB prepared the BFRT 25% Design plans for the Town of Concord in 2008. With this knowledge, the FST Team can hit the ground running for the next design phase.

We are pleased to assign **John K. Hendrickson, P.E.** as Project Manager. John is the firm's leading specialist in rail trail and greenway design, and has been responsible for pioneering trail design and construction efforts throughout the State. He also has over 25 years of MassDOT experience including many municipally designed trails. John also volunteers his skills in developing trails. In his hometown he obtained the grant funds and also designed the first wheelchair accessible trail in northeastern Massachusetts. Lizzy's Trail was designated one of the Top 10 Family Friendly Trails in America!

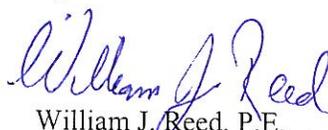
Assigned as Project Engineer is **Jennifer A. Ducey, P.E.**, a Civil Engineer who has extensive experience in the planning and design of rail trails. Having previously completed the BFRT study efforts, Jen is excited about the opportunity to work with the communities again during the final design phase. She works on many of FST's trail, roadway and bridge design projects subject to review by MassDOT and assists in coordinating the necessary environmental documentation efforts at the local, state and federal level.

Leading the VHB Team is **Trish Domigan, P.E.** Trish has successfully completed numerous trail projects in Massachusetts, including the Blackstone River Bikeway, the Watertown Bike Path, Burlington Bike Path Enhancement, Minuteman Extension Feasibility Study in Bedford and the Amelia Earhart Dam Bikepath Crossing project in Somerville.

As the Director of Transportation at FST and firm principal for this project, I will contribute my technical assistance to the design team throughout all phases of this project. I regularly visit project sites with the design team to discuss complex design issues and participate in kick-off meetings to set the project design controls. In this role, I will also have the authority to negotiate and contractually commit to all services.

Our team is very enthusiastic about the contributions we can make to Phases 2A and 2C of the BFRT. We look forward to a favorable review of our qualifications, and to working with the Towns to achieve all the goals and objectives envisioned for this project. Please feel free to call me directly for additional information or questions at (781) 221-1118 or contact John Hendrickson, Project Manager, at (781) 221-1133.

Very truly yours,
FAY, SPOFFORD & THORNDIKE, LLC
By


William J. Reed, P.E.
Principal-in-Charge

STATEMENT OF QUALIFICATIONS

Final Design Services Phases 2A and 2C of Bruce Freeman Rail Trail

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PROJECT UNDERSTANDING & APPROACH

Our team's local experience was gained while developing the Feasibility Studies for Acton, Concord and Sudbury (by FST) and the 25% design for Concord (by VHB). This insight has shown that the BFRT communities have expressed a number of concerns regarding the Trail including:

- Impacts to sensitive natural and environmental areas such as White Pond in Concord
- The Trail experience should maintain the "feel" of a rural New England wood path; a path that connects the bustle of a traditional New England village setting like West Concord to the quiet of woodlands and meadows in Acton
- Safety of Trail users and motorists at road and active rail road crossings
- Impacts to Trail corridor abutters
- Historic preservation and opportunities for historic and environmental education
- Operations and maintenance needs and costs

The key to success for this project is to develop feasible, cost effective and efficient alternatives for bicycle/pedestrian transportation that are acceptable to MassDOT, FHWA and the BFRT communities. For this project, the former railroad corridor is by-and-large physically intact. The trail can be easily constructed on the former railbed with minimal impact. Usually, the primary concerns are rehabilitation of railroad bridge structures, stabilization of the railroad embankment and alignment/sight distances at trail/roadway crossings. Although the majority of the BFRT will follow a former railroad corridor, the trail will need to divert from the former RR corridor to cross the MBTA commuter rail line at West Concord Station and in North Acton to detour around the Rex Lumber complex. In addition, the sheer length of the trail, the number of bridges, potential environmental impacts and trail design at roadway crossings will require the evaluation of complex trail design elements.

In summary, the BFRT is not a straightforward clear, grade and rail-to-trail. It is a complex project that requires an integrated team of natural and historic resource specialists, roadway and bicycle /civil and structural engineers, hydrologists, environmental permitting specialists, and public outreach professionals. Successful and timely completion of the Trail requires a team with the necessary depth of talent, and direct, relevant experience working in this corridor.

APPROACH TO TECHNICAL ASPECTS & GOALS

Trail Design issues

Alignment: Since the horizontal and vertical alignment will generally follow the former railroad alignment, the AASHTO and MassDOT and ADA shared-use trail guidelines will be satisfied. Extensive profile modifications can result in significant earth work volumes and will be avoided wherever possible.

Drainage: Railroad profiles are generally very flat and open drainage ditches were used to prevent flooding of the track structure. Over time, the lack of maintenance and increased development has caused flooding of the railbed in some areas. Our approach to the stormwater management system for the trail will be to re-establish the open drainage ditch systems to restore conveyance capacity and drain low areas. The ditches will also be used to provide attenuation so that the post development stormwater runoff volume is less than or equal to the pre-development stormwater runoff volume.

Trail surface: Although a hot-mix asphalt pavement is generally used for rail trails in Massachusetts, and both communities approved a paved trail surface, the issue of paved versus unpaved trail surface was a hotly debated subject and we would anticipate that debate to continue during the design phase. As a possible alternative, a trail typical section could include a non-paved but durable shoulder surface as recently constructed on the Phase I section of the BFRT. The design team will provide construction, maintenance, visual impact, and cost information for paved and unpaved surfaces. The unpaved surfaces of the MassDOT constructed Old Colony Trail in Mansfield (5 years old) and on the Mattapoissett rail trail (2 years) are in very good condition despite years of use by pedestrians, bicyclists, and equestrians.

Contaminated Soil: Historic use of railbeds involved the use of oil and coal to power the trains, the use of herbicides to manage vegetation, and incidental spills of hazardous materials cargo. Exposure to contaminated soil can be significantly reduced by capping the soil in-place with the trail pavement and shoulder landscaping. Our team has utilized cost-effective solutions on other projects based on MA DEP Best Management Practices for Controlling Exposure to Soil during the Development of Rail Trails protocol. The proposed trail pavement structure and grassed, graded shoulders will be constructed slightly above the existing grade. The existing soil will be excavated as needed, windrowed to the side and later spread over the shoulder area thus raising the grade of the shoulders to match the proposed pavement surface. The remaining base material and the surface course will then be constructed. This design minimizes excavation and disposal of excess material as well as the need to borrow material. We recommend on-site monitoring be conducted by a Licensed Site Professional under the direction of the MassDOT Resident Engineer rather than the contractor.

Underpass at Powder Mill Road in Concord: A traditional cut-and-cover construction process would seem to be the quickest and least expensive approach at this location however, during the 25% design phase, residents raised objections to traffic detours needed for a cut-and-cover construction process. As an alternative to the cut and cover and process, tunnel jacking or construction of a by-pass lane may be considered. We anticipate this issue will require further community input and discussion during the design process.

Bridges: This corridor holds many valuable historic resources including numerous bridges that were constructed in the early 1900's. The project design will seek to retain and rehabilitate these structures to the greatest extent possible to memorialize the railroad heritage of the corridor. The BFRT project will also require construction of new structures to replace missing spans as well as locations new structures needed over roadways. The designs will seek to use modern materials and construction techniques that will match the original period details from which these structures were built.

COMMUNITY OUTREACH

Our team's experience on the BFRT in these communities has shown that there are strong and passionate opinions both in favor for and against the Trail. Questions regarding how, when or even if the Trail should be developed; trail surface type, what are the anticipated impacts, what design and safety standards will be referenced, who will provide emergency response and security and how much will trail maintenance cost were debated and vetted through the preliminary design process. We would anticipate that achieving consensus amongst a diverse group of opinions will most likely not be possible. However given that the public process was long and contentious, the Trail Studies and 25% designs did receive support of local citizens and municipal boards as was demonstrated in town meeting referendums and votes in several corridor communities.

Key to our success in managing this aspect of the study is our ability to listen effectively to input and effectively address the concerns that we have heard. Citizens need to feel that they have been listened to and their ideas, concerns, issues have been given due consideration.

Our approach to citizens' and local outreach will be to engage them early and communicate with them regularly throughout the design process. The FST/VHB Team believes that direct, open, and honest communication will ensure that everyone understands MassDOT's requirements and constraints and that the team fully understands the communities objectives. We recommend continuous communication and coordination on a regular basis with the municipalities and the Friends of the Bruce Freeman Rail Trail organization.

We recommend meeting with the regulatory agencies very early to discuss the expected level of impacts, what their expectations for minimization and mitigation will be, and what type of historic restoration and enhancement they would desire. By reaching consensus among the agencies early regarding the parameters and goals of the project (*e.g.*, type of wetland minimization techniques, establishing a specific habitat type for rare species, and meeting users needs), we will be better able to efficiently go about the work of designing and permitting the BFRT.

In conjunction with agency coordination, an effective public participation will improve the proposed project design and public outreach process. The public outreach process for the Feasibility Study and 25% design included public workshops and the standard MassDOT public hearing process in which issues and solutions were presented followed by a question and answer period. The events were attended by overflow crowds and generally turned into public forums for opponents of the trail. Opponents posed detailed technical questions with the unrealistic expectation that detailed answers were to be immediately provided which in many cases was not prudent or even possible.

To complete the public process in an efficient and cost-effective manner, we recommend a number innovative efforts including:

Project Website: establish a public website perhaps through the municipalities, the Friends organization or MassDOT. Prior to public meetings or workshops, information would be posted to the website for public review. Comments can be submitted on the website or by mail. In this way, the citizens can have access to project information on their own schedule and the Department and the design team can review the comments and be ready at the public forum to provide appropriate answers.

Project Site Walks: a project kickoff site walk could be held in each community to obtain “on-the-ground” information from local citizens and abutters regarding drainage, road crossings, abutter concerns, proposed parking areas and access points. This one-on-one personal conversation avoids the “mob mentality” that usually occurs in larger public gatherings, Additional site walks could be schedule to address concerns or issues at specific points along the corridor if needed.



Public Workshops: following the initial site walks, public workshops could be scheduled in each community where the public is provided the opportunity to mark-up the project base plans with productive solutions or alternatives. This activity provides citizens a forum to explain their concerns AND participate in developing a solution. By providing citizens with this opportunity to actually participate in the “design process”, members of the community usually gain a better understanding of the project constraints (cost, environmental impacts, right-of-way, design standard compliance).



Sample Outreach Materials

On the following pages are some sample materials produced by the FST Design Team as part of prior community and citizen involvement efforts. Following is a brief description of this material.

- 1) **Renderings.** Renderings are an effective method for illustrating conceptual or proposed designs. Such graphics can help convey to the public what the proposed improvements will look like and, therefore, can alleviate concerns, and generate acceptance and support for the project. One type of rendering is a photographic simulation. Photo simulations are a valuable visual tool allowing people to see an accurate and realistic representation of how a completed project might look. This technique can illustrate impacts to an individual property or impacts to the corridor from a viewshed or plan perspective. Some examples prepared by FST's in-house graphic designer are shown on the following page.
- 2) **Tri-Community Greenway/Bikeway Meeting Agenda.** Please note the dedicated time for each topic of discussion. We have learned through experience that setting this type of agenda will address all issues equally and fairly.
- 3) **Abutter Issues: Property Value and Security.** These are two of our most valuable slides. As you know from your public meetings, impacts to security and property value are two major concerns of abutters. To have stories from another project solidifies the designs team comments on these issues.
- 4) **Historic Trail Features and Trail Enhancements.** These slides, by our team member VHB, clearly display the scenic corridor to the general public.
- 5) **Bruce Freeman rail Trail – MBTA Train Station Alternatives.** In this graphic, VHB clearly identifies the alternatives at the MBTA Commuter Rail Station in Concord.
- 6) **Bruce Freeman Rail Trail – Concord, Design Issues.** Utilizing a helicopter, FST has taken aerial photos of our major rail trail projects including the Cape Cod Rail Trail and Border to Boston Trail. These photos clearly show design issues to a non-engineering public. The sample shown is an aerial from our design of the Concord Rotary project. Please note that the design issues along the trail have changed since we developed this graphic.
- 7) **Border to Boston Trail.** Again, an aerial photo is used to show the existing conditions where the trail was proposed to cross I-95 in Boxford.
- 8) **Blackstone River Bikeway.** FST and VHB are currently working together to develop section one of this bikeway. Team member VHB developed this graphic that identifies the corridor as well as identifying the many structures.



The rendering (above) was prepared to depict how a proposed roundabout could be used to replace an existing traffic island.



The rendering (above) was prepared to show the visual impact that streetscape and roadway improvements would have along a local roadway.



The rendering (above) was prepared by FST to illustrate how a proposed path could enhance public access to the riverfront.

TRI-COMMUNITY GREENWAY / BIKEWAY

MEETING AGENDA

JUNE 9, 2008

8:00 PM

WINCHESTER TOWN HALL

(Location TBD)

The goal of the joint meeting with the Winchester Planning Board, Historical Commission, and Design Review Committee is to clarify design objectives and issues, exchange information and ideas, and work together to develop a mutually acceptable design approach.

In order for the meeting to be the most productive, we plan to discuss the Winchester section by the segments outlined below:

- 8:00 – 8:20 Project Overview Presentation by FST**
- 8:20 – 8:50 Bacon Street to Waterfield Road**
- ▶ Wedgemere Station
 - ▶ Ginn Field
 - ▶ Access Road
 - ▶ Winchester Center Station Parking Lot
- 8:50 – 9:20 Winchester Center**
- ▶ Waterfield Road Bridge
 - ▶ Mystic Valley Parkway
 - ▶ Mill Pond Park
- 9:20 – 9:35 Winchester High School to Muraco Elementary School**
- ▶ On-Road Route
 - ▶ School Traffic / Circulation
- 9:35 – 9:45 Leonard Field to Davidson Park**
- 9:45 – 10:00 Davidson Park to Town/City Line**
- ▶ 620 Washington Street
 - ▶ Washington Street Alternative Alignments
- 10:00 Next Steps / Upcoming Meetings**

Attachments: Locus Map



Common Questions: Property Value

“Being on or near the Minuteman Bikeway can increase the value of a home by 4 or 5 percent,” said Brian Greeley, a realtor with Bowes GMAC in Arlington.

“The old saying in real estate is location, location, location,” Greeley said. “The path is one of the crown jewels in the area. We’re in an age where physical fitness is a high priority. Having access to a bike path is analogous to years ago of having a house across from a park or playground.”

NW1

Globe North West

BOSTON SUNDAY GLOBE NOVEMBER 6, 2005

Minuteman Bikeway

Houses hawked on bikeway
Homeowners take advantage of high volume of passersby

By James Vaznis
PHOTO BY GUY AROCH

Forget about putting the house “For Sale” sign on the front lawn. For Carolyn Barometer and Myron Davis, the decision was easy: Plant the sign in the backyard. The Lexington couple lives at 33 Rivoli Ave., along the Minuteman Bikeway, which, with 2 million users annually, is the nation’s second most traveled recreational trail.

“That’s a lot of potential buyers. “We live in a cool, do-it-yourself,” said Barometer.

“We get more traffic on the bike path than the street in front of our house.”

As the Greater Boston housing market shows signs of cooling from its red-hot sales of recent years, homeowners are capitalizing on any asset to give their property an edge. For many homeowners in Arlington, Lexington, and Bedford, they are turning to the Minuteman Bikeway.

Marketing properties as being near the bike path has long been a tradition in newspaper real estate ads and trade listings, but placing the side signs where they are visible from the path is a fairly new practice in Lexington, real estate agents say, although it’s more established in Arlington.

“I think it’s been more prevalent since February or March of this year” in Lexington, said Chuck Coleman, a realtor with Carlson GMAC Real Estate, whose Lexington office is steps away from the Minuteman Bikeway. “It’s a great additional way to market a house. It gives prospective buyers a different perspective. It’s a great way to bring new life to those houses.”

BIKWAY, Page 6

Carolyn Barometer and Myron Davis of Lexington placed their “For Sale” sign in the backyard, facing the path.



Common Questions: Crime, Litter & Privacy

Nothing but praise for Salem bike path

To the Editor:

I read with interest the article on the Danvers page headline, "Bike path proponents launch petition." I thought my experiences living with a similar bike path in Salem might be relevant to the discussion.

When we purchased our home, our property abutted the abandoned Marblehead branch of the Boston & Maine Railroad. While the tracks remained, they had become overgrown with thick weeds and brambles. One fear we had was that one day regional planners might reactivate the right-of-way behind our house for light commuter rail to Marblehead.

Several years ago, we received notice about a proposed plan to con-

vert the former rail bed to a bike path. As abutters we were extremely apprehensive about this proposal. We envisioned that such a path would open access to undesirable activities such as drugs, drinking, graffiti, litter, gangs and neighborhood crime. We were also concerned about a lack of privacy, having streams of people walking and biking through our backyard.

As a result of these concerns, the city did provide a fence and some landscaping to minimize impacts to bike path neighbors. Having lived with the bike path now for several years, none of the above concerns have materialized. The bike path has instead become a haven for families, couples strolling hand in hand, moth-

ers with strollers, children pushing doll carriages, families on bikes, joggers, serious cyclists, neighbors walking their dogs, Salem State sports teams working out, etc. In the winter, it is a popular place for snowshoeing and cross-country skiing. Mostly, it has brought neighbors together with a passing hello or to stop and chat while out for a walk. I have never felt unsafe on the bike path, day or night, and we have never had to report a problem of any kind.

I believe the Salem bike path to be an asset to our property value, quality of life and to our neighborhood. I believe the Danvers project would have a similar result.

Bob Fraser
Salem

Salem Evening News
November 2005

"Several years ago, we received notice about a proposed plan to convert the former rail bed to a bike path. As abutters we were extremely apprehensive about this proposal. We envisioned that such a path would open access to undesirable activities such as drugs, drinking, graffiti, litter, gangs and neighborhood crime. We were also concerned about a lack of privacy, having streams of people walking and biking through our backyard.

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Nov. 23, 2009



Historic Trail Features

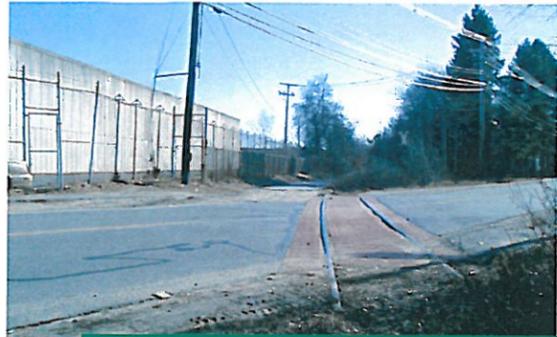




MBTA Train Station



Bruce Freeman Rail Trail-Concord Design Issues



1. MCI Concord:
Access drive location will need to be coordinated with EOT and MCI during preliminary design.



2. Bridge No. 14.81:
This bridge once carried three tracks over Nashoba Brook. Rehabilitation of this bridge would offer an excellent location for a rest area/scenic overlook.



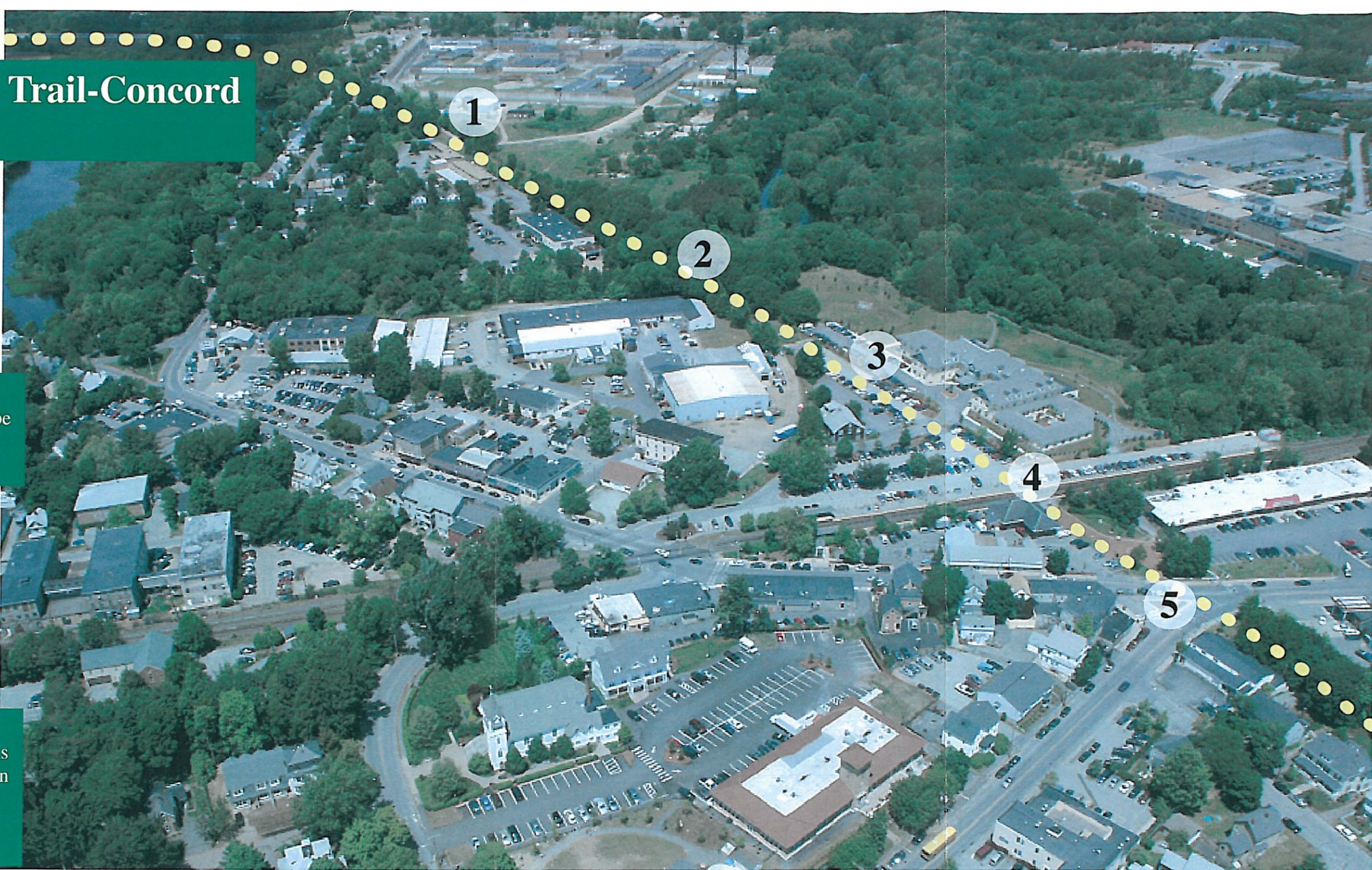
3. MBTA Commuter Parking Lot:
Evaluating how to safely bring trail users through the lot will require a review of current vehicular circulation patterns.



4. At-Grade Railroad Crossing:
A study of pedestrian control devices will be required for this or any crossing of the active tracks. This crossing will require close coordination and approval from the MBTA.



5. Main Street (Route 62) Intersection:
Geometric changes, signal modification and/or additional signage & pavement markings will improve user safety at this intersection. This effort will be coordinated with the forthcoming conceptual plans for West Concord Village.



Former Newburyport
Railroad Right-of-way



Pye Brook culvert under I-95

Pye Brook

Approximate location of
the I-95/Trail Crossing



Pye Brook Culvert

**Existing Conditions
I-95/Trail Crossing**

Blackstone River Bikeway

Blackstone/Millville, Massachusetts

John H. Chafee
BLACKSTONE RIVER VALLEY
 National Heritage Corridor Commission



Photo 1 - Central St. Parking Area



Photo 2 - Central St. Parking Area



Photo 3 - Triad Bridge Site



Photo 4 - Blackstone River Bridge



Photo 5 - Aban. St. Paul St. Bridge

VHB Vanasse Hangen Brustlin, Inc.
 530 Broadway
 Providence, Rhode Island 02909

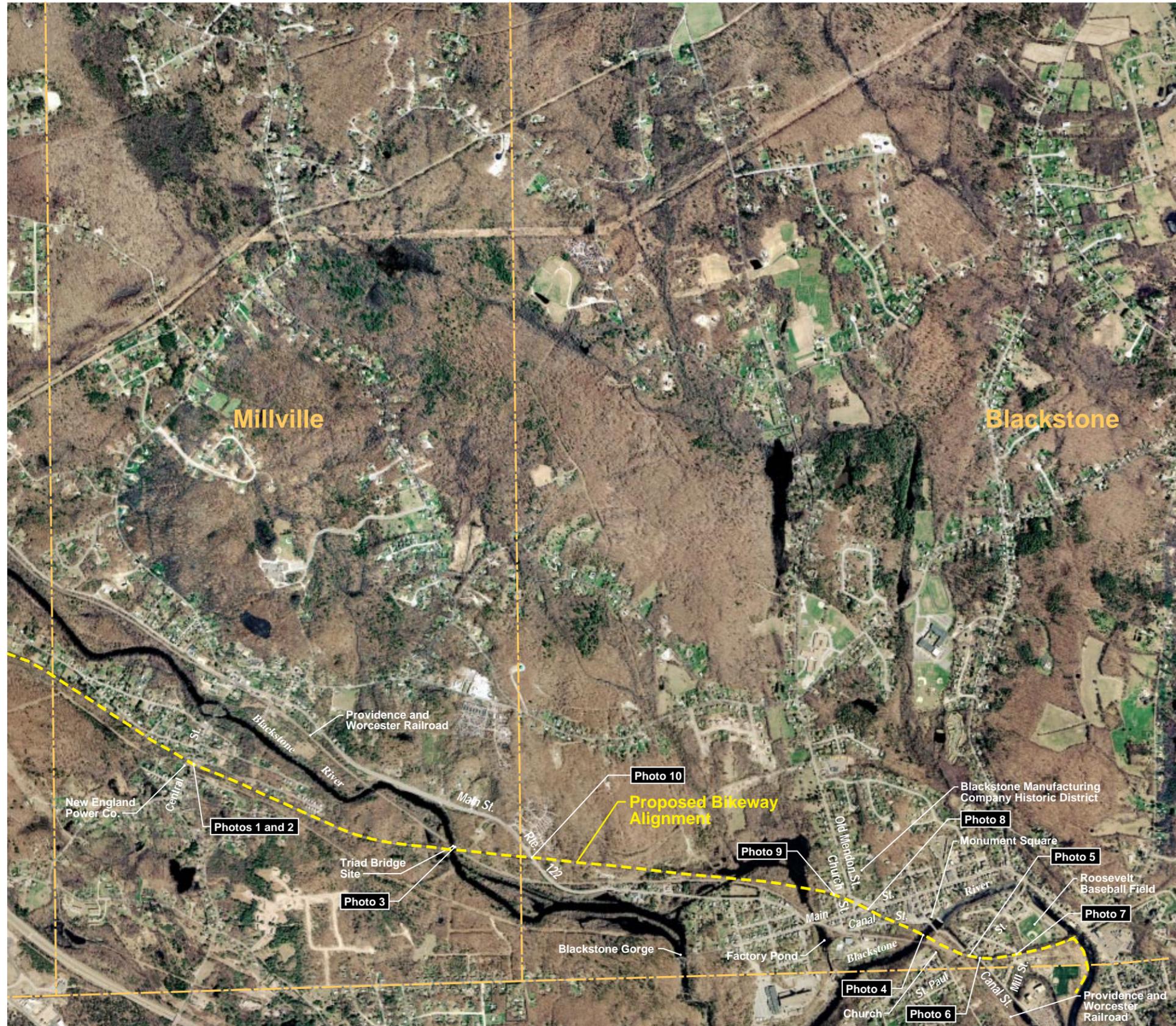


Photo 6 - Aban. Canal St. Bridge



Photo 7 - Mill St. Bridge



Photo 8 - Main St. Crossing



Photo 9 - Church St. Crossing



Photo 10 - Tunnel Under Main St.

TOWN OF WESTFORD RAIL TRAIL PARKING

“...there is no legal parking for the bike trail in Westford,” said resident Emily Teller, a member of the Friends of the Bruce Freeman Rail Trail, in an October 10th newspaper article. “People are pulling off a state highway to park in Westford.” These comments are not uncommon after a rail trail facility has been constructed. The popularity of rail trails sometimes even surprises the trail committees. The FST design team has designed numerous rail trail parking facilities. From a formal trailhead parking area located close to a major roadway, such as our 60 space parking lot in Brewster along the Cape Cod Rail Trail, to a pocket parking area placed within a local neighborhood, such as our 15-space parking lot in Dunstable along of the Nashua River Rail Trail, we are very familiar with the design issues and residents concerns related to parking.

In Westford, we would take a holistic approach to the parking issue. We will develop a GIS based map showing town-owned property, physical constraints, and environmental resources along the entire corridor, especially in the vicinity of Route 27. We should note that a parking lot does not have to be placed only at trailheads or intersecting streets. A connection from Route 27 would not only be an option but, this could also be a trailhead/visibility point for the Town of Westford. Other options include a spur line to the Butterbrook Golf Course or Westford Conservation Trust Land near Landmark Road. Any parking option located on privately owned land will require early outreach and coordination with the owner to gauge their willingness to entertain trail parking on their property. We have also designed parking areas within the former railroad right of way. The Old Colony Railroad Valuation Map (copy below) shows a 66-foot wide right of way at the Carlisle/Westford Town line. With small retaining walls, parking could be provided on the south side of the right of way with the trail on the north side and a driveway in the middle. The right of way could even be combined with the “Vose Parcel” located at Routes 27/225. This could be the least expensive of all of the options as it is within the right of way and survey and wetland delineation already exist in this area. All options should be explored. We would then meet with the Westford Engineering Department and Department of Land Use Management to select which alternatives should be studied further. Following this meeting, a more in depth study of these areas will be performed by the FST design team. At each potential parking area, we will assess lot size, feasibility, practicality, permitability and safety issues. Working with the Town, the next step is to get the parking area designed and, more importantly, include the construction cost as part of the larger Bruce Freeman Rail Trail project.

Emily Teller also said, “It could be that we never have parking in Westford.” With a cooperative effort between the FST design team, Town officials/departments, private property owners, residents and trail supporters, we think we can find a resolution for “Westford’s parking woes.”

PROJECT TEAM

FST's Bike Team has worked together to design and repair hundreds of miles of recreational paths throughout the Northeast. These specialists are thoroughly familiar with all the diverse issues involved in ensuring the success of these projects, both in terms of advancing sound engineering designs and in securing community and regulatory agency support for new and upgraded facilities.

The successful and timely completion of this project requires a team with the necessary depth of direct, relevant experience working on similar projects and familiarity with MassDOT design standards and procedures. The members of the FST Team possess this experience.



FST Bike Team

Project team leaders, John Hendrickson and Jen Ducey, have worked together and with the team members assigned on most of FST Rail-to-Trail projects. Also, team leadership brings continuity to this design phase of the Bruce Freeman Rail Trail, having worked together to prepare the feasibility study for the 4.6-mile trail section in both Acton and Concord.



VHB Bike Team

PROJECT TEAM

In addition, FST and VHB bike team staff are currently working together on design of Segment 1 of the Blackstone River Bikeway through Millville and Blackstone for the Massachusetts Department of Conservation & Recreation.

Project team members and their roles are:

Fay, Spofford & Thorndike

Project management, and lead role for trail design, traffic, landscape architecture, drainage, structural engineering, and identification of hazardous materials

VHB, Inc.

Trail design

LEC Environmental, Inc.

Wetlands studies and permitting

Lamson Engineering, Inc.

Geotechnical engineering

KEY PERSONNEL

WILLIAM J. REED, P.E. will serve as **PRINCIPAL-IN-CHARGE** for this contract. In this role, Bill will be responsible for all contractual and administrative matters. He will ensure FST's corporate commitment to the Town and be responsible for top-level technical review of all design products. As Manager of the firm's Transportation Division, Bill oversees all of FST's recreational trail projects, and, collaborating closely with John Hendrickson, Jen Ducey, and other member of FST's Bike Team, has taken an active role on many of these designs. In addition, Bill's career has focused largely on MassDOT projects, and he brings an exceptional level of familiarity with and understanding of the Department's design standards and policies.



John Hendrickson and Bill Reed
Onsite at MassDOT Bridge Project

JOHN K. HENDRICKSON, P.E., Vice President, proposed as **PROJECT MANAGER**, is FST's leading trail development specialist and brings outstanding credentials to manage this project. John heads FST's Municipal Street & Enhancement Projects Team and has 30 years experience in civil and transportation engineering. He has led the majority of FST bikeway projects, both planning and design, and has received numerous awards and commendations for his work.

John headed the two largest trail programs in the last five years in Massachusetts: the redesign of the 22-mile Cape Cod Rail Trail for the DCR, and design of the Nashua River Rail Trail from Ayer to Dunstable. The Cape Cod Rail Trail redesign involved major safety improvements, upgrades to existing bridges and tunnels, and an extensive wetland analysis and permitting program to protect sensitive environmental resources. John was also Project Manager for design of the 11-mile multi-use Nashua River Rail Trail for Massachusetts DEM, an important recreational resources which has been profiled in many travel articles.

He also brings extensive MassDOT experience on both roadway and trail projects. Sample trail projects with MassDOT oversight include the Tri-Community Bikeway in Winchester, Woburn and Stoneham; Old Eastern Marsh Trail in Salisbury ; Bike to the Sea (Northern Strand) Trail in Malden, Medford, Saugus, Everett, Lynn; Ware River Rail Trail, and the Little Bay Bike Loop in Fairhaven.



John Hendrickson is well-known for both his professional and personal efforts in advancing the development of new trail facilities throughout the region.

John has also led numerous feasibility studies and engineering assessments evaluating the feasibility of siting new trails. These include the Bruce Freeman Rail Trail Feasibility Study for the Towns of Acton and Sudbury, as well as the Concord section of this trail for the Town of Concord. Other recent projects for which he has served as Project Manager include the Georgetown Recreational Trail Study, and Boxford Recreational Trail Feasibility Study.

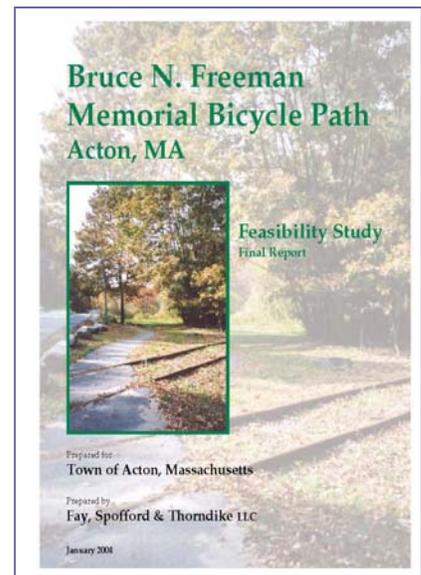
John also specializes in developing accessible trails—the much-awarded Lizzy’s Trail is an exceptional example. As a volunteer for the Hamilton Conservation Commission, John was instrumental in developing design for the first

wheelchair-accessible recreation trail in northeastern Massachusetts.

John provides expertise at conferences and panel discussions throughout the region to expand area awareness of the benefits and issues associated with development of trails, for example, the Trail Link Conference, held in Providence, where two of FST’s trails were featured as field trips for participants and John presented a paper entitled, *How to Design a Wheelchair Accessible Trail*.

JENNIFER A. DUCEY, P.E. will serve as **PROJECT ENGINEER**, taking a key role in project design and overseeing day-to-day efforts on the project. She has had significant involvement on the majority of FST’s trail facility projects in recent years, including the feasibility study for the Bruce Freeman Trail in Acton, Concord and Sudbury.

Recent trail designs have included the Old Eastern Marsh Trail in Salisbury, Tri-Community Bikeway in Woburn, Winchester and Stoneham; and Ashburnham Rail Trail. Each of these projects followed a locally administered MassDOT design process. For these projects, Jen was responsible for preparing the contract drawings, specifications and estimates in accordance with MassDOT standards. In addition, she coordinated the necessary environmental documentation at the local and state levels including the Early Environmental Coordination (EEC) and Categorical Exclusion (CE) checklists and filings with the local Conservation Commissions under the MA Wetlands Protection Act.



PROJECT TEAM

On each of these projects, Jen has also played an active role in the public involvement process. She attends and participates in trail committee, abutter, and client/agency meetings on a regular basis. Jen is also skilled at presenting study results and design concepts at public information sessions and design hearings.

Currently, John Hendrickson and Jen Ducey are working with VHB on design of a 2.5-mile section of the Blackstone River Bikeway for the Massachusetts DCR.

JOHN M. MICHALAK, P.E. will play a key role in **TRAIL DESIGN**. He has performed this work for many of FST's municipal clients. John has extensive experience designing to client's design standards, both through working directly on their bridge and roadway projects and through his role as Project Engineer or lead designer on municipal roadway improvement projects. Several projects include a bike loop in Fairhaven, MA as part of the town's master plan for attracting users to Little Bay; and the Quinebaug River Trail Phase III, Killingly, CT for ConnDOT. John was a panel member at the Urban Rivers and Their Neighborhoods Conference, Fall River, MA. He spoke about FST's Mill River Trail, Stamford, CT, as part of the "*Tales of Bikeways and Waterpaths: What Works and What Doesn't*," discussion.

Providing expertise in **HYDROLOGY** is **DAVID P. GLENN, P.E.** who brings over 27 years of civil engineering and hydrologic experience. Dave is responsible for stormwater management for surface and subsurface drainage systems, and mitigation measures, and construction cost estimates. In relevant work, he conducted field evaluations of culverts located along the Cape Cod Rail Trail as part of FST's re-design project. Relevant work also includes hydraulics analyses and drainage design for the new, 8-mile Northwest Bike Trail in Rhode Island, and for the South County Bikepath, also in Rhode Island.

ALAN T. CLOUTIER, P.E., PTOE will provide **TRAFFIC ENGINEERING** support for this project. Alan is well versed in bicycle and pedestrian safety issues, having proposed and designed various crossing treatments at numerous locations. Alan has also organized and attended a number of pedestrian safety workshops and seminars. Relevant experience includes evaluating trail / roadway crossings and recommending safety improvements along the Cochituate Rail Trail in Natick and Tri-Community Bikeway in Winchester, Woburn, and Stoneham.

WILLIAM C. BEYER, LSP will be responsible for identifying potential **HAZARDOUS MATERIALS** and contamination issues within or in close proximity to the project corridor. For all of FST's projects, Bill reviews available information to identify soil or groundwater contamination issues with the potential to impact the project and recommends bid items for inclusion within the contract documents. Bill has completed such reviews for numerous trail study and design projects including the Salisbury Rail Trail in Salisbury, MA; Northwest Bike Trail in Rhode Island; and South Fork Bikeway in New York.



Bruce Freeman Rail Trail Phase 2A and 2C Final Design

SCOTT RIDDER, RLA, LEED AP will be responsible for designing **landscaping elements** along the trail route to create an aesthetically-pleasing and inviting environment for trail users. He has nearly 30 years experience in her field, including a strong background in landscaping design for recreational trails and parks in both urban and rural environments. He worked

with the Towns of Marlborough and Hudson on the Assabet River Rail Trail. Scott prepared the preliminary layout, grading and planting for the first 4-mile leg of the trail linking the two downtowns and accommodating different types of users and with numerous changes in visual character from rural, wooded, suburban and downtown. Various items of the railroad still exist along the corridor and will be saved where possible, to maintain a sense of history and interest for the users.

WILLIAM P. SCARPATI manages FST's Asset Management team and will provide expertise in **PAVEMENT DESIGN**. Bill has evaluated more than 100 miles of roadway throughout New England, including completing comprehensive pavement management programs for the Cities of Boston and Quincy, and for various smaller Massachusetts municipalities. He handled assessment of existing pavement and recommendations for pavement rehabilitation on the re-design of the Cape Cod Rail Trail.

FST has assigned highly-qualified structural specialists for design of bridge structures. **S. D. DANIEL LEE, P.E.**, our **STRUCTURAL** lead on the project, has 31 years of structural experience focused on bridge inspection, design, and rehabilitation. He has particular expertise in



inspecting and rehabilitating structures where aesthetics is a major consideration; specifically, his ongoing role as Project Manager for MassDOT's Footprint Bridge Program where FST has undertaken the restoration of four historic timber covered bridges in central and western Massachusetts.

Current and recent work for MassDOT also includes managing bridge rehabilitations in Westfield and Williamstown, and leading structural design for the high-profile Sagamore Rotary Grade Separation project on Cape Cod.

Also assigned is **ELIZABETH BROWNELL, EIT**. Liz has significant experience in both bridge inspection and design, and has worked with Danny Lee on the restoration historic timber covered bridges for MassDOT.

Dan Lee and Liz Brownell, working with VHB, will contribute structural engineering for ongoing design of Segment 1 of the Blackstone River Bikeway for DCR, responsible for concrete viaduct restoration and for design of a new bridge.

SUBCONSULTANTS

VHB, Inc.

Vanasse Hangen Brustlin, Inc. (VHB) is one of New England's leading providers of integrated transportation, land development, and environmental services. VHB offers the focus and personal attention of a small consulting firm backed by the in-house resources of a 850-person, multidisciplinary company. The firm has completed a wide range of projects for MassDOT and is thoroughly familiar with designing transportation projects to the Department's standards.

Leading VHB's efforts will be **PATRICIA G. DOMIGAN, P.E.** Trish brings 23 years of professional experience including extensive recent experience on major bikepath design projects. She is currently Project Manager for Massachusetts DCR's Blackstone River Bikeway, Segment 1, involving design of a 2.5-mile multiuse trail from the Rhode Island border to Millville. Trish also led the Minuteman Bikeway Extension Feasibility Study for

the Town of Bedford, as well as recreational trail projects in Burlington, Watertown, and Somerville.



John Hendrickson, Bill DeSantis and Trish Domigan preparing materials for Blackstone River Bikeway

Also assigned from VHB is **TRACIE A LENHARDT, P.E.** who has a strong background in design of horizontal and vertical alignments for recreational trails, intersection and corridor reconstruction, drainage systems, and permitting. Tracie is VHB's Project Engineer for design of Segment 1 of the Blackstone River Bikeway,

and, also for the Massachusetts DCR, led design of the Watertown Branch ROW Bikeway. Her trail development experience also includes preparing a feasibility study for

the Minuteman West Bikeway in Bedford, and design of a 2.8-mile multi-purpose trail in Chicopee for MassDOT.

WILLIAM J. DESANTIS, P.E. will provide top-level technical review of VHB's design products. As Director of VHB's bicycle/pedestrian enhancement practice, he has overall technical responsibility for these designs, and has managed a number of trail design projects in Massachusetts and Rhode Island.

LEC Environmental, Inc.

LEC Environmental Consultants, Inc. (LEC), a SOMWBA-certified WBE, is an ecology-based environmental consulting firm dedicated to providing an interface between natural sciences and land use management. LEC has worked with FST on a number of transportation projects, including the Cape Cod Rail Trail Restoration, the Wakefield/Lynnfield Path

Feasibility Study, and the Squannacook River Rail Trail Feasibility Study for the Towns of Townsend and Groton.



Squannacook River Rail Trail Feasibility Study, Townsend/Groton

LEC offers a broad range of services applicable to the environmental permitting processes. They represent public, private, and non-profit clients in conducting ecological inventories and wetland assessments, preparing and reviewing environmental permit applications, and developing educational and research-oriented programs. They offer strong

expertise in wetland ecology, environmental planning, wildlife biology, soil sciences, and coastal zone management.

ANN M. MARTON, President, Director of Ecological Services, has been working in the consulting field since 1987 upon her graduation from Texas A&M University with a Bachelor of Science degree in Landscape Architecture. With LEC since 1994, Ann is the Director of Ecological Services, overseeing the company operations while managing the Wakefield Office. She is proficient in identifying and assessing wetland resource areas and their function in relation to the Massachusetts Wetlands Protection Act and local Wetlands Bylaw for wetlands protection, and assessing the impacts of land use on protectable resource areas, wildlife habitat, and endangered species.

Lamson Engineering Corporation

Lamson Engineering Corporation is a certified MBE/DBE firm providing services in structural, geotechnical, and civil engineering for public agencies and private clients. The company has provided services as a prime consultant to MassDOT-Highway Division on their bridge replacement and rehabilitation projects from studies, preliminary design through final design to construction phases. The company has also provided services on projects for other public agencies including the MBTA and Massport. Lamson is currently working as a subconsultant to FST on the MassDOT Canton Interchanges project.

Leading Lamson's efforts will be **KIN LAM, P.E.**, Principal of the firm. He brings over 25 years of experience on a wide range of geotechnical, structural and civil projects, and has led dozens of projects completed for MassDOT.

Our *Organization Chart* and resumes of key team personnel are found on the following pages.

PROJECT TEAM

Towns of Acton,
Carlisle, Concord and Westford

PRINCIPAL-IN-CHARGE
William Reed, P.E.

PROJECT MANAGER
John Hendrickson, P.E.

PROJECT ENGINEER
Jennifer Ducey, P.E.

TRAFFIC
Alan Cloutier, P.E., PTOE

TRAIL DESIGN
John Michalak, P.E.

DRAINAGE
David Glenn, P.E.

STRUCTURAL
S. Daniel Lee, P.E.
Elizabeth Brownell, EIT

VHB, Inc.
William DeSantis, P.E.
Patricia Domigan, P.E.
Tracie Lenhardt, P.E.

HAZARDOUS MATERIAL
ASSESSMENT
William Beyer, LSP

GEOTECHNICAL
Lamson Engineering, Inc.
Kin Lam, P.E.

TRAIL SURFACE DESIGN
William Scarpati

WETLANDS STUDIES/
PERMITTING
LEC Environmental
Ann Marton

LANDSCAPE ARCHITECTURE
Scott Ridder, RLA, LEED AP



WILLIAM J. REED, P.E.

Senior Vice President

EDUCATION

B.S., 1978, Civil Engineering,
Northeastern University
Graduate Courses, Transportation,
Northeastern University

PROFESSIONAL AFFILIATIONS

Member:
Boston Society of Civil Engineers
Section
Town of Pembroke Joint
Transportation Committee and
MassDOT- Transit Division
Advisory Board

PE REGISTRATION

MA, Civil, 1988, 34219
ME, Civil, 1988, 5949
NH, Civil, 1988, 7201
RI, Civil, 1986, 5280

PROJECT ROLE: Principal-in-Charge

With over 30 years experience, Bill Reed is Manager of FST's Transportation Division. In this role, he has administrative and review responsibility for all of the firm's roadway, recreational trail, highway, and traffic engineering projects.

REPRESENTATIVE RELEVANT EXPERIENCE

Rail Trail Feasibility Study, Acton, MA. Principal-in-Charge for comprehensive study assessing the feasibility of constructing a 4.6-mile shared use trail along state-owned railroad ROW.

Wakefield/Lynnfield Rail Trail Feasibility Study, MA. Principal-in-Charge for study assessing feasibility of building 4.4-mile shared use path along former Boston & Maine railroad right of way.

Cape Cod Rail Trail Re-design, Dennis – Wellfleet, MA, Massachusetts DCR. Principal-in-Charge for fast-track project involving design of improvements to 22-mile recreational trail.

Ashburnham Rail Trail, MA. Principal-in-Charge for design of 1.3-mile rail trail along portion of the former Boston & Maine Railroad right of way.

Recreational Path Feasibility Study, Georgetown, MA. Principal for project involving evaluation of 4.5-mile corridor for development of recreational trail as part of regional Border-to-Boston Trail.

Tri-Community Bikeway/Greenway, Towns of Stoneham and Winchester, and City of Woburn, MA. Principal-in-Charge for design of trail linking communities of Stoneham, Woburn, and Winchester and offering improved access to open space, schools, and parks as well as commuter rail stations.

Salisbury Rail Trail, Salisbury, MA. Principal in Charge for project involving design of 1.4-mile rail trail along portion of former Eastern Railroad right of way.

I-295 Bikeway, Portland, ME, MDOT. Project Manager, plan and design new pathway, providing access for pedestrians and bicyclists, approximately 1/2 mile long connecting new multimodal station with Frederick Street.

Walpole Street Safety Improvements, Norwood, MA. Project Manager for 1/2-mile of roadway safety improvements, including culvert widening. Also involved channelizing traffic, improving pedestrian crossings, complete drainage redesign, right-of-way, and utility relocations.



EIR/EA for I-95/I-93/ University Avenue/Dedham Street Interchange/I95 Widening, Westwood, Canton, Dedham MA, MassDOT. Principal-in-Charge for development of EIR/EA to attain NEPA and MEPA compliance for redesign of I-95/I-93 interchange inclusive of elimination of some existing access to/from interstate and replacing it with new location and widening of three-mile section of I-95.

Sagamore Rotary Grade Separation, Bourne, MA, MassDOT. Project Manager, design of high visibility and complex new interchange in to replace rotary system. Intent of grade separation project is to reduce delays and improve air quality by reducing congestion, enhancing safety, improving local and regional access. Critical issues included local business viability and construction in an Area of Critical Environmental Concern. Also involved substantial coordination with various agencies and stakeholders to advance the preferred alternative through the EA/EIR, the MassDOT design process, and construction.

Statewide Engineering Services – MassDOT. Principal-in-Charge for several of FST's on-call contracts with MassDOT.

Route 2 Safety Improvements, Athol & Phillipston, MassDOT. Project Manager. Preliminary and final design of safety improvements along 7.6 miles of highway, including necessary environmental documentation, limited construction phase services.

Route 3 Corridor Study, Concord, NH. Principal-in-Charge for evaluation of existing conditions, development of roadway improvement concepts including roundabout options and prioritization of projects for a 5.4-mile corridor study. Project has required extensive work with Project Advisory Committee and City



**JOHN K.
HENDRICKSON, P.E.**
Vice President

EDUCATION

B.S., 1977, Civil Engineering,
Rensselaer Polytechnic Institute

PROFESSIONAL AFFILIATIONS

Member:

East Coast Greenway Alliance,
North Shore, Massachusetts
Coordinator
Rails to Trails Conservancy
MassBike
Coastal Trails Coalition
Essex National Heritage
Commission
Massachusetts Association of
Conservation Commissions
Hamilton Conservation
Commission

PE REGISTRATION

MA, Civil, 1990, 35358
CT, Civil, 1994, 18286

PUBLICATIONS

"Environmental Permitting for
Bikeways" MassCyclist, Fall 2000
"The Use of Earth Berms in Noise
Barrier Construction," The Wall
Journal, The International Journal
of Transportation-Related
Environmental Issues, Issue No.
16, March/April, 1995
"MassDOT Completes First Noise
Barrier Installation," ibid., Issue
No. 23, May/June 1996

PROJECT ROLE: Project Manager

John Hendrickson has nearly 30 years experience in civil and transportation engineering. He handles civil engineering on a variety of highway, bikeway, and noise barrier projects.

REPRESENTATIVE RELEVANT EXPERIENCE

Rail Trail Feasibility Study, Acton, MA. Project Manager of comprehensive study assessing the feasibility of constructing a 4.6-mile shared use trail along state-owned railroad ROW. Conducted in three phases: field investigation/analysis of existing conditions, rail trail conceptual design, and development of an implementation plan.

Border to Boston Rail Trail, Boxford to Salisbury, MA. Project Manager for design of northern section of 30-mile Border to Boston Trail. This section will include seven bridges, numerous environmental permits and an intensive public outreach program which will be led by John.

Blackstone River Bikeway, Segment 1, Millville and Blackstone, Mass. DCR. FST's Project Manager on project involving design of 2.5-mile recreational trail.

Salisbury Rail Trail, Salisbury, MA, Town of Salisbury. Project Manager responsible for the design of 1.4-mile rail trail along a portion of the former Eastern Railroad right of way. Project included the design of an accessible parking area, scenic overlooks and related work. This was a locally administered MassDOT project.

Cape Cod Rail Trail Re-design, Dennis – Wellfleet, MA, Mass. DCR. Project Manager, fast track design of improvements to 22-mile trail. Included access control and operational features; trail paving and edge improvements; accommodation for equestrian trail; intersection improvements; improvements to site features and furniture; trail identifier signage; trailhead gateways; informational kiosks; mile markers; rest areas; overlooks; planting design and vegetation management; safety improvements to existing tunnel and approaches

Wakefield/Lynnfield Rail Trail Feasibility Study, MA. Project Manager for study assessing the feasibility of building 4.4-mile shared use path along former Boston & Maine railroad right of way.

River Valley Rail Trail and Covered Bridge, Ware Community Development Department, MA. Project Manager of preliminary design of the 3.5 mile Ware River Valley Rail Trail. Abandoned rail line, adjacent to the Ware River, includes scenic overlooks and picnic areas as well as connections to walking trails that guide the trail user to the river's edge.



Tri-Community Bikeway/Greenway, Towns of Stoneham and Winchester, and City of Woburn, MA. Project Manager. Will design transportation connections, linking the communities of Stoneham, Woburn, and Winchester and offering improved access to open space, schools, and parks as well as commuter rail stations. Design will also incorporate recreational needs for bicyclists, walkers, joggers, and rollerbladers. In addition, the design will offer unique opportunities to open up portions of the riverfront for unprecedented public enjoyment.

Mystic River Reservation Trail, Office of Strategic Planning & Development, Somerville, MA. Project Manager for developing the Mystic River Reservation Trail along Somerville's riverfront in the Assembly Square District. Project involves community involvement, survey, trail design, signs & pavement markings, drainage, landscape, and environmental compliance and permitting.

Cape Cod Rail Trail Improvements, Harwich & Orleans, MA, Cape Cod Commission.. Project Manager. Design of sections of Rail Trail and bridges to provide new crossings over Route 6, extend portions of Trail, significantly improve user safety. Project restored two vital segments of immensely-popular facility.

Nashua River Rail Trail, Ayer, Groton, Pepperell, and Dunstable, MA, Massachusetts DEM. Project Manager for 11+-mile corridor recreational multi-use trail design to serve bicyclists, walkers, joggers, equestrians, and others along corridor adjacent to a State forest and proximate to commuter rail line. Focus was on access, parking, at-grade crossings and user safety, culvert and bridge structures, drainage, and various buried utilities. Amenities included rest stops and scenic overlooks.

Bike Loop, Town of Fairhaven, MA. Project Manager for design of new bikepath, approximately one mile in length, traversing Little Bay Conservation Area. Amenities include a parking and picnic area which is part of town's master plan for attracting users to Little Bay.

Accessible Trail, Hamilton Conservation Commission, MA. Instrumental in developing design for first wheelchair-accessible recreation trail in northeastern Massachusetts. Program was funded through a grant from DEM's Small Greenways Program. He developed a 10-mile hiking trail through various open spaces in Hamilton, also under a DEM grant.



JENNIFER A. DUCEY, P.E.
Principal Engineer

EDUCATION

B.S., May 2000, Civil Engineering,
Worcester Polytechnic Institute
M.B.A., 2002, Worcester Polytechnic
Institute

PROFESSIONAL AFFILIATIONS

Town of Natick Conservation
Commission, Member (2010 –
present)
National Charrette Institute (NCI)
Planner Certificate
Massachusetts School Building
Authority Designer Selection
Panel, Member - ACEC Designee
(2007-2010)

HONORS

Tau Beta Pi
Chi Epsilon

PE REGISTRATIONS

Civil, MA, 2006, 46688

PROJECT ROLE: Project Engineer

Since joining FST, Jen Ducey has provided technical design and planning support for roadway, shared use path/trail, and utility improvement projects. She has assisted in the preparation of contract documents, cost estimates, design studies, and environmental documentation for a variety of local and state transportation projects.

REPRESENTATIVE RELEVANT EXPERIENCE

Rail Trail Feasibility Study, Acton, MA. Project Engineer for comprehensive study assessing feasibility of constructing 4.6-mile shared use trail along state-owned railroad ROW. Conducted in three phases: field investigation/analysis of existing conditions, rail trail conceptual design, and development of an implementation plan.

Salisbury Rail Trail, Salisbury, MA, Town of Salisbury. Project Engineer responsible for the design of 1.4-mile rail trail along a portion of the former Eastern Railroad right of way. The project also includes the design of an accessible parking area, scenic overlooks and related work.

Blackstone River Bikeway, Segment 1, Millville and Blackstone, Mass. DCR. FST's Project Engineer for design of 2.5-mile recreational trail.

Ashburnham Rail Trail, Ashburnham, MA, Town of Ashburnham. Project Engineer for the design of a 1.3-mile rail trail along a portion of the former Boston & Maine Railroad right of way.

Tri-Community Bikeway, Winchester, Woburn, Stoneham, MA. Assisted with the design of the 6.6-mile shared use path project along the Aberjona River greenway through three communities. Responsible for conceptual alignment study, continued client and committee coordination, and project design through the MassDOT process.

Cape Cod Rail Trail Redesign, Dennis to Wellfleet, MA, Department of Conservation and Recreation. Led team effort in development of improvement concepts and was responsible for preparing the Preliminary Corridor Report and 25% Design Report for the 22-mile rail trail through six Cape Cod communities. Assisted in preparing plans, specifications and estimates for the \$6.4M construction project.

The Northern Strand Trail (formerly Bike to the Sea Trail), Everett and Malden, MassDOT. Prepared 75% design plans, project specifications, and estimate for a 1.8-kilometer multi-use bike path. Developed alignment and profiles along railroad right-of-way to avoid impacts to adjacent properties and existing railroad tracks.

Dow Brook Conservation Area Accessible Trail System, Ipswich, MA, Town of Ipswich. Project Engineer responsible for the design



and preparation of contract documents for a handicapped accessible soft surface trail with adjacent parking area. Design included board-walk through sensitive wetland areas.

Northwest Bike Trail, Providence, Smithfield & Johnston, RI, RIDOT. Completed various floodplain impact studies. Developed several bike path alignment and profile alternatives to remediate impacts to the floodplain and floodway. Computed required floodplain compensation volumes on a foot-by-foot basis and prepared plans for proposed compensation areas along the bike path.

South Fork Bikeway, East Hampton, NY, Town of East Hampton. Assisted in the planning and design of a 3-mile segment of the bikeway. The bikeway generally follows the Long Island Rail Road and includes two at-grade crossings and two pedestrian/bicycle overpasses.

Washington Secondary Bikepath, Warwick, RI, RIDOT. Assisted in design of a 1.5-mile segment of multi-use bikepath. Designed alignment and profiles along the existing rail bed including improvements to several intersections with local roads.

Border to Boston Trail, Boxford to Salisbury, MA, MassDOT. Project Engineer responsible for preparing design plans for the 19-mile northern section of the Border to Boston project from the Topsfield/Boxford line north to the NH border. This trail segment forms part of the larger 28-mile trail proposed between Danvers and Salisbury. Also responsible for coordinating environmental documentation filings at the local and state levels.

Cochituate Rail Trail Conceptual Design Study, Town of Natick, MA. Project Engineer responsible for developing a conceptual trail design for the rail to trail conversion of a 2.4 mile segment of the "Saxonville Branch" of the former Boston & Albany Railroad. Presented many design elements and intentionally provided several options for the Town to further consider during the design phase. Outlined the level and sources of funding for subsequent project phases. Worked closely with the Rail Trail Advisory Committee.

Boxford Recreational Trail Feasibility Study and Conceptual Design Plan, Town of Boxford, MA. Project Engineer responsible for studying the 2.5-mile Boxford segment of the 30-mile Border to Boston Trail project. Involved the evaluation of both on and off-road alternative alignments. FST, the Recreational Committee and Path Sub-Committee will select a recommended alternative that can be advanced as part of the regional Border to Boston Trail initiative.



JOHN M. MICHALAK, P.E.
Senior Principal Engineer

EDUCATION

B.S., 1993, Civil Engineering,
University of Massachusetts

PROFESSIONAL AFFILIATIONS

Member:

American Society of Civil
Engineers

Boston Society of Civil Engineers
Massachusetts Highway
Association

PE REGISTRATION

MA, Civil, 2003

**PROFESSIONAL DEVELOPMENT AND
WORKSHOPS**

PSMJ Project Management

Bootcamp 2006 - Burlington, MA

ACEC Program for Emerging
Leaders 2006 - Boston, MA

Moving Together Conference 2007 -
Boston, MA

Urban Rivers and Their

Neighborhoods - Panelist,

November 2004 - Fall River, MA

Trail Link 2003 - Providence, RI

Baystate Roads Pavement

Preservation Workshop, May

2002 - Westborough, MA

PROJECT ROLE: Trail Planning & Design

John Michalak has diverse experience in civil design of transportation facilities. His many assignments include the reconstruction of municipal roadways, improvements to state highways and the design of multi-use recreational trails.

REPRESENTATIVE RELEVANT EXPERIENCE

Cape Cod Rail Trail Re-design, Dennis – Wellfleet, Mass. Department of Conservation & Recreation. Project Engineer on project involving design of improvements to 22-mile recreational trail.

Bike to the Sea, Malden, Medford, Everett, Saugus & Lynn, MA. Project Engineer for design of new 9-mile trail through five communities.

Road Safety Study, Hamilton, MA. Project Engineer, engineering analysis/feasibility study for creation of safe and effective bicycle/pedestrian corridors along three streets.

River Valley Rail Trail, Ware Community Development Department, MA. Project Engineer, design 3.5 mile trail along abandoned rail line, adjacent to Ware River, scenic overlooks and picnic areas, connections to walking trails to river's edge.

Cape Cod Rail Trail Improvements, Harwich & Orleans, MA, Cape Cod Commission. Design section of Rail Trail to provide new crossings over Route 6 and extend portions of trail. Two new bridges constructed in Harwich and Orleans to improve trail user safety by connecting portions of the trail system on both sides of Route 6.

South County Bikepath, Narragansett/S. Kingston, RI, RIDOT. Design of alignment, profile and grading. Assisted with calculations and environmental permitting.

Nashua River Rail Trail, (Ayer, Groton, Pepperell, Dunstable), Massachusetts DEM. Project Engineer for design of 11+-mile corridor recreational multi-use trail to serve bicyclists, walkers, joggers, equestrians, and others. Design included at-grade crossings, modifications to an existing railroad bridge, two new concrete underpasses, new parking lots, new signage and pavement markings for entire facility.

Bike Loop, Fairhaven, MA. Project Engineer, design new 1-mile bikepath across Little Bay Conservation Area. Amenities include development of skating pond, part of town's master plan for attracting users to Little Bay.



Mystic River Reservation Trail, Office of Strategic Planning & Development, Somerville, MA. Project Engineer for developing the Mystic River Reservation Trail along Somerville's riverfront in the Assembly Square District. The project involved community involvement, survey, trail design, signs & pavement markings, drainage, landscape, and environmental compliance and permitting.

Quinebaug River Trail Phase III & Phase IV, Killingly, CT, ConnDOT. Project Engineer. Design of over 3 miles of trail extension of award-winning pedestrian/bicycle facility following riverbank. Design included archaeological study and report of Native American fishing site and one new bridge structure.

Nashua Heritage Rail Trail, Nashua, NH, Community Development Dept. Project Engineer. Recreational trail uses abandoned railroad bed of Nashua-Worcester rail line, developed in 1848. Extends from Main Street to George Street in downtown Nashua, passing City Hall, through residential neighborhoods, approximately 1.3 miles.

Northwest Bike Trail, Johnston, Smithfield, Providence, RI, RIDOT. Field checked survey; designed preliminary alignment.

Massachusetts Avenue Corridor Improvements, Arlington, MA. Project Manager on streetscape and transportation improvement projects along one-mile length of major urban spine. Work involves improving traffic flow by changing use of available pavement; defining travel, turn and bike lanes with pavement markings; upgrading signalized intersections; and installation of new signage. Major streetscape amenities include streetlighting, landscaping, decorative pavement surfaces, kiosks, signage and bus shelters.

Nonantum Road and Recreational Path Reconstruction, Newton/Watertown, Mass. Dept. of Conservation & Recreation. Project Engineer. Responsible for design for reconstruction of 5,500 feet of Nonantum Road and adjacent recreational path. Project objectives are to convert four lane section of Nonantum Road to two-lane section of roadway and to improve safety by developing wider shoulders and a 4' flush median. Also includes widening adjacent recreational path and providing landscaped separation from the roadway where possible

Sidewalk Construction and Intersection Improvements on Doyle Road and Salisbury Street, Holden, MA. Project Manager. Responsible for overseeing design and development of final plans for sidewalk construction along two separate roadways in Holden.



**SCOTT T. RIDDER, RLA,
LEED AP**
Landscape Architect

EDUCATION

B.A., 1984, Bachelor of Landscape
Architecture, Louisiana State
University

REGISTRATIONS

Landscape Architect
MA, 1986, #893
MI, 1986
CT, 1999
ME, 2002

Council of Landscape Architectural
Registration Boards (CLARB)

February 2010

LEED AP

January 2009

PROJECT ROLE: Landscape Architect

Scott Ridder has more than 26 years of experience in designing landscape architecture and site development projects throughout New England for numerous architectural, transportation and site development clients. His expertise incorporates a broad variety of project types including streetscapes and urban design, academic campus development, residential, institutional and commercial building development, bike paths, and parks.

REPRESENTATIVE RELEVANT EXPERIENCE

Towns of Marlborough and Hudson, Assabet River Rail Trail, MA. Prepared preliminary layout, grading and planting for first 4-mile leg of the trail linking the two downtowns and accommodating different types of users and with numerous changes in visual character from rural, wooded, suburban and downtown. Designs incorporated safety along the trail for both users and abutters. At-grade crossings will be striped, signed, and the cyclists will be encouraged to dismount at these crossings. Bridge over the river was evaluated and revamped to receive cyclists, walkers, and emergency vehicles.

National Park Service, Province Lands Bike Path. Worked with the Denver Service Center, local Park Rangers, and residents in rehabilitation of 7-mile long Province Lands Bike Path in Provincetown. Tasks involved reviewing entire trail and developing concepts for widening, realignments, and other safety improvements.

Central Walkway, University of Connecticut, Storrs, CT. Designed a central walkway at the University of Connecticut. Work consisted of closing a street and creating a 1,000-foot-long tree-lined pedestrian way, connecting the South Campus Housing and the central campus core. The brick was laid on a concrete base and mortared in place to facilitate winter construction. The design included two separate student gathering areas. Improvements included brick piers and granite-capped walls, decorative pavements, raised intersections, lighting emergency call boxes and significant plantings of trees and shrubs.

Seaport Avenue, Boston, Massport. Prepared design and construction plans for a raised median along Seaport Avenue. Site improvements include decorative granite planters, granite cobbles and curbing and steel fencing with cantilever



slide gates. Plantings, including trees, shrubs, ornamental grasses, and perennials, for two raised medians along Congress Street were also designed.

East/West Parkway, Weymouth, MA. Provided conceptual landscape planting along new 2 mile long parkway in Weymouth. Project is part of the reuse plan at the former South Weymouth Naval Air Station. Goal is to create an enjoyable roadway experience for both users and residents by the use of layers of various deciduous and evergreen plant materials.

Porter Square Redevelopment, Cambridge, MA. Prepared site plans and details at redevelopment of major public square along Massachusetts Avenue in Cambridge.

Center Concourse, Quincy, MA. Served as landscape architect for Phase I of the new Center Concourse roadway. Roadway will eventually link the Hancock Street commercial district to Burgin Parkway via a bridge structure over the MBTA's Rail Corridor. Incorporation of pedestrian amenities such as wide tree-lined walks, brick and granite paving at platooning areas, seating areas, lighting, and signage are included along the entire roadway. Project had a high level of community involvement including a Citizens Advisory Committee.

National Park Service, Wayside House, Concord, MA. Performed a site and drainage design improvement study at this 300 year old house once home to author Nathaniel Hawthorne. This property is part of the Minute Man National Historical Park. A 60-foot hill rises up from the rear of the house. Over time the bottom of the slope has slowly encroached on the rear of the work area outside the old kitchen. The solution for correcting this situation included constructing a fieldstone wall, planting the lower portion of the slope, and creating two planted terraces at the bottom of the slope. Additionally, the finish grade was pitched away from the house as much as possible to aid in protecting the stone and wood foundation.



WILLIAM P. SCARPATI

Senior Asset Management
Specialist

EDUCATION

B.S., Civil Engineering, Rochester
Institute of Technology,
Rochester, NY, 1993

PROFESSIONAL AFFILIATIONS

Member: American Society of Civil
Engineers

CERTIFICATIONS

New England Transportation
Technician Certification Program
(NETTCP) – Certification in Hot
Mix
Asphalt Plant Testing and HMA
Paving Inspection, #474, #964
Nuclear Regulatory Commission

REGISTRATIONS & LICENSES

Massachusetts Construction
Supervisors License –
Unrestricted #069328
Nuclear Regulatory Commission in
Radiation Safety and Use of
Nuclear Gauges CPN #23812 June
19, 1994

PROJECT ROLE: Trail Surface Design

Bill Scarpati manages FST's Asset Management Team, with 13 years experience in pavement management systems. He handles pavement evaluations, roadway data analysis, GIS integration, report writing, and roadway program presentation. He has a strong background in inspection of Hot Mix Asphalt (HMA), pavement density testing, and soils structure analyzes. He is a licensed inspector for pavement quality assurance testing of HMA plants and paving operations.

REPRESENTATIVE RELEVANT EXPERIENCE

Pavement Management, Cape Cod Rail Trail Rehabilitation, Mass. DCR. Responsible for conducting a comprehensive subsurface investigation program of existing trail and developing a cost-effective pavement rehabilitation strategy.

Pavement Management, Boston, MA. Project Engineer, pavement management services for roadways and sidewalks in Boston in preparation for Democratic National Convention.

Pavement Management, Quincy, MA. Project Manager, conducted townwide Pavement Management Study. Included detailed pavement condition assessment and sidewalk, curb, drainage, and utility structure evaluation. In addition to producing report of findings and recommendations, all infrastructure data is geo-linked to GIS map.

Pavement Management, Hopkinton, MA. Project Manager, conducted townwide Pavement Management Study. Includes detailed pavement condition assessment and sidewalk, curb, drainage, and utility structure evaluation. In addition to report of findings and recommendations, all infrastructure data is geo-linked to GIS map.

Pavement Management Services, NYSDOT, NY. Project Engineer, conducted network-level pavement surface evaluation for various pavement segments on the Long Island Expressway.

Network Level Pavement Management, Various Communities in New England. Coordinated pavement evaluations and other infrastructure inventory data collection for public agencies in Cambridge, Concord, Lexington, Sandwich, Westwood, Woburn, MA; Providence, RI; Hudson, OH. Responsibilities included overseeing roadway network identification, managing field data collection, ensuring project quality control, configuring pavement management systems to implement community standards. Network level projects have included both new pavement management systems and updates of existing systems.



S.D. DANIEL LEE, P.E.

Vice President

EDUCATION

M.S., 1983, Structural Engineering,
Northeastern University

B.S., 1976, Civil Engineering,
Northeastern University

PROFESSIONAL AFFILIATIONS

Member: Boston Society of Civil
Engineers Section/ASCE;
American Society of Civil
Engineers

PUBLICATIONS

Lee, S.D. Daniel and Anderson,
Matthew, *Preservation of Historic
Gilbertville Covered Bridge*,
STRUCTURE Magazine, October
2007

Lee, S.D. Daniel and Anderson,
Matthew, *Historic Timber Bridges:
Design and Rehabilitation of Three
Structures in Massachusetts*,
STRUCTURE Magazine, October
2005

PE REGISTRATIONS

MA, Structural, 1984

CT, Structural, 2002

NY, 2005

RI, 2005

FL, Structural, 2006

PROJECT ROLE: Structural Engineering

Danny Lee is a senior member of FST's Structural Division with a very strong background in bridge inspection, design, and rehabilitation projects for MassDOT.

REPRESENTATIVE RELEVANT EXPERIENCE

Restoration of Historic Timber Covered Bridge, Conway, MA, MassDOT. Project Manager leading design and detailing to restore historic timber covered bridge. A pair of Howe Trusses carries this single span structure over the South River.

Restoration of Historic Timber Covered Bridge, Charlemont, MA, MassDOT. Project Manager on assignment involving design for restoration of historic timber covered bridge.

Historic Timber Covered Bridge Restoration, Hardwick - Ware, MA, MassDOT. Project Manager responsible for design and detailing necessary to restore historic timber covered bridge. Pair of Towne Lattice Trusses carries this single span structure over the North River.

Restoration of Historic Timber Covered Bridge, Colrain, MA, MassDOT. Project Manager responsible for the design and detailing necessary to restore this historic timber covered bridge.

Hines Memorial Bridge, Deer Island, Amesbury, MA. Project Manager. Provide technical assistance to MassDOT for their Design-Build project. Tasks include technical review of all highway, structural, electrical, and mechanical design submittals for the replacement movable bridge.

Replacement of CSX Railroad Bridge over Union Street, Bridge No. W-21-006, West Springfield, MassDOT. Project Manager. Coordinate design for replacement of a steel railroad bridge. Bridge carries six sets of tracks over Union Street. Also included is design for new Intermodal Connector Road through the adjacent railroad yard.

Rehabilitation of Bridge No. W-25-011, Westfield, MassDOT. Project Manager. Coordinate design for rehabilitation of a steel through-girder main span over railroad tracks and a brick arch approach span over an access road.

Replacement of Bridge No. W-37-017, Williamstown, MassDOT. Project Structural Engineer. Coordinate design for bridge replacement. Replacement is a precast/prestressed butted box-beam simple-span bridge replacing a two-span cast-in-place structure over the Green River.



Belden Bly Bridge, Lynn and Saugus, MassDOT. Project Manager. Inspection and preliminary design for replacement of 82-year old historic movable bridge, which spans the Saugus River.

As-Needed Services, MassDOT. Structural design for noise barrier replacement, I-93, Somerville. Existing barrier was severely deteriorated. Dan evaluated structural capacity of existing supports and feasibility of installing new panels. Subsequently, developed contract drawings for new barrier.

I-295 Commercial Street Project, Portland, ME, MDOT. Structural Engineer, design-build project for the MDOT to provide Environmental Assessment and 25% concept design for the I-295 Connector.

Long Island Expressway over Medford Ave., NYSDOT. Supervised design and details to modify existing bridge, adding one new concrete box beam to support new 4.48-meter timber noise barrier on 21-m simple span bridge.

CA/T I-90, Logan Airport Interchange, Boston, MA, MassDOT. Responsible for design of steel alternate of viaduct structures. Viaducts consisted of bridge spans with curved single or multiple box girders at radii as small as 260 ft. Responsibility involved coordination of design and details of two alternatives; investigation, study, and design of curved steel box girders; details of superstructure elements; and preparation of contract drawings. Design of complex system of surface roadways and viaducts leading to and from Logan International Airport. System of viaducts to be constructed either of curved trapezoidal steel box girders with a concrete deck or of cast-in-place post-tensioned concrete box with a monolithic deck, depending on construction bids for two alternatives.

CA/T North to Congress St., Boston, MA, MassDOT. Structural Team Manager. Complex section involving 8-lane tunnel through downtown Boston, local streets, ramps, etc. Construction cost over \$1 billion. Responsible for all structural design, daily coordination.

As-Needed Structural Engineering Services, P. Gioioso & Sons. Project Engineer for as-needed structural services to contractor.



ALAN T. CLOUTIER, P.E., PTOE
Senior Engineer

EDUCATION

M.S., 2003, Civil Engineering,
Northeastern University
B.S., 1998, Civil Engineering, University
of Massachusetts, Dartmouth

PROFESSIONAL AFFILIATIONS

Member:
Institute of Transportation Engineers
Continuing Education Committee (Vice
Chair, 2009; Chair, 2010)

PE REGISTRATION

MA, Civil, 2004

PROJECT ROLE: Traffic

Alan has over 10 years of experience on traffic engineering specializing in the design of intersection improvements preparation and peer review of traffic impact studies.

REPRESENTATIVE RELEVANT EXPERIENCE

Nonantum Road Improvements, Watertown, Newton, Boston, MA. Traffic Engineer responsible for the preparation of the Functional Design Report and Design Exception Report for improvements to Nonantum Road. Nonantum Road corridor forms part of the Charles River Reservation Parkways system and the larger Metropolitan Park System of Greater Boston (Parkways) MPS, both on the National Register of Historic Places.

Highland Avenue Reconstruction, Needham, MA. Lead Traffic Engineer for the design of roadway/intersection improvements on a 3,000 foot section of Highland Avenue. Project includes 3 signalized intersections and requires coordination with the Route 128 Add-a-lane project.

Route 110 Reconstruction, Town of Westford, MA. Traffic Engineer responsible for developing traffic signal improvement plans for the Route 110 corridor from Minot's Corner to Nixon Road. Also responsible for the preparation of the Functional Design Report for the proposed project.

Hanscom Gate Improvements, Bedford, MA. Traffic Engineer for the design of site access improvements in support of security upgrades at the Route 2A/Vandenberg Gate, Hanscom Air Force Base.

I-95 Safety Improvements, North Stonington-Groton, ConnDOT. Assisted in study to assess feasibility of roundabout at Exit 89 southbound off-ramp as an alternative to signalization.

Value Engineering Study, Spaulding Turnpike / Little Bay Bridge Improvements, City of Dover and Town of Newington, NH. For the NHDOT, assisted on a Value Engineering Study for the Spaulding Turnpike / Little Bay Bridge improvements. Project involved replacing the Little Bay Bridge, widening the Spaulding Turnpike, consolidating and reconfiguring five separate interchanges. Traffic Engineer responsible for reviewing and verifying previous analysis results. Also developed and analyzed various alternates.



Technical Assistance/Peer Review, Various Communities.

Prepared a number of peer reviews in various communities around the Commonwealth including, Hopkinton, Natick, Danvers, Berlin, Fitchburg, Norfolk, Auburn, Woburn and Wellesley. For the Town of Natick, reviewed the Natick Mall Expansion project, which consisted of adding 550,000 sf of retail area to the existing mall, in addition to the construction of 220 new residential condominium units. Completed many peer reviews and traffic assessments in the town of Wellesley as part of an on call contract. Three such projects include Peer Review of the Linden Square Shopping Center Redevelopment, Peer Review of various Wellesley College development projects, and the preparation of the Cedar Street Corridor Study.

Lynn Downtown Master Plan, Lynn, Massachusetts

As Senior Project Engineer, responsible for undertaking comprehensive transportation study for downtown area that included an assessment of existing and future traffic conditions, evaluation of existing signal equipment, recommended capacity improvements and analyzed feasibility of changes to traffic circulation.

Town of Grafton Master Plan, Grafton, Massachusetts. As Project Engineer, responsible for preparing comprehensive transportation Master Plan for key intersections in the southern half of the Town. Master Plan involved public participation and included an evaluation of existing and future traffic conditions, and recommended capacity improvements at key intersections.

Downtown Parking Study, Southbridge, Massachusetts. As Project Engineer, undertook Downtown Parking Study that included an analysis of utilization of existing parking facilities, including on-street parking and public and private lots within the downtown area. Identified levels of compliance with existing parking regulations and recommended changes to better utilize parking facilities.

Dudley Square Transportation and Air Quality Study, Boston, MA. As Transportation Engineer, assisted in preparation of the Dudley Square Transportation & Air Quality Study.



WILLIAM C. BEYER, LSP, PG
Principal Hydrogeologist

EDUCATION

M.S., 1980, Geology, University of Montana
A.B., 1975, Earth Sciences, Dartmouth College

PROFESSIONAL REGISTRATION

Licensed Site Professional (LSP), Massachusetts, 1995
Professional Geologist in NH, 2003

PROFESSIONAL AFFILIATIONS

Member:
National Water Well Association
New England Water Works Association
Groundwater Committee

PROJECT ROLE: Hazardous Material Assessment

Bill Beyer has over 30 years of geological and environmental experience in a wide variety of settings. Bill supports various FST departments with environmental investigations specifically designed to meet regulatory requirements, and identify potential hazardous waste problems during the design phase. He has researched State and Federal regulations, ascertained applicable regulatory guidelines, recommended testing procedures, conducted field investigation programs, and determined disposal options.

REPRESENTATIVE RELEVANT EXPERIENCE

Rail Trail Feasibility Study, Acton, MA. Environmental assessment of corridor for contamination from oil and hazardous materials.

South County Bikepath, Narragansett - South Kingstown, for Rhode Island DOT. Completed Initial Site Assessment with subsequent Preliminary Site Investigation along proposed bikepath ROW and in area proposed for wetland mitigation. Additional services included collection and evaluation of soil samples and preparation of a Summary Report. Also evaluated impact of railroad operations and adjacent industrial use in ROW and determined proper remedial actions.

Northwest Bike Trail, RIDOT. Site assessment for over 8 miles of bikepath, involving reuse of abandoned railroad ROW and part new alignment.

South Fork Bikeway, Southamptton – Easthampton, Long Island, NY, NYS DOT and Town of Southamptton, LI, NY. Environmental assessment of project corridor for issues related to contamination from oil and hazardous materials.

Preliminary Environmental Site Assessments: Merrymeeting Lake, New Durham; Sunapee Lake Wild Goose, Newbury; Success Pond, Success; New Hampshire Fish & Game Department. Conducted preliminary site investigation to evaluate potential contamination issues on these properties. Identified contaminated sites within the project areas, research current and historical land use and land owners, performed a site reconnaissance, and advised on noted contaminant issues

Winnisquam Lake Boat Ramp, Laconia, New Hampshire Fish & Game Dept. Reviewed earlier studies, advised on soil contamination issues, planned and implemented a comprehensive investigation of potential soil and groundwater contamination, evaluated contamination issues effect on project construction and redeveloped specifications to utilize during construction to maintain regulatory compliance and protect health, safety and the environment.



Merrill Road Improvements, Pittsfield, MA, MassDOT. Developed specifications for groundwater and soil handling/disposal to coincide with EPA and General Electric protocols.

Route 27 Bridge Replacement, Sharon, MA, MassDOT. Hazardous waste assessment, ISA and PSI.GIS

Route 3 Improvements, Burlington to Tyngsboro, MA, MassDOT. Hazardous waste assessment along 22-mile corridor of Route 3 North from I-95 to NH border. Evaluated abutting land uses; researched State and local records of known or suspected hazardous waste sites, generators, and spills; inspected potential problem areas. Certain areas required further examination, including field investigation. Methods included field screening of soil samples for volatile organic compounds, installation of monitoring wells, sampling of groundwater, laboratory analyses.

As-Needed Environmental Services, MassDOT. Conducted hazardous waste contamination assessment of two parcels along Neponset River, one containing auto repair business; developed remedial action plan as needed; developed demolition specifications for building to allow land to become parkland.

Stormwater Management System, Groton, MA. Evaluated a stormwater management system that relied on a retention/infiltration basin. Bill found flaws in the investigations and design for this system, determined the mounding effects and potential for flooding neighbors' basements, and testified on behalf of the Town.

Power Plant Reuse Feasibility Analysis, New Bedford, MA. A former power plant site was evaluated for possible conversion into an aquarium. The plant had a long history of power generation from coal and oil. Bill evaluated the known review of DEP files, on-site interviews. Compiled information on known issues, discussed potential issues yet to be investigated, estimated costs associated with the conversion and recommended measures to implement and additional investigations.

Former Mill Site Redevelopment Assessment, Fitchburg, MA. A former mill site along the Nashua River has been proposed for redevelopment into a park. To evaluate the desirability to convert this property to that use, Bill performed a preliminary assessment including site reconnaissance, research of historical uses of this site and surrounding area, research into use and disposal of hazardous substances and petroleum products, evaluation of geological and hydrological conditions, and noting sensitive environmental receptors on the site and surrounding area. Bill conducted a follow up soil and groundwater sampling program, evaluated risks presented by the measured contamination and developed recommendations



ELIZABETH BROWNELL, EIT
Engineer

PROJECT ROLE: Structural Engineering

Elizabeth Brownell's work at FST has focused on preparation of contract documents and inspection for a variety of bridges.

REPRESENTATIVE RELEVANT EXPERIENCE

Restoration of Historic Timber Covered Bridge, Hardwick-Ware, MassDOT. Assisted in design of steel plate girders, timber floor-beams and timber decking. Responsible for quantity calculations and special provisions necessary for restoring this historic bridge. Pair of Towne Lattice Trusses carries this single span structure over the Ware River.

Rehabilitation of Hines Memorial Bridge over Merrimack River, Amesbury, MA, MassDOT. Responsible for analysis of 3-span steel stringer bridge with movable center span. Rehabilitation includes replacing the steel superstructure at the center span, as well as replacing concrete deck on approach spans with an exodermic deck in order to increase load carrying capacity.

Statewide Bridge Ratings, MassDOT. Responsible for detailed rating calculations and report writing as well as bridge inspections for various Bridge Ratings across the state. Recent assignments include the rating for Bridge No. C-20-009, a Timber Covered bridge in Conway, and Bridge No. B-17-027 at the former Sagamore Rotary in Bourne. Bridge consists of simple span, prestressed concrete NEBT beams.

I-89 over Plaza Connector Road, Lebanon, NH, NHDOT. Responsible for preliminary design and estimate for a Type, Size, and Location Study in Lebanon, NH. Evaluated three superstructure alternatives: steel beam, precast arch, and prestressed deck beam to determine most cost effective and practical solution.

Bridge Deck Replacement, Bridge No. P-03-024, Peabody, MA, MassDOT. Prepared PS&E documents for this deck replacement project in Peabody, MA.

Central Artery/Tunnel - Logan Airport Interchange, Boston, MA, Massachusetts Port Authority. Inspected deficiencies at elastomeric bearings and sign support bases of prestressed concrete viaduct and prepared reports to present assessments.

Columbus Center, Boston, MA, MassDOT- Transit Division. Designed temporary platform to support equipment used for construction of proposed high-rise building. Evaluated existing beams for proposed construction loads.

EDUCATION

M.S., Structural Engineering,
UMass Lowell, 2008

B.S., Civil Engineering, 2004, Union
College

PROFESSIONAL AFFILIATIONS

Boston Society of Civil Engineers
Section/ASCE



DAVID P. GLENN, P.E.

Principal Engineer

EDUCATION

B.S., 1980, Civil Engineering,
Wentworth Institute of
Technology

A.A.S., 1978, Building Construction
Technology, Wentworth Institute
of Technology

Graduate Study, Civil Engineering,
1982, Worcester Polytechnic
Institute

PROFESSIONAL AFFILIATIONS

Member:

Boston Society of Civil
Engineers/ASCE; Massachusetts
Association of Conservation
Commissions; Massachusetts
Environmental Health
Association

PE REGISTRATION

Civil, MA, 2006

LICENSES

Certified Soil Evaluator, MA, 888
Registered Sanitarian, MA, 1087
Construction Supervisor, MA, 34729
Designer Sewage Disposal Systems,
NH, 01225

PROJECT ROLE: Drainage

David Glenn has over 30 years experience in planning, design, and management of civil and site development activities. He has provided expertise in hydrology, hydraulics, and environmental permitting for a broad array of projects. He has completed design of roadway drainage systems, stormwater best management practices (BMPs) such as detention/flood control basins, water quality swales, infiltration channel designs and low impact development techniques for numerous projects encompassing residential, commercial, and industrial developments.

REPRESENTATIVE RELEVANT EXPERIENCE

Restoration of Cape Cod Rail Trail, MA. Conducted field evaluations of existing culverts along the project length as part of preliminary design phase of this 21-mile trail rehabilitation.

Summer Street (Route 2A) Improvements, Arlington, MA. Drainage design associated with roadway reconstruction for safety and capacity improvements to 2.3-miles of roadway for combined residential and commercial areas.

South County Bikepath, Narragansett to South Kingstown, RI, RIDOT. Completed hydraulics analyses and drainage design. Study involved a pre- and post-watershed analysis for entire facility and assessment of storm drain system and culverts within bicycle right-of-way.

Northwest Bike Trail, Smithfield-Johnston, RIDOT. Hydraulics analyses and drainage for 8-mile bikepath.

Streetscape Improvements, Marblehead, MA. Design of streetscape civil and traffic improvements.

Nonantum Road Improvements, Newton/Watertown/Boston, MA, DCRMA. Responsible for design of stormwater management system and development of stormwater report and supporting materials for environmental permitting with local conservation commissions. Stormwater improvements included Low Impact Development (LID) techniques such as rain gardens, water quality swales and infiltration channels.

Sagamore Rotary Grade Separation, Bourne, MA, MassDOT. Completed hydraulic analyses and drainage design. Study involved pre and post-watershed analysis for the entire project, assessment of drainage facilities and design of Stormwater Best Management (BMP) Practices such as extended detention basins, infiltration systems and water quality swales.



Highland Avenue Reconstruction, Needham, MA. Drainage design and stormwater improvements associated with 3,800 foot roadway reconstruction project. Coordinate stormwater design including BMP's relative to wetland resources and filing with the local Conservation Commission.

Municipal Board of Appeals and Conservation Commission Services. Provided peer review services for compliance with local and State regulations and standard engineering practices for residential and commercial developments as part of comprehensive permit reviews (40B), special permit applications, and/or Wetland Protection Act filings in such communities as Hopkinton, Lynnfield, Woburn, Arlington, Hamilton, Somerset, Upton and Milford. Has provided expert testimony on comprehensive permit and wetland protection act filings.

Engineering Services As Needed, Malden, MA. Designed infrastructure improvements for a number of assignments. Project Engineer for consulting services to City on an as-needed basis. Projects included design of a new connector street and drainage system in the Central Business District in addition to preparing site plans and specifications for park and playground improvement programs. Provided contract administration which included the tabulation and analysis of bid results, recommendations on the awarding of contracts, preparation of project schedules, review and approval of shop drawings, and consultation during various construction phases of individual projects.

Route 3 Roadway Improvements, Concord, NH. Approximately 1.5 miles of roadway widening and resurfacing for safety improvements. Responsibilities included drainage design in accordance with the City of Concord and New Hampshire standards.

Brighton Gardens, Dedham, MA, Marriott Corp. Prepared storm drainage design calculations in support of proposed stormwater management facilities. Facilities included closed piping systems, open treatment swales, wet pond detention basins, constructed wetlands, and infiltration chambers, all in accordance with current DEP stormwater management policy.

Resume - Lamson Engineering Corporation

Name: Mr. Kin C. Lam, P.E.

Title: Principal

Education: M.S., U. of Wisconsin-Madison, Civil (Structural)
M.S., U. of Michigan, Ann Arbor, Civil (Geotechnical)
B.S., National Taiwan University, Civil

Professional Registration: P.E. in Massachusetts & Rhode Island

Experience:

Mr. Lam has over 25 years of experience in a wide range of geotechnical, structural and civil engineering projects. He has managed and designed many projects for Massachusetts Department of Transportation (MassDOT) from the preliminary design through final design to construction. Preparation of reports including those of geotechnical, construction plans, specifications and estimates are part of the design effort. The recent projects he was responsible for included the following:

- MassDOT Design-Build Cedar Street over Route 9, Wellesley Project responsible for boring program development, foundation analysis and geotechnical report preparation (via Gill Engineering Associates).
- MassDOT Design-Build CSX Bridge Bundle Project, responsible for foundation analysis and geotechnical report preparation for Rt. 148 Brookfield Bridge #B-26-003, Rt. 31 Charlton Bridge #C-06-014, Rt. 49 Spencer Bridge #S-23-024, and Rt. 67 West Brookfield Bridge #W-19-015 (via Fay, Spofford, & Thorndike).
- MassDOT Design-Build Lowell Bridge Bundle Project, I-495 northbound and southbound Bridges over Concord River, B&M & Woburn Street, Lowell responsible for foundation analysis and geotechnical report preparation (via AECOM).
- MassDOT Route 2 Concord Rotary project in boring monitoring, foundation analysis and geotechnical report preparation (via AECOM).
- MassDOT Route 128 Add-A-Lane Project, Bridges IV for 7 bridges responsible in boring program development, foundation analysis and geotechnical report preparation (via Louis Berger Group).
- Route 2A Reconstruction Project, Town of Arlington responsible in roadway geotechnical foundation design and recommendations due to previous landfill underneath the existing roadway (via Fay, Spofford, & Thorndike).
- MBTA Fairmont Stations Project for bridges at Columbia Road & Quincy Street in performing temporary earth support structures and retaining walls design (via Jacobs).

Ann M. Marton

Education

University of Massachusetts, Amherst, Massachusetts
Graduate Course Work, Soil Sciences, Fall 1995

Texas A&M University, College Station, Texas
Bachelor of Science, Landscape Architecture, December 1986

Italart International Study Program
Texas A&M University Overseas Study Program, Florence, Italy, 1985

Professional Certifications and Affiliations

Association of Massachusetts Wetland Scientists, Secretary/Treasurer 2001-2005
Massachusetts Association of Conservation Commissions
Society of Wetland Scientists

Professional Experience

LEC Environmental Consultants, Inc. Wakefield, Massachusetts (1994 - present)

President/Director of Ecological Services

Manage and oversee company operations and supervise staff in LEC's Wakefield Office. Project Manager for a range of projects including ecosystem analysis, wetland boundary determinations, Riverfront Area studies, wildlife habitat evaluations, and endangered species studies representing the public, private, and non-profit sector throughout Massachusetts and New England. Consult with project team members regarding project design and regulatory implications, determine land use impacts to wetlands, wildlife, and endangered species, prepare permit and license applications, and provide public presentations for land use projects throughout the northeastern United States. Review stormwater management systems for water quality control, establishment of created wetlands, and evaluate non-point source pollutant impacts to down-stream receiving waters. Provide expert testimony in Middlesex and Norfolk Superior Court, the DEP Adjudicatory Process, and the MA DHCD Housing Appeals Committee. Lectured and instructed seminars on wetland delineation, Riverfront Area, rare species, and environmental permitting in a variety of educational settings including the Rhode Island Real Estate Board, Association of Massachusetts Wetland Scientists, the Massachusetts Association of Conservation Commissions, the Massachusetts Continuing Legal Education, and the Boston Bar Association.

Stanley M. Hunts Associates, Fairfield, Connecticut (1987 - 1994)

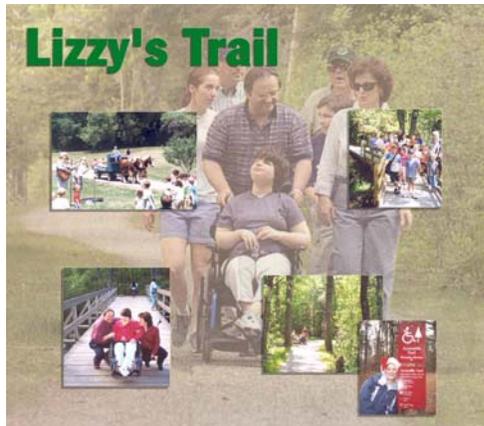
Landscape Architect/ Site Planner

Coordinated site planning and design for large-scale land use projects throughout Westchester, Dutchess, and Orange Counties, New York. Supervised all phases of the design process from conceptual design to completion of the approval process with an emphasis on the protection of cultural and natural resources. Designed mitigating factors for impacts to protectable resource areas such as archaeological sites, steep slopes, wetlands, and endangered plant and animal species. Responsible for compliance with Best Management Standards established in *Controlling Urban Runoff*—calculating the size and requirements for created wetlands for stormwater attenuation. Prepared Environmental Impact Reports in compliance with the *State Environmental Quality Review Act (SEQRA)*; Local, State, and Federal Wetland Applications; and site plans in accordance with local zoning and subdivision requirements.

RELEVANT EXPERIENCE

FST is an established regional leader in the development of shared use paths/trails. At present, the firm has completed or has underway more than 500 miles of recreational trails in various stages of planning, design, and/or construction throughout New England and New York. FST's understanding of the path/trail development process from the initial study phase through design, permitting and construction will provide a major benefit in completing design for Phases 2A and 2C of the Bruce Freeman Rail Trail.

FST's multi-faceted knowledge in traffic planning and design of roadways, bridges, and drainage systems has served our clients well. It enables us to successfully complete shared use trail designs. In addition to design, FST has undertaken feasibility studies for many miles of multi-use trails, addressing such features as alignment/route selection; GIS mapping; civil, structural, hydraulic, and other elements of engineering design; environmental permitting; grant applications; public involvement; and construction phase services. The inter-relationship of these disciplines has contributed to the successful completion of a wide range of projects.



Members of FST's Bike Team are actively involved in development of pedestrian and bicycle facilities as volunteers in their hometowns. They offer their skills to communities and design such facilities as the first wheelchair accessible trail in northeastern Massachusetts or a 10-mile hiking trail through various Town open spaces, as well as organize National Trails Day events to promote these local assets.

To share our enthusiasm for trail development, FST organizes *BikeFest* events, inviting FST employees, clients, friends, and families to join in this event which includes bike rides, a family nature walk led by ecologists, cookout, raffles, and bike and helmet safety checks.



FST BikeFest

In October 2004, FST sponsored its first BikeFest outing on the Nashua River Rail Trail. The event included bike rides, a family nature walk led by a local ecologist, cook-out, raffle, and bike and helmet safety checks. Attendance at the event

RELEVANT EXPERIENCE

included people from the DCR, Friends of Willard Brook State Forest, Bike to the Sea, Inc., Granite State Wheelmen, Friends of the Bruce Freeman Rail Trail, Assabet River Rail Trail Inc., Cochituate Rail Trail, and Framingham Rail Trail Task Force as well as FST employees and their families. Like each BikeFest since, the FST '04 event was initiated and carried out by the Team of people who designed this project.



Our second BikeFest was held in September 2006 to commemorate the completion of the 22-mile Cape Cod Rail Trail. The day was filled with a number of events to show the trails unique characteristics, such as a guided bike tour, facepainting, a geocaching treasure hunt, a nature walk, and rounded out with a cookout. The Rails to Trails Conservancy, DCR, local businesses and FST trail designers were in attendance.

In March 2010, FST's third BikeFest was held on the Old Eastern Marsh Trail in Salisbury to celebrate the trails opening and ribbon cutting. The trail features beautiful views across the Great Marsh and the Merrimack River, as well as abundant wildlife. The Coastal Trail Coalition, the Essex Heritage Commission, and the Salisbury Cultural Council, organizations that funded such elements as trailside interpretive signs and wildflower plantings, organized events. The trail was packed with attendance reaching close to 4,000 people.

Experience with Municipalities

Since our founding, FST has provided a full complement of multidisciplined services to communities throughout the region, including many Massachusetts municipalities. We offer a broad array of services to our municipal clients including sewer, water, drainage, lighting, permitting, roadways, sidewalks, and other infrastructure needs. FST is thoroughly versed in handling a project from the initial planning, site selection, and feasibility studies through preliminary and final design, environmental documentation and permits, and the provision of services during construction.



North Central Pathway
along Green Street in Gardner

The FST design team is qualified to provide all contract documents required to publicly advertise the project in accordance with Massachusetts General Law. FST prepares contract documents as required to be bid under Chapter 30 (for horizontal construction) or Chapter 149 (for vertical construction).

SUMMARY OF FST TRAIL EXPERIENCE

MASSACHUSETTS TRAILS		
		LENGTH
Ashburnham Rail Trail (25% Design)	Ashburnham	1.5
Bruce Freeman Rail Trail Study	Acton	4.6
Bruce Freeman Rail Trail Study	Concord	3.5
Bruce Freeman Rail Trail Study	Sudbury	4.6
Bike to the Sea Trail (Northern Strand)	Malden, Medford, Saugus, Everett, Lynn	9
Border to Boston Rail Trail Study	Danvers – Newburyport	30
Boxford Recreational Trail Study	Boxford	4.3
Cape Cod Rail Trail Bridges	Harwich & Orleans	1
Cape Cod Rail Trail Redesign	Dennis, Harwich, Brewster, Orleans, Eastham, Wellfleet	22
Clipper City Rail Trail (25% Design)	Newburyport	4
Cochituate Rail Trail Study	Natick	2.7
Discover Hamilton Trail	Hamilton	11
Dow Brook Conservation Trail	Ipswich	1
Emerald Necklace Bikepath	Boston	1
Georgetown Recreational Path Study	Georgetown	4.5
Little Bay Bike Loop	Fairhaven	1
Lizzy's Trail	Hamilton	1
Mystic River Trail	Somerville	1
Nashua River Rail Trail	Ayer, Groton, Pepperell, Dunstable	11
Peabody Bikeway	Peabody	6.6
Salisbury Rail Trail	Salisbury	1.4
South Orleans to Orleans Trail Study	Orleans	2.6
Squannacook River Rail Trail Study	Townsend & Groton	3.3
Tri-Community Bikeway	Winchester, Woburn, Stoneham	7
Wakefield-Lynnfield Rail Trail Study	Wakefield & Lynnfield	4.4
Ware River Valley Rail Trail	Ware	3.5
	Subtotal	138
OTHER TRAILS		
East Coast Greenway	Portland – Bangor, ME	128
East Coast Greenway	Portland – Ellsworth, ME	154
I-295 Trail	Portland, ME	1
Long Island Scenic Byway	East Hampton – Montauk, NY	25
Mill River Bicycle & Pedestrian Trail	Stamford, CT	1
Nashua Heritage Trail	Nashua, NH	1.3
Palisades Interstate Park Link	Fort Lee, NJ	3
Quinebaug Five Mile River Trail	Danielson, CT	3.6
Quinebaug River Trail Phase III	Killingly, CT	4
Quinnipiac River Gorge Trail	Meriden, CT	1.5
South County Bikepath	Narragansett – South Kingstown, RI	8
South Fork Bikeway	Southampton – East Hampton, NY	5
Washington Secondary Bike Trail	Warwick, RI	1.5
Woonasquatucket River Greenway / Northwest Bike Trail	Providence, Smithfield, Johnston, RI	32
Veterans Memorial Park	Huntington, NY	4
	Subtotal	373
	Total	511
<i>Shaded projects indicate bike/ped path design projects</i>		

MassDOT Experience

FST has completed numerous bicycle and pedestrian projects for local municipalities where MassDOT design review and project approval was required. Example projects include:

- Old Eastern Marsh Trail, Salisbury
- Tri-Community Bikeway, Stoneham, Winchester, and Woburn
- Ashburnham Rail Trail, Ashburnham
- North Central Pathway (Green Street), Gardner
- Ware River Valley Rail Trail & Covered Bridge, Ware
- Little Bay Bike Loop, Fairhaven
- Bike to the Sea Trail (Northern Strand), Malden, Medford, Saugus, Everett, Lynn

We have also completed projects for the Massachusetts Department of Conservation (DCR) which also required review and approval by MassDOT including:

- Nashua River Rail Trail, Ayer, Groton, Dunstable, and Pepperell
- Cape Cod Rail Trail Bridges, Harwich and Orleans
- Cape Cod Rail Trail Rehabilitation, Dennis, Harwich, Brewster, Orleans, Eastham, Wellfleet
- Nonantum Road and Charles River Reservation Path Improvements, Newton, Watertown, and Boston

FST is highly capable of producing contract documents in accordance with MassDOT design standards and procedures.

VHB has over two decades of experience planning and designing bicycle and pedestrian projects. Representative projects include on-road bicycle networks in both urban and rural settings, greenways and riverwalks, rails to trails, and rails with trails. Long before “context sensitive design” became an industry buzzword, VHB was developing trail projects that preserved each community’s unique identity and heritage while adhering to critical elements of accepted design standards for public safety.

Clients and industry associations have recognized VHB’s innovative and implementable solutions with a variety of awards for their trail projects. These include:

- **Silver Award for Transportation Engineering** in 2007 from the American Council of Engineering Companies (ACEC) New York for the Southampton Bicycle & Pedestrian project
- **American Trails 2004 Corporate Award**, for demonstrating significant, sustained and exemplary service to trail design, planning and implementation
- **Engineering Excellence Honor Award** in 2004 from the ACEC-VT for the Newbury Cross Vermont Trail project, which reunites two sections of bike trail disrupted by 1-91 substructure. The Cross Vermont Trail is a designated National Recreation Trail.
- **Award of Merit** in 2003 from ACEC-VT for the Sheldon Transportation Path and Bridge project

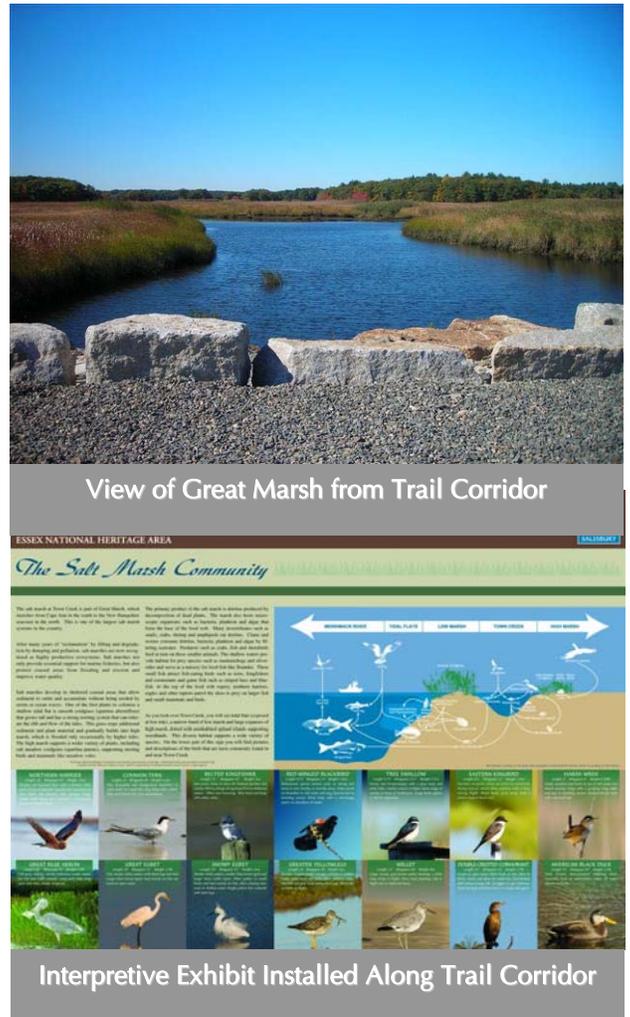
- **National Trails Planning/Design Award**, in 2002 from American Trails, for the Blackstone River Bike Trail project

Included below are descriptions of relevant projects completed by FST and VHB.

Salisbury Rail Trail Design Salisbury, Massachusetts

The Salisbury Rail Trail, also known as the Old Eastern Marsh Trail, extends from the Merrimack River to Mudnock Road in Salisbury. This 1.4-mile segment is an important link in the regional Border to Boston Trail, a proposed 30-mile trail linking eight Essex County communities. The trail begins with a scenic overlook at the Merrimack River and continues north through the picturesque Great Marsh, the largest Salt Marsh in New England.

FST was hired by the Town of Salisbury to design and permit the trail through a MassDOT design review and project approval process. Following the 25% Design submission, construction funding became unexpectedly available on the regional Transportation Improvement Program (TIP). Working with MassDOT and the Town, FST committed to fast track the final design phases to meet the construction advertisement date. FST completed the entire project design within a 12 month timeframe to meet the funding deadline. The Grand Opening Celebration of the trail was a great success and also the location of FST's 2010 Bike Fest. The overall celebration and ribbon cutting was attended by 4,000 of people!



Our efforts focused on developing a design that addressed existing deficiencies, considered site constraints, protected environmental resource areas, and met community design goals.

Design issues incorporated as part of the project include:

- Developing typical cross sections to respond to the varying rail bed width and proximate resource areas;
- Adjusting the vertical profile to create specific high/low points based on drainage patterns and the need to repair existing eroded areas;
- Creating an ADA accessible trailhead parking area and spur trail connection at Friedenfels Road; and

- Identifying opportunities to enhance the corridor through the proper siting of trail amenities including site furnishings, signage, scenic vistas, and landscaping.

In addition, one of the community’s design goals was to highlight the corridor through interpretive elements. These interpretive elements give the trail a unique character and increase people’s appreciation of the corridor’s history and natural resources.

For example, FST researched the artifacts along the old Eastern Railroad and incorporated these features into the design of the trail. An interpretive exhibit about the history of the railroad was installed at the Friedenfels Road trailhead. This exhibit will draw users attention to the existing railroad mile markers along the corridor that will be highlighted through selective trailside clearing. This effort is being coordinated with the Coastal Trail Coalition. Through a grant from the Essex National Heritage Commission, the Coalition designed additional interpretive signs on Merrimack River transportation, Great Marsh wildlife, and historical settlement patterns.



Existing Railroad Mile Marker

Bruce N. Freeman Memorial Bicycle Path Feasibility Study Acton, Massachusetts

The Bruce Freeman Rail Trail is a work in progress. The Framingham & Lowell Railroad right-of-way is being converted into a multipurpose rail trail. The trail is being developed by the communities through which each section passes and with funds directed to each phase.



FST performed a comprehensive Bicycle Path Feasibility Study for a 4.6-mile shared use trail along the state-owned railroad right-of-way. The work involved a field investigation/ analysis of existing conditions, rail trail conceptual design, and development of an implementation plan. FST’s assignment included public presentations and considerable coordination with various committees and agencies.

Cape Cod Rail Trail Rehabilitation Dennis, Harwich, Brewster, Orleans, Eastham and Wellfleet, Massachusetts

The Cape Cod Rail Trail follows a former railroad right-of-way for 22 miles through six communities. This shared use path is a key recreational and transportation resource for residents and visitors alike. Not only is it historically significant as the first rail trail in the nation, it also serves as a major cultural resource and economic engine for local businesses.

Implemented Safety Improvements at
Trail / Roadway Crossings



RELEVANT EXPERIENCE

When it was time to rehabilitate and redesign the 25-year old trail, the Massachusetts Department of Conservation & Recreation (DCR) selected FST. FST set out to upgrade the trail to meet today's design standards for shared-use paths and provide safety improvements. Through some of the most extreme winter weather the Cape has even seen, FST completed the fast track design within 6 months to meet the intensive schedule deadline.

The design included location-specific and corridor-wide improvements including trail widening, intersection treatments, parking lots, signage, fencing, root barrier installation, and vegetative clearing. Also included were landscaping and trail amenities to enhance the overall trail experience.



Located New Scenic Overlook / Rest Area at Namskaket Creek in Orleans

Recognizing the need to balance completing the project in timely manner and the mobility and economic impact construction would have upon the communities, FST developed a two-phase construction sequencing plan to minimize these effects.

...FST did an exemplary job of redesigning the Cape Cod Rail trail. Their work displayed innovation as well as engineering skill. The Rail Trail's approaches to roadway crossings were engineered with slight curves to encourage lower bicycle speeds and to shorten crossing distances. Textured brick divisional islands were built to guide bicyclists around bollards and provide additional visual cues of approaching streets. Root barriers were installed to improve the durability and extend the life of new pavement.

Robert L. Mumford, Transportation Program Manager, Cape Cod Commission



Installed Mile Markers for User Safety and Emergency Response Actions



Installed Root Barrier to Prevent Root Damage to Trail Surface

Blackstone River Bikeway, Segment 1 Millville and Blackstone, Massachusetts

The Massachusetts DCR chose a team led by **VHB** to design Segment 1 of the Blackstone River Bikeway. Segment 1 of the Blackstone River Bikeway is a 2.5-mile multiuse trail from the Rhode Island border to the Triad Bridge in Millville. The project travels through a mix of downtown areas and natural settings and includes twelve bridges, a tunnel, and several trailhead/parking areas. The bikeway is being designed to take advantage of existing features, such as natural views, historic locations, and railroad infrastructure. Several alternatives to connect to the planned Rhode Island section of the Blackstone River Bikeway are under consideration.



To meet schedule and budget requirements, VHB is collaborating with **FST** to form a team whose combined skills and capacity will deliver a quality design that meets schedule and budget requirements. This team is creating a design that maximizes available funding and focuses on constructability.

Nashua River Rail Trail Ayer, Groton, Pepperell and Dunstable, Massachusetts

This 11-mile Trail is located in a former railroad right-of-way. Designed by **FST** for the Massachusetts DCR, the trail offers a 10-ft wide paved surface for its full length, and a 5-ft wide gravel equestrian path for seven miles from Groton Center to the New Hampshire border in Dunstable. In Dunstable, the trail links to an extension over the MA/NH border to connect users with downtown Nashua and Mine Falls Park.



Seating Area Overlooking Nashua River

The trail traverses a varied landscape, offering numerous scenic overlooks, opportunities to see wildlife and several resting stops. The spectacular vistas include the Nashua River, Mt. Wachusett, Mt. Monadnock, farms, and wetlands. These areas were enhanced with selective clearing and scenic overlooks. The trail is particularly attractive during fall foliage season. The trail passes through the J. Harry Rich State Forest and numerous wetlands and wildlife habitats. Ecologically sensitive areas are delineated with wooden fencing and signage to discourage users from leaving the trail.



Trail Over Rehabilitated Railroad Structure

RELEVANT EXPERIENCE

The Ayer trailhead offers users access to the MBTA commuter rail service between Boston and Fitchburg. The trailhead restrooms are self-sufficient; featuring solar powered exhaust and a recycling composting septic system.

The smooth asphalt and flat terrain attracts a wide range of users. There are long stretches with no roadway crossings and where crossings occur, they are clearly marked with new signage for both trail users and motor vehicles. Two concrete box culvert underpasses were constructed where the corridor once passed beneath local roadways via corrugated metal pipes, thereby improving the viewshed and safety of trail users.



BEFORE

Corridor Eroded from Dirt Bike and ATV Use



AFTER

Corridor Following Trail Construction

Bike to the Sea (The Northern Strand) Malden, Medford, Saugus, Everett & Lynn, MA



A group of cyclists in Malden proposed this rail-with-trail facility from the center of Malden through Everett to Revere Beach and FST was selected to implement the project. As construction of the Everett section nears a portion of the Malden section of the trail, a name for the new facility was needed. The trail encompasses so many wonderful ideas, landforms, and communities it was difficult to come up with one. Finally, The Northern Strand was chosen.



FST planned the final route for the 9-mile trail traversing five communities. The firm evaluated wetlands, floodprone areas, the location of utilities, adjacent land uses, property ownership, user safety, and construction costs of alternative alignments. Meeting with area residents and abutters assisted in achieving consensus and developing a facility responsive to users' needs.

RELEVANT EXPERIENCE

Among design issues are various aspects of stormwater management including maintaining existing swales and drainage patterns, allowing rainwater to percolate into the soil, avoiding point source discharges, and meeting Stormwater Management Guidelines.

With several at-grade crossings, user safety is a top priority. Signs, pavement markings, access gates, and removable bollards better define the interaction at road crossings and ensure ample trail visibility for motor vehicles. Signage highlights trail access points, destinations, and rest areas.

A number of railroad structures exist along the route. Some will be removed, cleaned and reset. In other instances, structures may be retained and relocated along the trail to preserve a sense of railroad history.

Bruce Freeman Rail Trail Concord, Massachusetts

The Town of Concord and the Bruce Freeman Rail Trail Advisory Committee selected **VHB** to provide preliminary design services to transform a 3.5-mile section of the former Lowell



Secondary Track Corridor of the Old Colony Railroad into a multi-use path/trail. The project area is the Concord portion of the Bruce Freeman Rail Trail, a 20+ mile trail from Lowell to Framingham named for former state representative Bruce Freeman who had the vision of turning the unused rail line into a trail for recreational activities and an off-road transportation corridor. VHB is leading a team to provide field survey, public outreach and participation, preliminary trail layout, environmental assessment and documentation, landscape design,

bridge design, and historic resources for the project.

The trail will extend from Route 2 at the Acton Town Line along the abandoned rail corridor and over Nashoba Brook in two locations, by Warner's Pond, through the West Concord Commuter Rail Station and the West Concord Business District, across the active commuter rail line, over the Assabet River past Jennie Dugan Swamp and White Pond to the Sudbury Town line. The town's vision for its portion of the trail is to provide a context-sensitive recreational corridor for the West Concord community that will not adversely affect the local environmental resource areas, the wildlife habitat, and abutting landowners.

VHB and the advisory committee held seven community outreach meetings with local residents to introduce the key design elements and project issues associated with the rail corridor and to solicit input from the residents as to their concerns and project vision for the multi-use trail. The public outreach process involved VHB making presentations at each meeting and launching a project website to help answer frequently asked questions and to

obtain comments from residents on a variety of topics. The meetings focused on design criteria, surface treatments, bridge rehabilitation options, people management, landscape treatments, historic resources, design concerns, trail alignment options, liability, and environmental permitting.

The preliminary trail design plans, estimate, and report will be developed with respect to public consensus, environmental resources, abutting property, and state and local standards.

Bruce Freeman Rail Trail Environmental & Engineering Assessment Sudbury, MA

FST was selected to provide an Environmental and Engineering Assessment for a 4.4-mile section of the Bruce Freeman Rail Trail in Sudbury. The goal of the Assessment was to study the feasibility of converting the former railroad corridor, now managed by the State, into a shared use path.

FST evaluated and documented the potential project impacts, required environmental clearances, right of way related issues and construction costs. We also identified means and ways to mitigate project impacts upon resources areas and abutting property based on our experience on similar projects.



The input received from the Committee and citizens at the public kick-off meeting highlighted the Town's desire for a contextually appropriate rail trail that complemented the varying commercial, residential and natural areas along the project corridor. Therefore, FST documented various design options for the Town to consider relative to the trail surface material and intersection design treatments.

Other items studied as part of the Assessment included:

- Environmental screening for wetland & water resources, cultural & historic resources, and hazardous materials
- Connections to abutting recreation and conservation land
- Potential trailhead parking areas
- Two proposed bike/pedestrian bridges



Based on the issues identified as part of the Assessment, the Town is currently pursuing additional Post-Assessment tasks including an existing conditions survey, wetland delineation, wildlife habitat study, and deed review.

Tri-Community Bikeway Woburn, Winchester, Stoneham, MA

FST is handling design of the Tri-Community Bikeway for the Towns of Winchester and Stoneham and the City of Woburn. This project involves converting an abandoned railroad right of way which links Stoneham, Winchester and Woburn through 6.6 miles of continuous railbed into a pedestrian/bikeway and linear park for the benefit of the general public. It will provide a direct connection to the public transportation system creating a pathway linking bus stops in Woburn and train stations in Winchester and eventually hook-up to the Alewife MBTA stop through the Minuteman Bikeway. It is strategically located to serve as a component to a number of proposed bikeways and will enhance a multi-regional bikeway/pedestrian and public transportation system.



The trail also serves purely recreational needs, for bicyclists, walkers, joggers, rollerbladers, and others and opens areas of riverfront for public enjoyment.



The goal is to respect each town's separate identity yet provide unified design. The Stoneham section is urban. The trail passes through several industrial backyards where the right-of-way abuts parking or buildings. In the Winchester section (and to some extent, Woburn), design takes advantage of wetland, pond, and marsh areas, as well as extending the Aberjona River greenway north to link parks, schools, and residential areas. Rest areas and vista opportunities are abundant;

there are many natural and manmade points of interest.

Blackstone River Bikeway Planning and Design Blackstone River Valley, Rhode Island

The Blackstone River Bikeway, currently under construction in Rhode Island, is a 17-mile scenic multi-use trail through historic urban areas. Ultimately, it will extend 48 miles between Providence and Worcester, linking many of the Blackstone Valley's significant historic features.



Under contract to the Rhode Island DOT, **VHB** developed innovative plans for creating the bikeway over the course of the project, which began in 1993. The bikeway traverses varied terrains including through sensitive wetlands on a boardwalk, through urban and industrial areas, along an active railroad,

RELEVANT EXPERIENCE

and across a dam. Other challenges included the mitigation of contaminated soils on EPA Superfund sites. An active railroad required design of rail grade crossings. VHB's experience in context-sensitive design enabled the construction of bikeway segments on the original historic 1830 Blackstone Canal towpath and through historic mill districts. VHB professionals



served as technical guides, successfully bringing the design through substantive technical reviews and right-of-way coordination to achieve consensus from RIDOT, RIDEM, the National Park Service, and several state and federal agencies. VHB also participated in the permitting, design, and construction of the bikeway.

The project is an integral feature of the Blackstone River Valley National Heritage Corridor under the auspices of the National Park Service. In 2002, the project was awarded the American Trails National Planning and Design Award.

Cape Cod Rail Trail Bridges Harwich & Orleans, Massachusetts

FST designed new bicycle facilities to improve the Cape's extensive rail trail network. The focus was two new bridges across US Route 6, to restore some of the original railroad right-of-way to active transportation and recreational use, while improving the safety of users.



Originally, provisions were not made for the trail to cross the very busy Route 6. Users of the trail had to divert from the original right-of-way to the local street system and through surrounding neighborhoods, following a circuitous route. Some users risked their safety by illegally crossing Route 6 at ground level.



In Harwich, trail patrons no longer need divert at the Route 124 interchange with its heavy traffic. The new bridge crosses Route 6 and opens a 1,500-ft segment of the former railroad right-of-way. In Orleans, there was a very roundabout travel route for bikers near the rotary. Here, a new bridge across U.S. Route 6 is located at the same point where the railroad once crossed it at grade.

In all, the project was a key step in restoring two vital segments of an immensely popular recreational trail while providing much-needed safety enhancements.

MassDOT APPROVED PROJECTS

John Hendrickson, assigned as Project Manager for this contract, has worked on MassDOT projects for over 25 years. He has progressed from a design engineer to a Project Engineer to a MassDOT-trusted Project Manager. In addition to the many municipal roadway/bridge/bikeway projects John has been involved with, following is a list of John's MassDOT projects within the last five years where FST's design fee is over \$750,000.

John has served as Project Manager on all of the following MassDOT projects:

MassDOT Highway Noise Barrier Design

The scope of services under this contract involves acoustical and engineering services for preliminary design of noise barriers in Wellesley (I-95), Fall River (I-95) and Medford (I-93). Work includes data collection; development of noise data; performance and documentation of an acoustical study; public participation; preliminary design; meetings and liaison; and project management.

Project Fee: \$1,167,752

Reference:

E. Ryan McNeill, Project Manager

MassDOT-Highway Division

617.973.7446

MassDOT Statewide Contract - Engineering Design, Review, and Construction Management Services

Several projects have been awarded under this \$5 million on-call services contract which involves diverse bridge and roadway services on a statewide basis. Under this contract, John is currently overseeing the Bay Street Bridge Replacement and Morey's Dam Replacement in Taunton.

Project Fee: \$871,374

Reference:

Manny Patel, P.E., Project Manager

Accelerated Bridge Program

MassDOT Highway Division

617-973-7217

Border to Boston Trail

MassDOT and the Merrimack Valley Planning Commission (MVPC) in conjunction with the Towns of Boxford, Georgetown, Newbury and Salisbury, plan to construct a shared use, non-motorized trail from the Boxford/Topsfield Town line to the Salisbury/New Hampshire State line. This trail will utilize existing rail beds and utility right of way as well as local roadways to provide a bikeway spanning the approximately 19-mile route between Boxford

and Salisbury. Survey and wetland flagging have begun. We are awaiting the notice to proceed from MassDOT which we anticipate will be in the next two months.

Project Fee: \$910,000

Reference:

Shawn Holland
MassDOT-Highway Division
617,973,742

Marston Street Interchange, Lawrence - North Andover

This \$32 million project involved preliminary and final design for safety and access improvements for the I- 495/Marston Street interchange. Work included four new ramps, two new bridges, two widened bridges, intersection improvements with new signalization, acceleration/deceleration lane modifications, shoulder widening, pavement markings, signing, wetland replication, and permits. Construction engineering services ended 2007.

Project Fee: \$3,509,870

Reference:

Marie Rose, Director of Project Development
MassDOT _ Highway Division
617-973-7427

VHB, Inc.

Patricia Domigan, P.E. has worked on MassDOT projects and projects requiring MassDOT design approval for more than 20 years. These project have ranged from trail designs to major highway corridor improvements. Following is a list of her MassDOT and MassDOT-approved projects within the last five years where VHB's design fee is over \$750,000.

Trish has served as Project Manager on all of the following MassDOT projects:

Blackstone Bikeway Phase 1

Project involves engineering, design and permitting services for the Blackstone River Bikeway Segment 1, leading a team of VHB and FST bike path professionals. Segment 1 of the Blackstone River Bikeway is a 2.5-mile multiuse trail from the Rhode Island border to the Triad Bridge in Millville. The project travels through a mix of downtown and undeveloped areas and includes twelve bridges, a tunnel, and several trailhead/parking areas.

Project Fee: \$850,000

Reference:

Dan Driscoll, Department of Conservation & Recreation (DCR)
251 Causeway Street, Boston, MA
617.626.1428

Lowell-Hamilton Canal District

The City of Lowell is planning the development of the Jackson/Appleton/Middlesex Urban Revitalization and Development District and the Hamilton Canal District. VHB is providing a wide array of services including: historical/cultural resources research; signalization, highway, and structural design; geotechnical and site/utilities inspection; construction, survey; landscape architecture; and permitting. The work includes obtaining and reviewing latest bridge plans and inspections for MassDOT-owned bridges.

Project Fee: \$3,000,000

Reference:

Adam Baacke

City of Lowell, Division of Planning and Development
978.446.7200

Middlesex Turnpike Transportation Improvements Bedford, Burlington and Billerica, MA

Project involved design and land acquisitions for the 4-mile corridor that extends from Route 62 in Burlington to Manning Road in Billerica. The effort included the completion of construction documents, in accordance to MassDOT standards and policies, the negotiation of land takings for 65 parcels adjacent to the project, the oversight of a hydrologic analysis for the Shawsheen River, managing the environmental permitting process, including the preparation of a variance of the Wetland Protection Act, public presentation, and public and agency coordination.

Project Fee: \$2,670,000

Reference:

Richard Warrington

Town of Bedford, Department of Public Works
781.275.7605

Route 3 Transportation Improvement, Burlington, Bedford, Billerica, Chelmsford, Lowell, Westford, and Tyngsboro, MA

The efforts undertaken by VHB included the design of traffic management through construction, traffic signal design, pavement design, traffic demand management, intelligent transportation system design for MassDOT's first design-build project. VHB also supported the project with environmental permitting, noise analysis and presentations, traffic operations, field reconnaissance, and drafting

Project Fee: \$3 million+

Reference:

Mark Shamon

URS Corporation
978.589.1601

TEAM CAPACITY AND WORKLOAD

FST and VHB are two of the region's leading firms in the arena of bike trail planning and design, and can both point to very successful efforts in design of bikepaths equal to or greater in size to Phases 2A and 2C of the Bruce Freeman Rail Trail. In addition, both firms have been responsible for planning and design roles on adjacent sections of the trail, and very much look forward to working with the Towns of Acton, Carlisle, Concord and Westford to ensure successful design of this section. FST and VHB are two of the area's largest engineering firms with large, multidisciplined staffs, including transportation staff dedicated solely to bike trail planning and design. John Hendrickson, P.E., FST Project Manager, and Patricia Domigan, P.E. who will lead VHB's efforts on this project, will both be able to call on the full resources available from their two firms to meet any project requirements that arise during the course of the work

Currently, our proposed Project Manager John Hendrickson has the following project related commitments;

MassDOT Border to Boston Trail – Survey and wetland delineation underway
MassDOT/Town of Winchester Tri-Community Trail – 75% anticipated spring 2011.
MassDOT Bay Street Bridge – 75% anticipated January 2011
MassDOT Noise Barrier Project – 25% anticipated December 2010

One of the strongest advantages offered by the FST team is the depth of staff available locally to complete this project. FST will manage this project from our Burlington headquarters, with assistance from staff in our Boston office. All our team members are located within an hour's drive from MassDOT's headquarters and FST's Burlington office, and within an easy drive to the project site, and are available to attend project meetings and/or site visits in a timely and efficient manner.

We consider this design assignment as major commitments for our two firms' bike teams, and are committed to devoting the time and resources necessary to see through the project through to a successful completion, on time and within budget.

MBE/WBE PARTICIPATION

FST's project team includes Lamson Engineering Corporation, a SOMWBA-certified MBE, and LEC Environmental, Inc., a SOMWBA-certified WBE. Lamson Engineering will be responsible for geotechnical engineering and bridge foundation design. We have worked with Lamson Engineering on numerous projects and are currently working with them on the Blackstone River Bikeway and the Mystic River Recreation Trail in Somerville. LEC Environmental will handle environmental studies and permitting. From the 22-mile Cape Cod Rail Trail to the 1-mile Lizzy's Trail in Hamilton, LEC has teamed with us on most of our trail projects. Their expertise in MassDOT related projects has helped keep these projects on schedule. Lamson Engineering and LEC Environmental levels of participation will meet or exceed the MBE/WBE participation levels established for this project.



Deval L. Patrick, Governor
 Timothy P. Murray, Lt. Governor
 Jeffrey B. Mullan, Secretary & CEO
 Luisa Paiewonsky, Administrator



Architects and Engineers Review Board - Prequalification

Effective: October 15, 2010

Expires: October 14, 2012

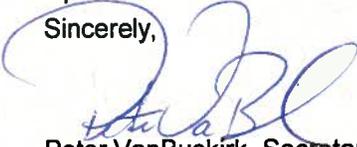
Fay, Spofford & Thorndike, LLC
 5 Burlington Woods
 Burlington MA 01803

You are Prequalified in the following Disciplines:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Environmental Studies | <input type="checkbox"/> Landscape Architecture |
| <input checked="" type="checkbox"/> Basic Roadway Design | <input type="checkbox"/> Photogrammetry |
| <input checked="" type="checkbox"/> Intermediate Roadway Design | <input checked="" type="checkbox"/> Intelligent Transportation System |
| <input checked="" type="checkbox"/> Complex Roadway Design | <input type="checkbox"/> Transit and Rail Systems Design |
| <input checked="" type="checkbox"/> Basic Bridge Design/Ratin | <input type="checkbox"/> Materials Inspection and Testin |
| <input checked="" type="checkbox"/> Intermediate Bridge Design/Ratin | <input type="checkbox"/> Cultural Resources |
| <input checked="" type="checkbox"/> Complex Bridge Design/Ratin | <input checked="" type="checkbox"/> Hazardous Waste - Site Investigation and Assessment |
| <input checked="" type="checkbox"/> Bridge Inspection | <input checked="" type="checkbox"/> Hazardous Waste - Remediatio |
| <input type="checkbox"/> Moveable Bridge Design/Ratin | <input type="checkbox"/> Wetlands - Delineation and Assessmen |
| <input type="checkbox"/> Moveable Bridge Inspection | <input type="checkbox"/> Wetlands - Mitigation |
| <input checked="" type="checkbox"/> Traffic Operations Studies & Design | <input checked="" type="checkbox"/> Water Quality - Assessment |
| <input type="checkbox"/> Geotechnical Engineering Including Soils & Foundation Studies | <input checked="" type="checkbox"/> Water Quality - Mitigation |
| <input checked="" type="checkbox"/> Construction Contracts Assistance | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Hydraulics and Hydrology | <input checked="" type="checkbox"/> Noise Studies |
| <input checked="" type="checkbox"/> Transportation Planning | <input type="checkbox"/> Ecology |
| <input type="checkbox"/> Architectur | |

MassDOT will retain this rating on its list of prequalified firms until the Expiration Date shown above. Your firm is required to submit a new or updated ADM-016 Form on or before the Expiration Date if you wish to continue to be considered for new services by the Department. Revised ADM-016 Forms may also be submitted at any time prior to the Expiration Date. **Failure to furnish an updated ADM-016 Form prior to the Expiration Date will result in your firm being removed from the Department's approved list.** This will disqualify you from being selected for new services by the Department until an updated form is submitted and the A&E Board has issued a new rating.

Sincerely,


 Peter VanBuskirk, Secretary
 Architects & Engineers Review Board

Ten Park Plaza, Suite 4160, Boston, MA 02116
 Tel: 617-973-7000, TDD: 617-973-7306
 www.mass.gov/massdot



DEVAL L. PATRICK
GOVERNOR
TIMOTHY P. MURRAY
LT. GOVERNOR
JEFFREY B. MULLAN
SECRETARY & CEO
LUISA PAJEWONSKY
DIVISION ADMINISTRATOR



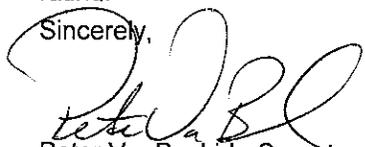
Architects and Engineers Review Board - Prequalification
Effective: April 16, 2010
Expires: April 15, 2012

Vanasse Hangen Brustlin, Incorporated
101 Walnut Street, P O Box 9151
Watertown MA 02472

Your Firm is Prequalified in the following Disciplines:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Environmental Studies | <input checked="" type="checkbox"/> Landscape Architecture |
| <input checked="" type="checkbox"/> Basic Roadway Design | <input type="checkbox"/> Photogrammetry |
| <input checked="" type="checkbox"/> Intermediate Roadway Design | <input checked="" type="checkbox"/> Intelligent Transportation Systems |
| <input checked="" type="checkbox"/> Complex Roadway Design | <input checked="" type="checkbox"/> Transit and Rail Systems Design |
| <input checked="" type="checkbox"/> Basic Bridge Design/Rating | <input checked="" type="checkbox"/> Materials Inspection and Testing |
| <input checked="" type="checkbox"/> Intermediate Bridge Design/Rating | <input checked="" type="checkbox"/> Cultural Resources |
| <input checked="" type="checkbox"/> Complex Bridge Design/Rating | <input checked="" type="checkbox"/> Hazardous Waste - Site Investigation and Assessment |
| <input type="checkbox"/> Bridge Inspection | <input checked="" type="checkbox"/> Hazardous Waste - Remediation |
| <input type="checkbox"/> Moveable Bridge Design/Rating | <input checked="" type="checkbox"/> Wetlands - Delineation and Assessment |
| <input type="checkbox"/> Moveable Bridge Inspection | <input checked="" type="checkbox"/> Wetlands - Mitigation |
| <input checked="" type="checkbox"/> Traffic Operations Studies & Design | <input checked="" type="checkbox"/> Water Quality - Assessment |
| <input type="checkbox"/> Geotechnical Engineering Including Soils & Foundation Studies | <input checked="" type="checkbox"/> Water Quality - Mitigation |
| <input checked="" type="checkbox"/> Construction Contracts Assistance | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Hydraulics and Hydrology | <input checked="" type="checkbox"/> Noise Studies |
| <input checked="" type="checkbox"/> Transportation Planning | <input checked="" type="checkbox"/> Ecology |
| <input type="checkbox"/> Architecture | |

MassHighway will retain this rating on its list of prequalified firms until the Expiration Date shown above. Your firm is required to submit a new or updated ADM-016 Form on or before the Expiration Date if you wish to continue to be considered for new services by the Department. Revised ADM-016 Forms may also be submitted at any time prior to the Expiration Date. Failure to furnish an updated ADM-016 Form prior to the Expiration Date will result in your firm being removed from the Department's approved list. This will disqualify your firm from being selected for new services by the Department until an updated form is submitted and the AE Board issues a new rating.

Sincerely,

Peter VanBuskirk, Secretary
Architects & Engineers Review Board

CERTIFICATE OF NON-COLLUSION

The undersigned hereby certifies under the penalties of perjury that this bid, proposal, or submission has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certificate, the word person shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

William J. Reed

Signature of person signing the bid, proposal, or submission

Fay, Spofford & Thorndike, LLC

Name of business

CERTIFICATE OF TAX COMPLIANCE

Pursuant to Ch.62C, S.49A (b) of the Massachusetts General Laws, I,

William J. Reed

(Name)

, authorized signatory for

Fay, Spofford & Thorndike

(Name of Consultant)

, do hereby certify under the pains and penalties of perjury

that said contractor has complied with all laws of the Commonwealth of Massachusetts relating to taxes.

Consultant, By:

William J. Reed

(Signature of authorized representative)

Senior Vice President

(Title)

November 8, 2010

(Date)