

Technical Proposal • June 23, 2016

Bicycle and Pedestrian Scoping Study



DuBois
& King^{inc.}

Submitted to:
Dean Bloch, Town Administrator
PO Box 119, 159 Ferry Road
Charlotte, Vermont 05445



623494X
June 23, 2016

Dean Bloch, Town Administrator
PO Box 119
159 Ferry Road
Charlotte, VT 05445

Subject: Proposal - Bicycle and Pedestrian Scoping Study

Dear Mr. Bloch:

DuBois & King (D&K) is pleased to submit a proposal to prepare a Bicycle and Pedestrian Scoping Study to support the extension of the Charlotte Town Trail. Our team includes planners, landscape designers, and engineers who have significant experience in preparing similar studies and in designing multi-use paths and other multimodal facilities.

D&K recently completed pedestrian and/or bicycle scoping studies for St. Johnsbury, Essex, Rochester, West Hartford, Cabot, East Montpelier, Wilmington, Hinesburg, Huntington, Berlin, and, of course, Charlotte. We have a thorough understanding of the pedestrian and bicycle needs for rural Vermont towns and the steps involved in efficiently completing a study under the MAB process.

I will serve as Project Manager and as the main point of contact. I am very familiar with Charlotte, as I have developed studies for the CCRPC, including the Route 7 Crossing Study, a Ferry Road Pedestrian Access and Stormwater Management Feasibility Study, and the ongoing Park-and-Ride Feasibility Study. These studies generally addressed safety for pedestrians and bicyclists, and included traffic, environmental and wetlands impacts considerations.

Supporting me on this project team will be Landscape Planner Sophie Sauvé, who is currently working with me on the Park-and-Ride study in Charlotte. Wetlands Scientist Charlotte Brodie will provide wetlands delineation; Transportation Engineer John Merrifield will be the project engineer for the path design; John Benson will utilize his 40 years of experience to review the permitting requirements of the project and Structural Engineer Pete Bero will evaluate any bridges, culverts, or raised walkways, as required. Hartgen will assess the archeological and historical resources.

On behalf of our team, we appreciate your consideration of our proposal and look forward to the opportunity to work with the Town of Charlotte to ensure the successful development of this important transportation link. If you have any questions, or require additional information, please do not hesitate to contact me at 802-728-3376 or lgibson@dubois-king.com.

Sincerely,
DuBois & King, Inc.

Lucy Gibson, PE
Project Manager



Introduction

The Town of Charlotte is soliciting proposals from qualified consultants for a Bicycle and Pedestrian Scoping Study that will identify safe, feasible, and affordable improvements and any associated issues arising with planning and connecting the completed portions of the Charlotte Town Link Trail to two key destinations: Mount Philo State Park (to the southeast) and the west Charlotte Village (to the north). The two portions of the trail that are complete and in use are the Melissa and Trevor Mack Section and the Co-Housing Section. The scoping study aims to connect the Melissa and Trevor Mack Section on the east side of Route 7 at its southeasterly end to Mount Philo State Park along State Park Road and the Co-Housing Section northward to west Charlotte Village via a new multi-use path that runs mainly parallel to Thorp Brook. An underpass under Route 7 is scheduled to be completed in 2017, which would join the two sections for a total of six miles of trails. An additional mile of trail would fulfill the current vision for the Charlotte Town Link Trail and connect Mt. Philo State Park to Charlotte Beach/ Lake Champlain.

Building a multi-use trail connecting east and west Charlotte and the Beach to the Park will provide an invaluable recreational asset for visitors and residents alike within the heart of Charlotte.

The Charlotte Town Link Trail has been developing steadily for several years under the leadership of the Charlotte Trails Committee. The Co-Housing Section was completed most recently, in the fall of 2014 (with repairs in 2015), and the underpass project has been slated for construction for several years but now aimed to be completed in 2017. Building a multi-use trail connecting east and west Charlotte and the Beach to the Park will provide not only an invaluable recreational asset for visitors and residents alike, but also an alternative route connecting and orienting users to key destinations and resources within the heart of Charlotte. Not all trails can boast access to water, to a downtown, to vineyards, berry farms, ball fields and a state park along one route. The Charlotte Town Link Trail captures key elements of the area while linking users to nature.

Currently, the two portions of the trail that are complete leave visitors wanting more. Trail users to the south can walk from Melissa and Trevor Mack Trail to Mount Philo along State Park Road, but walking along the road does not have the same comfort, nor safety, as the envisioned multi-use trail. For the Co-Housing Section of the Trail, it's currently disconnected from the center of town and would benefit Charlotte as a whole to reach town amenities to the north. Providing a trail accessible to cyclists, pedestrians and cross-country skiers will not only be an environmentally friendly alternative mode of transportation, but also capitalize on the views of the landscape and the wealth of touchstones along the way as a source of entertainment and healthy exercise.



The Melissa and Trevor Mack Trail currently ends at State Park Road.

The Scoping Study will identify options, issues, and costs associated with the construction of safe bicycle and pedestrian facilities and crossings along the way. It will also provide design recommendations and an implementation strategy to complete these two key areas of the trail. The project could potentially include trails and/or a multi-use path, bridges, boardwalks, signage and parking.

DuBois & King (D&K) has expertise in transforming visions into buildable projects that safely serve several modes of transportation. Project Manager Lucy Gibson has extensive experience developing innovative, context-sensitive designs that could be applied to the trail, and the public engagement skills to keep the public informed



and build increasing support for the project. This breadth of expertise is an ideal combination to meet the challenges of this study.

D&K staff members have extensive experience working directly with VTrans and with a variety of VTrans funded programs. The Town of Charlotte Bicycle and Pedestrian Scoping Study is funded through the Vermont Bicycle and Pedestrian Program, requiring the Town to follow the process outlined in the VTrans 2014 Municipal Assistance Bureau Local Projects Guidebook for Locally Managed Projects (2014 Guidebook). Specifically, the study will need to include the components in VTrans' Recommended Outline for a Bicycle and Pedestrian Scoping Study. DuBois & King has served as the consultant on numerous similar projects, including bicycle and pedestrian scoping and design efforts in Rochester, West Hartford, Cabot, Berlin, Hyde Park, Huntington, Killington, Wilmington, Barre, Moretown, Westfield, Lowell, Northfield, Shelburne, Williston, Williamstown, Thetford, Brighton, St. Johnsbury, Hardwick, Colchester, Essex, East Montpelier, Plainfield, and numerous other communities. Our extensive experience on similar projects ensures that D&K fully understands the requirements of this project.

Understanding of the Scope of Work

D&K staff is very familiar with the project area from our work on several Chittenden County Regional Planning Commission's Technical Assistance Programs in Charlotte. These include: the Charlotte/US 7 Park and Ride Scoping Study (ongoing), the Ferry Road/Us 7 Pedestrian Crossing Feasibility Study and the Ferry Road Sidewalk and Stormwater Feasibility Study. We recently visited the project area to observe the conditions for bicyclists and pedestrians on the existing portions of the Charlotte Town Trail. We have conducted a preliminary review of the environmental constraints in the area and how the trail has developed to date. We have conducted research on traffic volumes and accident history of the area, which gives us further insight into conditions and challenges in the area. Among the challenges and opportunities to consider in this study are:



Currently, trail users can walk along State Park Road to Mount Philo, but the walk is not as safe as a multi-use trail would be.

Safety Concerns along State Park Road. State Park Road is narrow and has little to no shoulders for pedestrians or cyclists to navigate between the existing Melissa and Trevor Mack Trail and Mount Philo State Park. While this may not be a concern for short spans of road that are not main arterials, this is a long distance to travel by foot alongside traveling vehicles. Having a bike/ped facility along this road would provide the safety and comfort for trail users to go beyond and into Mount Philo, and likewise encourage newcomers in the area to visit Mount Philo, to venture towards other parts of Charlotte rather than solely their planned destination.

Environmental Constraints. The outlined proposed path for the scoping study traverses several different land uses in Charlotte. Whether through agricultural fields, rural residential land, forest, over water bodies or along gravel or paved roads, the current alignment of the trail boasts a variety of ecosystems to be enjoyed. With the variety also comes responsibility to tread lightly on the land and to be able to select the best materials and most responsible directions to take while the path is formally laid out. Charlotte's significant wildlife habitat map identifies





linkage habitat covering a significant portion of the proposed Co-Housing to west Charlotte Village alignment, as well as aquatic and forest habitat. Similarly, the proposed alignment along State Park Road leading from the Melissa and Trevor Mack Trail to Mount Philo, is laced with significant aquatic and forest habitat. Wetlands and other sensitive areas need to be carefully delineated and respected, as do landowner requests. Proximity to Lake Champlain means that any reduction of vegetation can lead to discharges or changes around tributaries and streams that could negatively affect Lake health.

Creating a Gateway to the Trailhead. The intersection of the trail with Charlotte Village along Ferry Road will be key to wayfinding for the trailhead. While the primary focus is on feasibility and trail improvement prioritization, the opportunity to support wayfinding in this area to the trail and to town amenities will be important to supporting the project as a whole. It can also help inform the important step of identifying connections for the last leg of the trail leading to Charlotte's Town Beach.



D&K understands the context of the trail in terms of the connectivity between the Park and West Charlotte Village. As usage of the trail increases, so might the need to offer trail users options to branch out to other key destinations located close by. While several routes between the trailhead and downtown area have been discussed, the most direct route currently available from the existing trail is along Greenbush Road. Greenbush Road lacks shoulders yet it is part of the Lake Champlain Bikeway that turns onto Ferry Road and then up Lake Road to Charlotte Beach. The Ferry from New York could bring another potential group of visitors who would be keen to travel the Charlotte Town Trail to visit the vineyards or berry farms or continue on the trail as far as Mount Philo. D&K will consider both immediate and long-term users and needs at this trail juncture as part of the study.

As the project unfolds, additional information, issues, and alternative concepts will be discussed, culminating in the selection of a preferred alternative. The Trails Committee will likely be a key player in this process, given the importance and effort that has been vested in seeing this trail become reality.

Project Elements

Public Participation

The public should be actively involved in shaping this project from the beginning in order to ensure that the final recommendations are supported by the community and have the momentum needed for implementation. We see our role in public participation to be as important as our role as planners and engineers. We have extensive experience leading public involvement programs. Public engagement has many benefits:

- Helps define the problem through observation and experience
- Provides pertinent information related to the problem
- Provides additional perspective (safety, environmental concerns, aesthetics, economics)
- Helps generate and evaluate alternative solutions
- Assists in establishing criteria for project success
- Assists with selecting a solution





Our staff has ample experience with organizing and facilitating public meetings, ranging from hands-on workshops where community members have significant involvement in the design process, to more formal presentations that inform and solicit input. In some communities we have had success using social media, which could include Front Porch Forums or web tools, such as “SeeClickFix.” We will work with the Town to develop an appropriate strategy for outreach, both to the public and all other stakeholders. Stakeholders will include the Town, VTrans, residents of Wildwood neighborhood, Pelkey’s Blueberry Farm and Charlotte Winery, residents of the Senior Center and Daycare, City workers and local businesses.

Implementation and Funding Strategy

One of the most critical elements of a bicycle and pedestrian plan is the implementation strategy, which provides the community with a clear and realistic way to fund construction. Many projects involve improvements that cost more than what can be funded through a single grant, so it is important to plan the phases of implementation into manageable segments. D&K is experienced in identifying logical project phasing plans, so that each step can be funded under a single grant and make sense from a connectivity and functionality standpoint.

VTrans Municipal Assistance Bureau Process

This project is being funded through a grant that is administered through the VTrans Municipal Assistance Bureau (MAB). Therefore, it must be developed in accordance with the 2014 Guidebook. DuBois & King has a thorough understanding of the MAB project development process through our work on over 90 projects administered through the MAB and its predecessor, LTF. Projects have included sidewalks, intersection improvements, bridges, and multi-use pathways, such as the Three Rivers Transportation Path; and included both scoping and preparation of construction plans. This experience will ensure that we take all necessary actions at appropriate times throughout the project, so that the Town will be eligible for MAB construction funding programs.



DuBois & King’s design of a new 17-acre ADA accessible public park required the design of an 800-foot-long elevated pedestrian boardwalk across a wetland floodplain. This walkway provides pedestrian access to a variety of natural settings in Otter View Park, such as cattail marsh, wetland shrubs, and floodplain forest, as well as scenic views of the creek and nearby mountains.



Project Approach

Identify the Desired Outcomes. Our first step in this project will be to meet with the Town, VTrans, the trails committee, the public, and other stakeholders to develop a shared understanding of the project's desired outcomes. We believe that the outcomes would include developing a consensus plan that enjoys public support; is technically feasible and cost effective; and is attractive, context-sensitive, functional, and easy to construct and maintain, and provides a positive user experience.

Engage the Community. In our public engagement process, we will seek to build a shared understanding of issues and opportunities, present any trade-offs clearly and in an unbiased manner, and mitigate concerns through careful planning and design. We will use effective communication, outreach, and visualization to build a shared understanding of the design challenges and opportunities, which is essential for effective collaborative decision making. Bringing in successful examples from other communities for ideas and opportunities to enhance these two portions of the Charlotte Town Trail will be one way to build understanding and increase enthusiasm for this project.



Project Management. The D&K project management approach will ensure that the project will make steady and productive progress and result in a product that is satisfactory to the Town and the public. The key steps in our approach include:

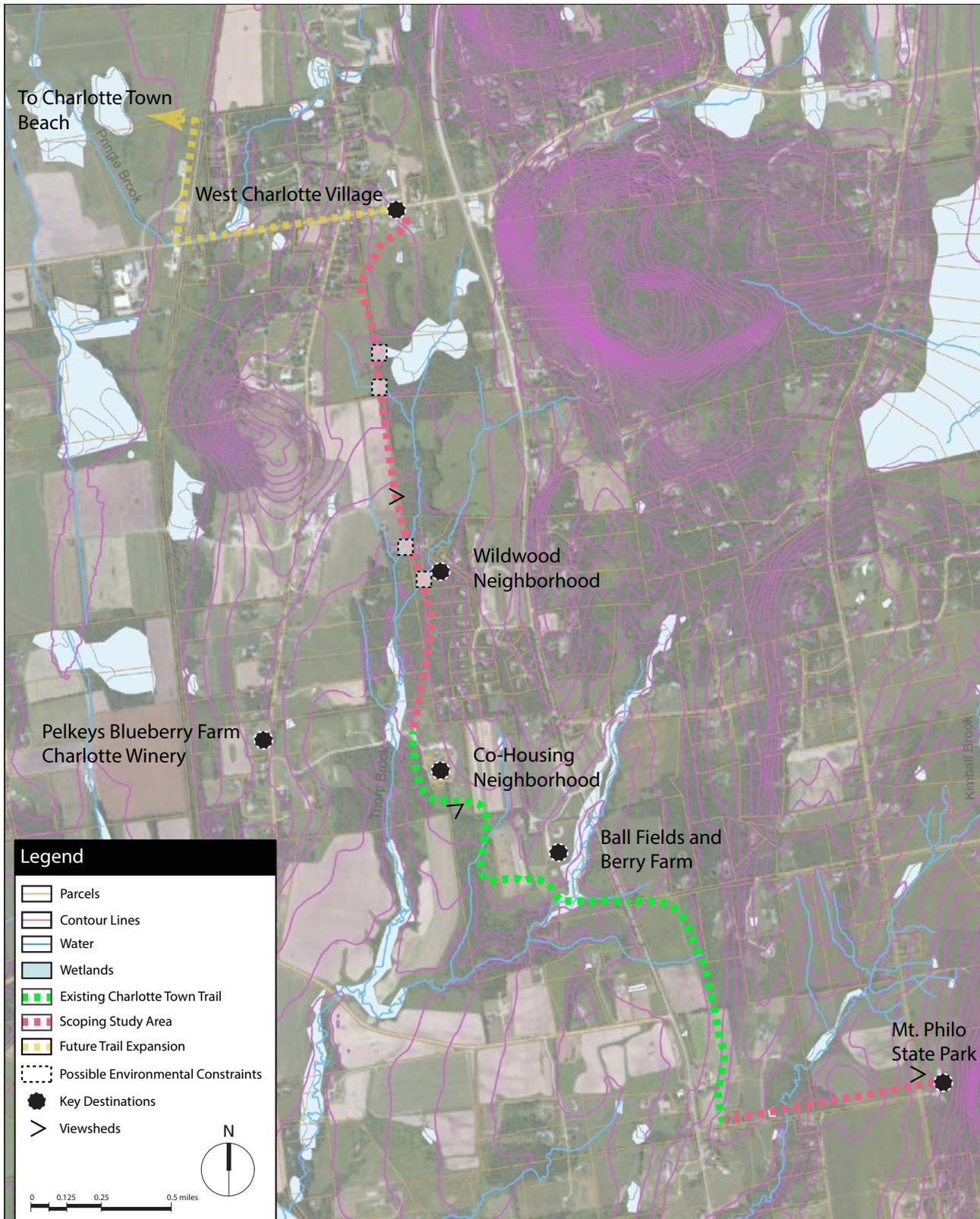
- Dedicate a project manager with vision, ability, experience, and communication skills to guide the project
- Assemble a team of qualified professionals that will remain dedicated to the project until completion
- Identify/resolve key design issues as early as possible
- Foster a project culture of open and frequent communications

D&K routinely uses graphic tools to enhance public presentations. Sketch-Up and photo simulations are among the tools we use to communicate ideas and concepts.





Preliminary Mapping of Environmental Constraints





Scope of Work

The following proposed scope of services is based on the VTrans Recommended Outline for a Bicycle and Pedestrian Scoping Study, but is customized to the specific needs of Charlotte for this study.

A. Project Kickoff Meeting

D&K will meet with the Town, plus any other individuals identified by the Town, to discuss the objectives, concerns, goals, schedule, and deliverables, and to solicit any existing relevant information such as tax maps, right of way and utility information, and other information that is available. Representatives from VTrans will be invited to attend the meeting. The public participation plan will be established at this meeting, as well as the schedule for future coordination meetings.

Deliverables: *Kickoff Meeting Minutes*

B. Compile Base Map/Document Existing Conditions

D&K will obtain Vermont Center for Geographic Information (VCGI), Chittenden County Regional Planning Commission (CCRPC) mapping, orthophotos, and tax maps and property owner information from the Town and/or the CCRPC. Additional information will be requested by the University of Vermont civil engineering class per the RFP. The information gathered will be compiled into base mapping that will be used throughout the project.

Once the base map is compiled, D&K will conduct a field investigation to photograph the corridors; take measurements of roadway and shoulder widths; and identify the presence of overhead and subsurface utilities, signing, drainage systems, adjacent topography and vegetation and other natural features. We will also discuss the presence/extent of underground utilities with the Town. Using a survey quality GPS unit, D&K's field naturalist will visit the entire project area and map all important and notable natural resources. This will provide a useful baseline for design, permitting, and eventual interpretive sites. Cultural and historic resources will be identified by Hartgen Archaeological Associates, and will also be shown on the base mapping. D&K will collect traffic volume information, pedestrian and bicycle counts (if available), and crash history information, and use this information in the development of alternatives.

Deliverables: *Base map digitally and hard copy*

C. Local Concerns Meeting

D&K will coordinate and facilitate a Local Concerns Meeting to discuss any project issues with affected property owners, local officials, VTrans, the CCRPC, regulatory officials, the general public, and other appropriate parties. Issues identified at this meeting will be taken into consideration during the preparation of the Purpose and Need Statement and throughout the development of the project. D&K will conduct the meeting, explain the project development process, summarize previously identified issues and concerns, and solicit input relevant to this project. Central to the discussion will be what different user groups are anticipated and desires on the trail and what route and surface types are desired and what improvements to the current conditions might entail. D&K will take detailed notes of the meeting and prepare meeting minutes.



Following the Local Concerns Meeting, DuBois & King will prepare a Purpose and Need Statement for the project. This statement will clearly define the reasoning and justification for the project, as it will be used as the basis for all proposed alternatives. The statement will be submitted to the Town and VTTrans for review and comment.

Deliverables: *Local Concerns Meeting Minutes and Purpose and Needs Statement*

D. Identify Land Use Context

DuBois & King will identify and review existing land use patterns and the need for connectivity between destinations throughout the project area. This task will include mapping of current and potential future land uses and recreational facilities throughout the study area, which will be used to understand current and future pedestrian and cyclist travel patterns. The context evaluation will be used to identify needs for bicycle and pedestrian facilities, and will be used during the design and evaluation of the alternatives.

Deliverables: *Land Use Map and Site Analysis Map, both digitally and hard copy*

E. Develop Conceptual Alternatives

D&K will work with the Town to identify potential alternatives to address the project goals based on information compiled for the base plan, site analysis and from the local concerns meetings. The alternatives will address current and future needs of pedestrians and bicyclists and identify potential opportunities to implement trail amenities, including whether the trail is on or off road, and the transitions in between varying treatments. Because of the project's location through possible State of Vermont rights-of-way, we also propose to coordinate a meeting with the appropriate VTTrans and FHWA officials to discuss possible options, easements and permitting and assure that the team has their input and understands the constraints.

The alternatives will be shown graphically in plan view on the base mapping and will include typical sections and renderings, as appropriate. Alternatives will include a variety of options to meet the non-motorized transportation needs for the project area, as well as to enhance this corridor's connections to the surrounding aesthetics.

Each alternative will be developed to meet the requirements of the Americans with Disabilities Act (ADA) and other applicable state and federal requirements. Alternatives having an impact on stormwater will consider any on-site amendments or facilities such as green stormwater infrastructure. For a trail, this may be a vegetated swale along both sides of the trail, green buffers or researching permeable options for pavement.

Deliverables: *Alternatives in both plan and section view, as well as renderings for public delivery*

F. Identify Right of Way Issues

Existing right of way and easement information will be compiled from VTTrans and Town records and added to the base map. We will confirm the width and extent of existing roadway rights of way, public/private property ownership boundaries, and recorded easements and restrictions (such as Act 250 permits) that exist within the project limits. While this information will not precisely determine property limits, it will allow the team to identify potential impacts to private properties outside of the public rights of way and to consider these impacts in the feasibility assessment. Additionally, access management issues will be identified and recommendations made regarding side roads and driveways that may pose potential safety considerations for pedestrians.

Deliverables: *ROW information will be added to base maps*



G. Identify Utility Conflicts

During the development of base project information, we will identify the presence, extent, and ownership of overhead and underground utilities through a review of Town records and field observations. Although exact locations will not be determined, we will identify obvious and potential conflicts with these utilities through the development of alternatives.

For each alternative, D&K will identify which utilities may be affected, conflicts, and probable relocations that may be necessary. If relocations are envisioned, we will identify where probable relocations would occur and identify if these locations are within or outside of the existing right of way. D&K will also identify whether any underground utilities might be impacted by the construction of proposed improvements. The assessment will also include identification of owners of potentially impacted utilities.

Deliverables: *Utilities information will be added to base maps*

H. Identify Natural and Cultural Resource Constraints and Permitting Requirements

D&K's work under this task will also include the identification of permits that may potentially be needed for this project. These may include:

- Amendments to existing Act 250 permits
- USACOE General Permit for wetlands
- Operational Permit for stormwater
- Conditional Use Determination for wetlands
- Construction General Permit for stormwater
- Stream Alteration Permit

DuBois & King has permitting specialists on staff that regularly work on transportation projects. We know the resource agency staff members and are knowledgeable of current regulations and practices. We have the experience to identify potential permitting requirements early in the project development process. Where possible, D&K will obtain documentation from state or federal agencies should any resources be impacted.

Charlotte Brodie is a field naturalist specializing in wetlands analysis and will be conducting the natural resources inventory which will also be added to the base map. Once alternatives are developed, D&K will estimate the area of disturbance that would result and include the extent of mitigation required under the National Pollutant Discharge Elimination System permit. Further, D&K will align project goals to those found in the known regional plans such as the stormwater master plan, tactical basin plan, stormwater retrofits and other stormwater discharge impacts by each alternative.

Cultural and historic resources will be evaluated by our subconsultant, Hartgen Archeological Associates (Hartgen). Archaeological and historical assessments will entail three primary phases including: background research, site visits, and preparation of a report for submittal to VTrans.

Background research will be conducted to place the project area in its historic and pre-contact contexts. Archaeological background research will include available information from State and National archives and databases.

Walkovers of the project area will be conducted by an archaeologist and an architectural historian who will take photographs characterizing the setting and historic context. The archaeologist will assess the potential for the presence of archeological sensitivity or intact cultural deposits. The architectural historian will review the area for historic features. Recommendations for avoiding impacts and adverse effects will be documented in a letter report.



Hartgen will also review project plans to determine the effect of the project on the historic and archeological resources, and make recommendations concerning proposed plans to ensure that the project does not adversely affect historic or archeological resources. Draft Archaeological Resource Assessment and Historic Review Reports will be provided to the Town and VTrans for review and comment. Based on the results of the research and archeological site visit, recommendations will be made as to whether archeological testing may be necessary for permitting.

Deliverables: *Archeological Resource and Historic Preservation Assessment Report and any documentation from state agencies to summarize resource impact in the area. Maps of the Natural Resources Inventory.*

I. Alternatives Presentation

Upon compilation of the base information and development/review of potential alternatives, D&K will coordinate and schedule a public meeting to present and obtain input on the alternatives. Appropriate parties will be invited, including the general public, affected property owners, local officials, VTrans and CCRPC. D&K staff will conduct the meeting/present the alternatives for pedestrian facilities, bicycle facilities, lighting, signage and other trail enhancements. We will provide a workshop environment, allowing all participants to engage and provide their input through commenting on the plans. We will work to build a consensus for a preferred alternative, which may be one of the alternatives presented or a hybrid including elements of several alternatives and the mandatory no-build alternative.

Deliverables: *Meeting Minutes from Presentation, including feedback and consensus for preferred alternative.*

J. Develop Preliminary Cost Estimates

Construction cost estimates will be prepared for the recommended alternatives using VTrans' methodology, which utilizes an individual pay item and unit price basis. Project pay items and descriptions will be identified based on the anticipated construction. Quantities will be computed for each item using the conceptual alignment alternatives. Unit prices will be obtained from the most current edition of the VTrans Unit Price for preliminary engineering estimates. In addition to construction costs, the estimates will include costs for municipal project management, engineering, construction inspection, utility relocations, and right of way or property acquisition and any further planning and design to be undertaken towards implementation.

Deliverables: *Cost estimate to include amounts for construction, engineering, municipal project management and construction inspection.*

K. Implementation Timeline and Funding Strategy

D&K will work with the Town to provide a detailed and practical implementation plan for the project. The plan will likely consist of a number of discrete projects that may unfold over a number of years, potentially with a variety of funding sources, including VTrans MAB programs. A realistic timeline will be developed, taking advantage of D&K's significant experience with all phases of the planning, design, and construction of projects and knowledge of funding opportunities. The implementation strategy will include a prioritization of the plan's elements and will be developed with input from the public and Town officials.

Deliverables: *Project Implementation Timeline and Funding Matrix.*



L. Report Production and Presentation to the Selectboard

DuBois & King will compile the results of the above tasks and prepare a draft report that will follow VTrans' Recommended Outline for a Bicycle and Pedestrian Scoping Study. An outline of the report is expected to include:

- Executive Summary
- Introduction
- Project Purpose and Need
- Existing Conditions
- Right of Way
- Utility Impacts
- Natural and Cultural Resources
- Identified Alternatives (description, function, relation to purpose and need)
- Conceptual Plans
- Preliminary Project Cost Estimates
- Public Involvement
- Compatibility with Planning Efforts
- Project Timeline
- Summary and Recommendations
- Appendices (sketches, cost estimates, environmental data)

DuBois & King will submit three (3) hard copies and electronic copies (.pdf) of the draft version of the report to the Town and the VTrans project supervisor for review and comment with three weeks to review the draft prior to the public meeting. We will conduct a final Public Information Meeting to present and discuss the conclusions once the draft report is submitted and approved. Upon receipt of all review comments, D&K will address the comments, implement appropriate changes, and prepare the final report. D&K will submit three (3) hard copies and electronic copies of the final report to the Town and VTrans.

Deliverables: Draft Report, Public Information Meeting Minutes, Final Report.

M. Project Wrap-Up

All data, databases, reports, program and materials in digital and hard copy format created under this project shall be transferred to the Town of Charlotte upon project completion and become the joint property of both the Town of Charlotte and the State of Vermont.

Summary of Estimated Labor Hours

The table on the following page indicates D&K's estimated labor hours to complete this project. The hours are categorized by the type of personnel and are shown separately for each task envisioned under the Scope of Services. A summary of the total hours is shown on the bottom line.

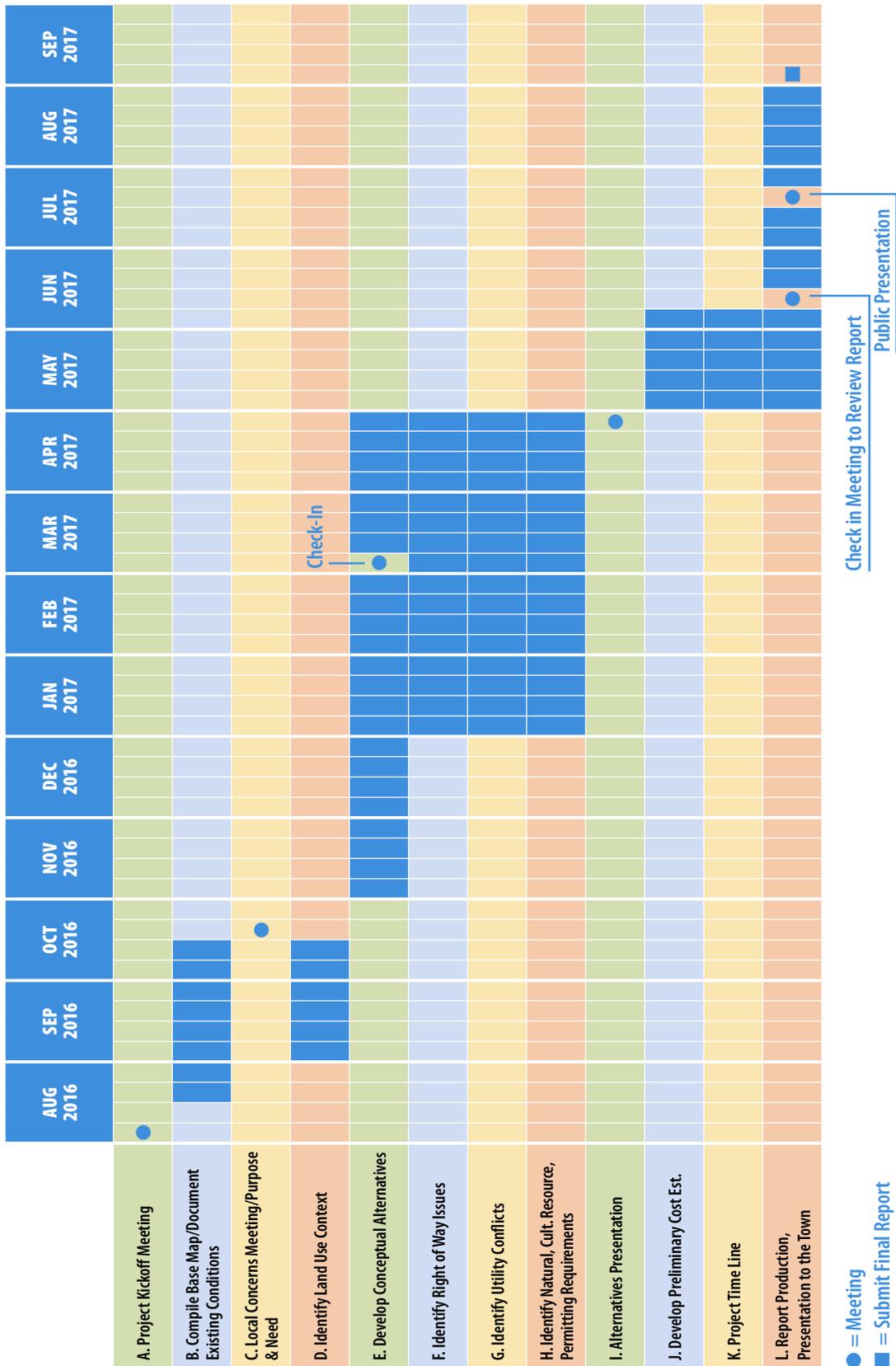
Project Schedule

Per the Town's RFP, we understand that the goal for the project is to begin work in August 2016, with completion by September 30, 2017. Our knowledge of the VTrans/MAB Project Development Process will allow us to focus on completing the necessary steps in the correct order and with the greatest possible efficiency. The schedule appears on page 12.



Staff Hours Allocation
Town of Charlotte Bicycle and Pedestrian Scoping Study
 Project No.: 623516X

Project Phases & Tasks	D&K Staff Hours										Hartgen Hours					Hours by Task
	Project Manager	Landscape Planner	Transp'n Engineer	Design Technician	Environ'l Engineer	Field Naturalist	QA/QC	Structural Engineer	Admin Support	Principal Investigator	Architect/Historian	CAD/GIS Specialist	Technician/Support			
A. Project Kick Off Meeting	4	4							2							10
B. Compile Base Map/Document Existing Conditions	4	32	4	24	8	24								14		110
C. Local Concerns Meeting & Purpose and Need Statement	6	16							2							24
D. Identify Land Use Context	2	16	2													20
E. Develop Conceptual Alternatives	12	32	16			8	2	8								78
F. Identify Right of Way Issues	4	12	8													24
G. Identify Utility Conflicts	2	4	8													14
H. Identify Resource Constraints and Permitting Issues	2	4	4		16	8				24	10	6	1			71
I. Alternatives Presentation	12	30	4				2		2							50
J. Preliminary Cost Estimates	4	12	6				2	4								28
K. Project Timeline and Implementation Plan	2	8														10
L. Prepare Draft, Final Report and Presentation	24	32	16		2		4	2	8							88
Total Hours:	78	202	64	24	26	40	10	14	14	38	10	6	1	38	1	527





Firm Overview and Project Team

Founded in 1962, DuBois & King is a Vermont based firm, providing multidiscipline planning, design, and construction phase services to federal, state, and municipal clients. With offices in Randolph, South Burlington, Brandon, and Springfield, Vermont, and a staff of 90, the firm employs engineers, planners, designers, surveyors, wetland scientists, environmental and permitting specialists, landscape architects, construction specialists, right of way and property specialists, and support personnel experienced with the unique challenges of multidiscipline projects. D&K has supported Vermont municipalities with a wide range of engineering, transportation, and planning services, and has advanced planning studies, conceptual and final design, environmental documentation, and other services on hundreds of projects. A discussion of the focused areas of service for the Charlotte Scoping Study follows:

Transportation Planning. DuBois & King's staff includes planners and engineers experienced in working with communities, agencies, and the public on a variety of transportation planning projects. Our approach is to be well informed of public and community concerns, consider the important influences between land use and transportation design, and incorporate community goals and visions into the plans. Our staff is well versed in the latest innovations of multimodal land use/transportation planning, including mode share analysis for developments, evaluation of road diets, and development of Complete Streets designs. In addition, our design team brings a comprehensive understanding of local, federal, and state programs and requirements. D&K also has unique expertise in Complete Streets and multimodal transportation. Communities are rediscovering the importance of well-designed streetscapes that accommodate multiple transportation modes and balance safety, mobility, aesthetics, and environmental elements. The D&K team has experience working with communities to develop streetscape design concepts, street design guidelines, and construction documents for improvements that incorporate bicycles, pedestrians, transit, parking, and automobiles in a limited space.

Environmental Impacts and Permitting. Whether supporting a planning and engineering effort or conducting a natural resources investigation independent of a development project, D&K environmental planners, scientists, and engineers are highly experienced at providing services for compliance with state and federal permitting regulations. DuBois & King project teams are capable of providing all services necessary to complete a thorough environmental documentation, including state and federal permitting.

Structural Engineering. D&K has a staff of structural engineers to assess opportunities and needs for boardwalks and bridges as needed.

Cost Estimates. It is critical that the cost estimates made during conceptual or preliminary design be reliable to allow planning work to continue with a high degree of confidence in the costs and benefits. Our team has extensive experience in developing cost estimates for public infrastructure in Vermont.

Public Engagement. In our work for communities all around northern New England, D&K routinely uses graphic tools to enhance public presentations. PowerPoint presentations, boards, SimTraffic model simulations, and aerial photographs are all part of the "toolkit" that we use to present information and convey ideas; engage the public, agency officials, clients, and other interested parties; and help our audience visualize what our projects will look like.

The following section provides a summary of project staff abilities and experience. An organizational chart follows. Resumes of key staff are located later in the proposal.

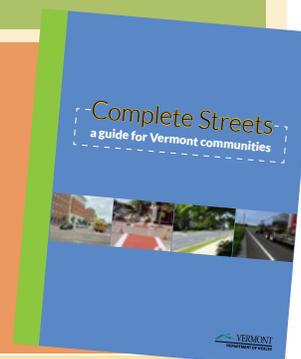


Lucy Gibson, PE, Project Manager/Transportation Planner, has 28 years of experience in transportation planning and design. As a transportation planner and traffic engineer at DuBois & King and as a regional transportation planner and advocate for Complete Streets principles, Lucy has developed sensitivity to environmental concerns, land use goals, and current transportation policies and programs. She provides extensive expertise in multimodal transportation planning and engineering and complete streets, and has led public informational meetings and design charrettes for many planning projects. Lucy has or is currently managing similar bicycle-pedestrian scoping efforts in the Vermont towns of Cabot, Wilmington, Huntington, North Hyde Park, Charlotte, Berlin and Hinesburg. She will serve as the lead planner for this project and will provide assistance with public engagement. Lucy will be the primary point of contact for the Town and will manage the D&K staff and subconsultant partner, Hartgen.



Lucy served on the ITE Project Management Committee during the development of this walkable communities guidebook

Lucy was the primary author for a guide for Vermont communities for implementation of Complete Streets.



Sophie Sauvé, ASLA, LEED AP, Landscape Planner has 10 years of experience providing transportation planning and landscape design to communities of varying scales. She has collaborated on projects in both rural and urban settings, on streetscape enhancements, traffic calming, and on multimodal strategies for various Vermont communities. Sophie understands the needs of motorists, pedestrians, and cyclists of all abilities, and she has significant experience leading and supporting public engagement programs aimed at addressing the needs and concerns of residents, government officials, and business owners with regard to transportation networks. Sophie's recent projects include work on MAB/LTF studies in St. Johnsbury, Rochester, Middlebury, Burlington, and West Hartford. Her strengths include developing compelling visualizations to convey plans and presentations to the general public. While at the Winooski Natural Resources Conservation District, Sophie worked with a wide variety of landowners on conservation issues, including foresters, farmers, non-profit groups and public agencies to connect funding opportunities and project needs within the District and providing leadership and management through grant writing and partner collaboration.

John Merrifield, PE, Transportation Engineer, has 13 years of experience designing multimodal transportation projects. John serves many of the firm's current multimodal scoping studies and design projects. He is experienced with cost estimating, traffic control, signing, slope stabilization, and roadway geometry. He will assist with estimating and conceptual design of improvements.

Charlotte Brodie, CWS, Field Naturalist, has 28 years of experience supporting natural resource investigations for D&K's transportation projects. She is an interdisciplinary field scientist trained in environmental evaluation, interpretation, and monitoring. Her training and experience incorporate geology and geomorphology, soils chemistry, botany, vertebrate and invertebrate zoology, and hydrology. She specializes in wetlands analysis and has a thorough knowledge of state and federal regulations pertaining to wetlands and other waters of the United States.



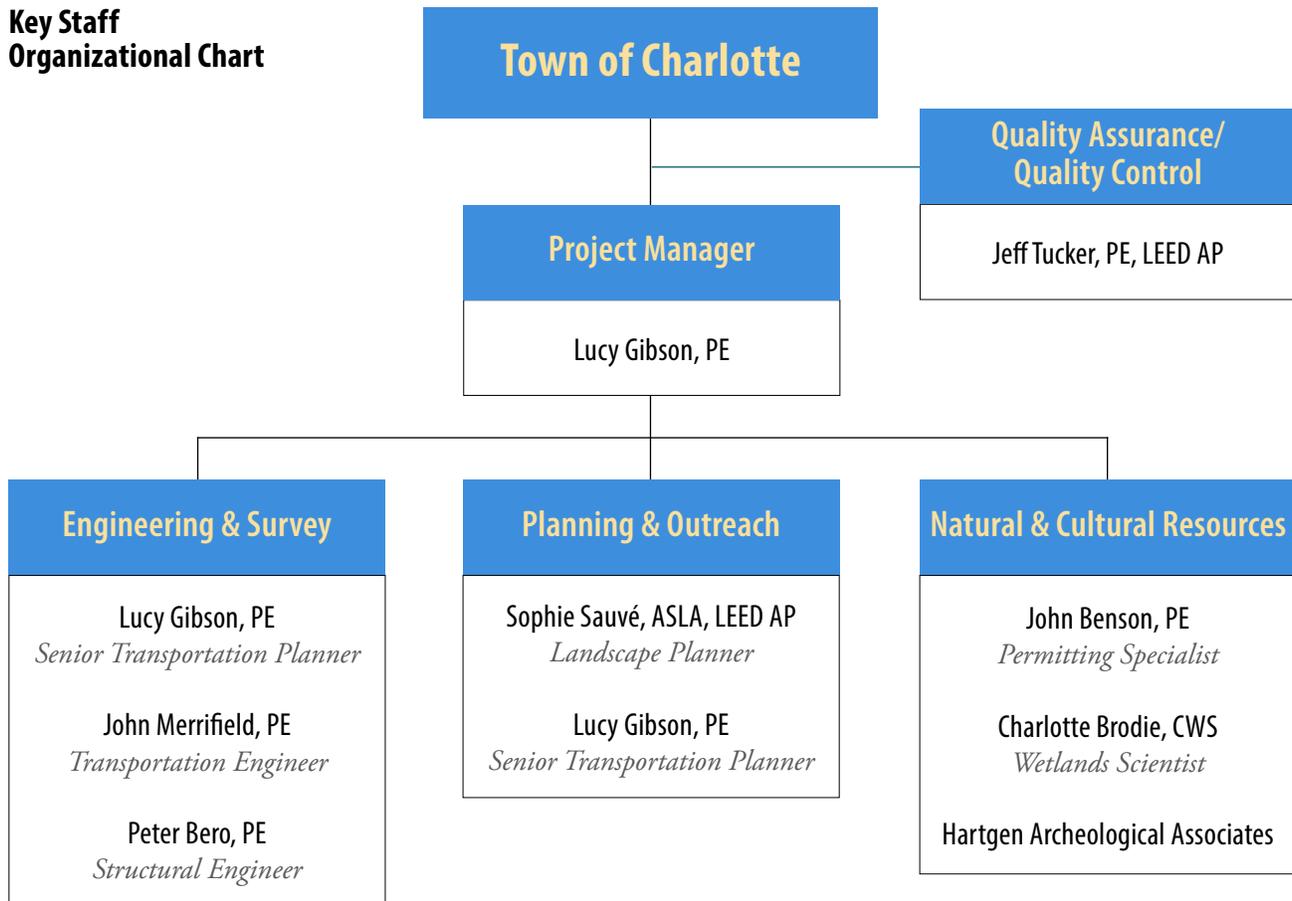
John Benson, PE, Environmental Engineer, has 40 years of technical experience in the planning, design, and permitting of community development, municipal, transportation, and site projects. He is a permitting specialist and is experienced in the design of stormwater infrastructure, and site/civil design. He has provided permitting assistance and oversight for numerous sidewalk and pathway projects, including the Three Rivers Transportation Pathway in St. Johnsbury, the Barre City Granite Museum Segment of the Central Vermont Regional Path, the Warners Corner Sidewalk project in Colchester, and the Millstone Hill West Shared Use Path in Barre Town.

Peter Bero, PE, Structural Engineer, has 14 years of experience providing design of bridges, culverts, retaining walls, and other structures throughout Vermont, New Hampshire, and Massachusetts. He has worked or is working on design for pedestrian structures including bridges and pathways, including a pedestrian bridge alongside the Waitsfield Covered Bridge and a pedestrian bridge across the Merrimack River in Manchester, New Hampshire. Pete will support the study by evaluating the feasibility and design of any bridges or other structures, such as boardwalks.

Hartgen Archeological Associates has been providing cultural resource management and professional archaeological services since 1973 and has a track record of over 5,000 successfully completed cultural resource studies. They work throughout a 10 state area, including Vermont, New Hampshire, and New York, and have successfully completed investigations on over 100 VTrans projects. Hartgen has been involved with many projects related to transportation systems, including sidewalks, highway realignments, bridge replacements, scenic highways, intermodal transportation paths, linear corridors, and thruways. They have been selected under blanket contracts to provide cultural resource management services to the Vermont Agency of Transportation. Their staff is well versed in cultural resource regulations including Section 106 of the National Historic Preservation Act (NHPA) and Vermont (Act 250). D&K and Hartgen have worked together on a large number of transportation related projects. Hartgen will perform archaeological and historical investigations.



Key Staff Organizational Chart



Experience Working as a Team

The D&K staff members assigned to this project have worked together on numerous pedestrian/bicycle study and design projects. Our entire team is thoroughly familiar with the VTrans Project Development Process, Municipal Assistance Bureau Local Projects Guidebook for Locally Managed Projects, Recommended Outline for a Bicycle and Pedestrian Scoping Study, Standard Drawings, Pedestrian and Bicycle Facility Planning and Design Manual, and Specifications for Construction. The D&K transportation team works routinely with in-house personnel, including surveyors, permitting specialists, hydrologists, utility engineers, wetland specialists, landscape architects, and mapping specialists.

Our only subconsultant for the project will be Hartgen Archeological Associates, who will provide a historic resource review of the project area. D&K and subconsultant Hartgen have worked on dozens of transportation projects and have an excellent track record of accurate work that highlights the important permitting issues and informs design and permitting appropriately. With this base of experience, we will be able to work together efficiently and productively.



Relevant Experience

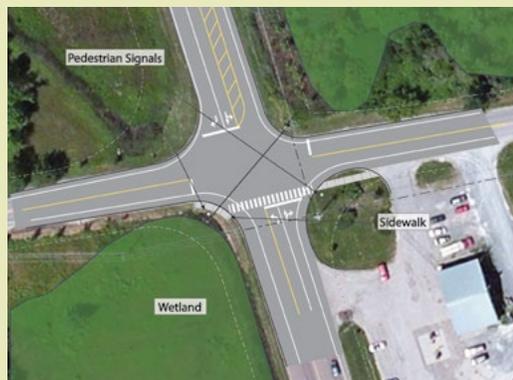
Transportation Project Scoping and Technical Assistance (D&K) Chittenden County Regional Planning Commission, Vermont

US Route 7 Crossing Study, Charlotte. Evaluated options for providing safe pedestrian access along Ferry Road between West Village and an existing regional transit stop, including consideration of “road diet” options that narrow the vehicular travel way so wider shoulders are available. An innovative technique of Advisory Bicycle Lanes, or “Suggestion Lanes” were considered, which can be an appropriate treatment for a low volume corridor with good sight distance, such as Ferry Road. Pedestrian crossing of US Route 7 was proposed in the study.

Park and Ride Feasibility Study, Charlotte. Exploration of alternatives to develop a park and ride lot and CCTA transit stop in vicinity of the US 7/Ferry Road intersection. Several site alternatives were considered and analyzed. Considerations include traffic and pedestrian volumes and safety, wetlands (permitting feasibility), and connectivity with nearby villages. Considered potential for joint use that could support village infill growth and development, environmental and wetland impacts, and traffic and pedestrian safety. Prepared a summary report that evaluates costs and impacts for each alternative.

Ferry Road Pedestrian Access and Stormwater Management Feasibility Studies, Charlotte. Design studies for pedestrian facilities and stormwater management using green infrastructure integrated into the streetscape design, including raingarden bulbouts and bioswales.

Reference: Peter Keating, Senior Transportation Planner, Chittenden County Regional Planning Commission, 110 West Canal Street, Suite 202 Winooski, Vermont 05404 pkeating@ccrprcv.org, 802.846.4490 (ext. *14)



Cabot STP EH12 Bicycle and Pedestrian Safety Scoping Study Cabot, Vermont

Planning/design services to develop conceptual plans to create a safer environment for Cabot’s Main Street. A primary goal of the project was to develop effective/affordable measures to reduce traffic speeds through the Village, including both short-term measures and longer term infrastructure improvements. The study assessed the feasibility and best location of a sidewalk and crosswalk extending from the Cabot Creamery to the recreation fields. The project will enhance the aesthetic character of Cabot Village and the ability of residents and visitors to move safely along the Route 215 corridor in the central part of the Village. The Town of Cabot was recently awarded a grant from VTrans for the first phase of construction.



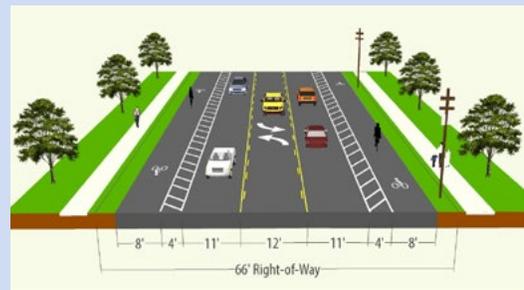
Reference: Brigitte M. Codling, Resident Engineer & Northeast Regional Technician, Northeast Construction Region, Program Development Division, Vermont Agency of Transportation, 347 Emerson Falls Road, St. Johnsbury, VT 05647, 802.748.8015



US Route 302 Bicycle and Pedestrian Scoping Study Central Vermont Regional Planning Commission, Berlin, Vermont

Alternatives to improve bicycle and pedestrian access and safety along a highly commercial corridor of US Route 302, lined with businesses, driveways, turn lanes, signs, a rail crossing, utility poles, and several traffic signals. The project area has a roadway cross section that varies from two to five lanes and is one of the most heavily traveled traffic corridors in central Vermont. Investigating options to accommodate bicyclists and pedestrians including: the addition of a separated, paved, shared use path on one side of and parallel to the roadway; the addition of concrete sidewalks coupled with the widening of roadway shoulders to accommodate bicyclists; implementation of a “road diet” to reduce the number and/or width of travel lanes (known as “right-sizing”); the addition of crosswalks; consolidating the wide driveway openings of area businesses; and the creation of bulb-outs and/or pedestrian refuge islands. Services include public engagement to solicit input and inform area businesses and residents. Project requires historic and archaeological review; landscaping consideration; and coordination with VTrans, the City of Montpelier, and the Town of Berlin.

Reference: Steve Gladczuk, Senior Transportation Planner, Central Vermont Regional Planning Commission, 29 Main Street, Suite 4, Montpelier, VT 05602, 802.229.0389



Three Rivers Transportation Pathway St. Johnsbury, Vermont

Alternatives analysis, design, and construction phase services for a new 1.1-mile-long, 10-ft-wide (with 2-ft-wide graded shoulders) transportation path. The path includes a road crossing, redecking of a former railroad bridge for pedestrian use, design of special planking for a former 250-ft-long railroad tunnel for snowmobile and pedestrian use, landscaping for property screening, use of retaining walls to stabilize slopes, sections of sidewalk for pedestrians, a “share the road” section for bicyclists, and a new trailhead parking lot. D&K developed the path alignment and design to avoid a rail crossing and to minimize wetland, stream buffer, cultural resource, and property impacts. Project was administered through VTrans Local Transportation Facilities (LTF) Section and follows the LTF Guidebook.

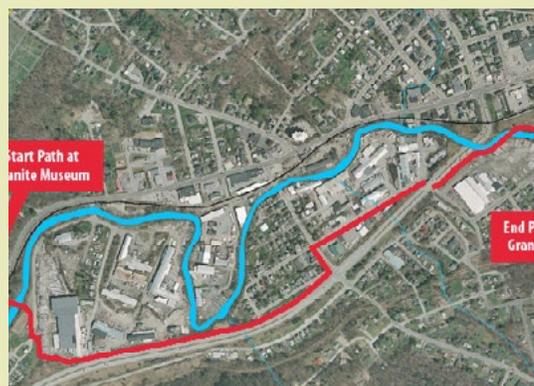
Reference: Jim Rust, Selectboard, Town of St. Johnsbury, Pomerleau Building, 51 Depot Square, Suite 3, St. Johnsbury, VT 05819, 802.748.2203



Barre City Shared Use Path - Granite Museum Segment Barre City, Vermont

Alignment study, design, permitting, and construction phase services for the 1.6-mile-long, 10-ft wide, paved pathway in a built-up urban area. The path includes two pedestrian bridges, several retaining walls, and interpretive stations. In addition to recreation, the path provides an alternative commuter route and connects neighborhoods and businesses.

Reference: Steven Mackenzie, PE, City Manager, City of Barre, 6 North Main Street, Barre, VT 05641, 802.476.0240





Killington Road Walkway, STP EH11(7) Killington, Vermont

Planning, design, permitting, and right of way acquisition services for the construction of the six ft wide Killington Road Walkway, which will extend the existing walkway along Killington Road by over 1,500 ft from School House Road to West Hill Road. The planning process includes developing and evaluating alternatives and soliciting public and stakeholder input. Project elements will include landscaping, signage, and lighting along Killington Road. Scope of services includes topographic survey and base mapping, public meetings, conceptual plans, identification of resource constraints, CE documentation, preliminary plans, right of way plans, assistance through the right of way acquisition process, final design/bidding, contract plans, and assistance during construction. The project is funded through a VTrans Transportation Enhancements Grant.

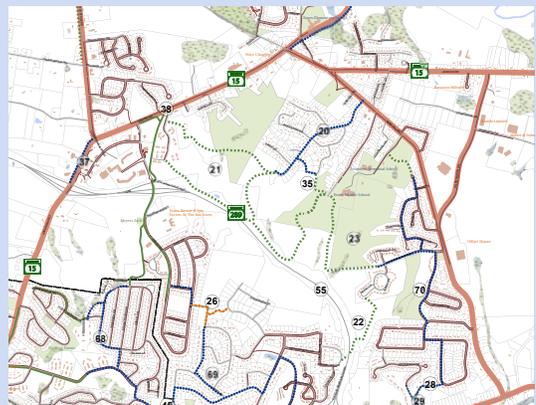
Reference: Richard Horner, Town Planner & Zoning Administrator, Town of Killington, 2706 River Road, PO Box 429, Killington, VT 05751, 802.422.3242



Bicycle and Pedestrian Plan Town/Village of Essex Junction, Vermont

Evaluated roadways, paths, and sidewalks and assisted in developing plans to upgrade bicycle and pedestrian connectivity. Plan is a first of its kind for Vermont; considered cyclists of all comfort and ability levels. Led public meetings and solicited stakeholder input for this 20 year plan, which assists with compliance with Act 34, requiring new transportation projects to consider complete streets principles. Plan incorporates small and large scale projects that can be accomplished with private development and state/federally funded projects. A variety of innovative treatments, including various bicycle lane configurations, bicycle boulevards, and enhanced crosswalks were considered. Worked with a joint Town/Village committee and provided public outreach through "See-Click-Fix" and public workshops.

Reference: Bryan Davis, Senior Transportation Planner, Chittenden County Regional Planning Commission, 110 West Canal Street, Suite 202 Winooski, Vermont 05404, bdavis@ccrpcvt.org, 802.846.4490 (ext. *17)





East Montpelier STP EH11(3) US Route 2 Scoping Study East Montpelier, Vermont

Transportation study identifying options, issues, and costs to develop safety improvements for pedestrians along US Route 2. The Dudley General Store, several commercial properties, and the post office are included in the project area. Project is largely funded through a TE Grant, administered through VTrans LTF Section, and developed in accordance with the LTF Guidebook. Study considered traditional pedestrian enhancements and streetscape element improvements in response to recommendations included in the Central Vermont Regional Planning Commission's Village Study Report on East Montpelier. Considerations include sidewalk lighting/landscaping, crosswalks, signing, traffic calming measures, and access control. Reached out to local Village Committee and public in an effort to understand the community's goals and helped fulfill a vision for the area, incorporating ideas/concerns into final study report and design. The Town was recently awarded a grant from VTrans for the first phase of construction.



Reference: Bruce Johnson, Town & Zoning Administrator, Town of East Montpelier, 40 Kelton Road, PO Box 157, East Montpelier, VT 05651, 802.223.3313 x204

planBTV Burlington Bike Ped Master Plan Burlington, Vermont

D&K is leading a consultant team developing a bicycle/pedestrian plan to enhance Burlington with extensive safe bicycle and pedestrian infrastructure. Recently awarded Silver status by the League of American Bicyclists, the City is "going for Gold" and upgrading facilities to welcome additional cycling demographics that are interested in cycling, but are intimidated by the speed and proximity of vehicle traffic. The team is leading interactive public workshops, assessing potential environmental and civil engineering constraints, and providing concepts and cost estimates. Recommendations for improvements to infrastructure and non-infrastructure are being prioritized in a matrix based on available resources, ease of implementation, and cost/benefit analyses.



Reference: Nicole Losch, Transportation Planner, City of Burlington, Office of Planning, 645 Pine Street, Suite A, Burlington, VT 05402, NLosch@burlingtonvt.gov, 802.863.9094, 802.223.3313 x204



Lucy Gibson, PE

**Project Manager
Transportation Planner**

Education: M.S. Engineering Sciences, Dartmouth College, 1988
B.S. Civil Engineering, University of Vermont, 1983

Registrations: Professional Engineer: VT, NH, ME

Overview: Ms. Gibson has 28 years of experience in transportation planning and design for municipalities, regional commissions, and states. Her background includes multimodal transportation planning, design, and engineering for walkable streets, downtown transportation circulation, and multimodal traffic impact studies for infill “smart growth” development. Lucy was lead author of *Complete Streets: A Guidance Document for Vermont Municipalities*, and she has worked with the Institute of Transportation Engineers on national guidance documents on innovation in planning and design of streets for sustainability and livability. She has published on land use–transportation interactions and measures, focusing on neighborhood and community. She is a frequent speaker at regional and national conferences on these topics, as well as a contributor to state and national guidance documents.

Guidance Documents

Complete Streets – A Guide for Vermont Communities, Vermont Agency of Transportation

Planning Urban Roadway Systems, Institute of Transportation Engineers

Designing Walkable Urban Thoroughfares, Institute of Transportation Engineers and Congress for the New Urbanism

Projects

North Hyde Park Stormwater and Streetscape Scoping Study, Hyde Park, VT. Project Manager leading a consultant team to identify options and costs to improve pedestrian facilities and stormwater treatment through the implementation of green infrastructure. The project team is using a complete streets approach to design pedestrian facilities, while integrating natural stormwater management and streetscape enhancement in the village. The team is focused on improving the quality of the environment while enhancing the user experience by developing public spaces, improving aesthetics, and supporting economic development.

Bicycle and Pedestrian Scoping Study, Rochester, VT. Project Manager and Senior Transportation Planner for a federally funded study that will identify options, issues, and costs associated with the construction of pedestrian and bicycle infrastructure and provide design recommendations and an implementation strategy. The project will likely include sidewalks, crosswalks, multi-use paths, pavement markings, signing, traffic calming, pedestrian lighting, on-street parking, bicycle racks and streetscape enhancements.

Killington Road Walkway, STP EH11(7), Killington, VT. Project Manager for design, permitting, and right of way acquisition services for the construction of a six-ft-wide sidewalk along Killington Road, which will extend the existing walkway by over 1,500 ft from School House Road to West Hill Road. Project elements include landscaping, signage, bioswale design, and lighting along the road. Services include topographic survey and base mapping, conceptual plans, identification of resource constraints, CE documentation, preliminary plans, right of way plans, assistance through the

right of way acquisition process, final design/bidding, contract plans, and assistance during construction. The project was funded through a Transportation Enhancement Grant.

Essex Town/Essex Junction Village Bicycle Pedestrian Plan, CCRPC, Essex, VT. Project Manager for the development of a united Town and Village plan for the improvement of bicycle and pedestrian facilities. The scope included developing both local connections and establishing regional routes. A variety of innovative treatments, including various bicycle lane configurations, bicycle boulevards, enhanced crosswalks, and other measures were considered. The process involved working with a joint Town/Village committee and public outreach through See-Click-Fix and public workshops. The project received a Merit Award for Engineering Excellence from the American Council of Engineering Companies.

Pedestrian Improvement Feasibility Study, Safe Routes to School, West Rutland, VT. Project Manager for study to identify potential alignments for the proposed pedestrian and bicycle facilities. Alternatives include sidewalks and shared use pathways. Performed GIS mapping. Identified existing conditions, potential utility and stormwater conflicts, and wetlands.

Barre Connector Path, Barre, VT. Transportation Planner for a 3.1-mile shared use path and on-road pedestrian/bicycle facilities that connect Merchant's Row in Barre City to the Millstone Hill West Shared Use Path in Barre Town. Provided design and planning review to support development of path alignments.

US Route 302 Bicycle and Pedestrian Scoping Study, Berlin, VT. Investigated alternatives and development a conceptual plan to improve bike and pedestrian access and safety. A road diet, converting two travel lanes into buffered bicycle lanes, was recommended. Sidewalk, crosswalk, and transit stop improvements are incorporated into the project design.

planBTV Walk Bike, Burlington, VT. Project Manager/Senior Transportation Planner leading a consultant team developing a bicycle/pedestrian plan to enhance Burlington as a city with an extensive and safe bicycle infrastructure. Recently awarded Silver status by the League of American Bicyclists, the City is interested in "going for Gold" and in upgrading existing facilities to welcome additional cycling demographics that may be interested in cycling, but are intimidated by the speed and proximity of existing vehicle traffic. The D&K team is leading interactive workshops with the public, assessing potential environmental and civil engineering constraints, and providing concepts, cost estimates, and a prioritization matrix to the City.

US Route 2 Scoping Study and Pedestrian Improvements, East Montpelier, VT. Senior Project Engineer for design of pedestrian enhancements as recommended in the Scoping Study, also prepared by D&K. Project includes the design of sidewalk and crosswalk improvements, consolidation of driveway openings, property owner coordination to understand and mitigate concerns, and extensive VTrans coordination due to location along a state highway. The project was funded through a TA Grant and administered through the VTrans Municipal Assistance Bureau (MAB).

Cabot Village Bicycle and Pedestrian Scoping Study STP EH12, Cabot, VT. Project Manager for a planning and design study of bicycle, pedestrian, and traffic calming improvements along scenic VT Route 215 in Cabot Village. Project scope included traffic calming and streetscape design, public utility assessment, lighting, on-street parking options, and additional enhancements for pedestrians and bicyclists. Services included a public involvement program; assessment of historic, archaeological, and environmental constraints; alternatives analysis; conceptual designs; and cost estimates.



Sophie Sauv , ASLA, LEED AP

Landscape Planner

Education: M. Landscape Architecture, University of Manitoba, Canada, 2003
B.A. Hons. Comparative Development Studies & Environmental Resource Management Studies, Trent University, Canada, 1998

Registrations: U.S. Green Building Council LEED v. 2.2 Accredited Professional American Society of Landscape Architects

Overview: Ms. Sauv  is a landscape and community designer with 9 years of experience in private practice and public agencies in North America. She is passionate about developing walkable, bikeable communities and has collaborated on projects ranging from regional plans and new community developments to landscape designs for resorts and streetscape revitalizations. Sophie has developed community plans, streetscapes, construction documents, and design guidelines for master planned communities, local municipalities and private developers. Her strengths include landscape architecture, community design, urban planning, and written and graphic communication. Sophie's expertise includes using computer graphic design applications and tools to create compelling, high-quality visualizations.

Projects

Bicycle and Pedestrian Scoping Study, St.

Johnsbury, VT. Landscape Planner for a study that identifies safe, feasible, and affordable improvements at the intersection of US Route 5/South Main Street/Alt US Route 5. This busy intersection is a safety concern for pedestrian and cyclist traffic. Prepared graphic illustrations, including Sketchup model, plan, sections, and photosimulations.

Killington Road Walkway, STP EH11(7),

Killington, VT. Landscape designer for planning, design, permitting, and right of way acquisition services for the construction of the six ft wide Killington Road Walkway, which will extend the existing walkway along Killington Road by over 1,500 ft from School House Road to West Hill Road. The planning process includes developing and evaluating alternatives, and soliciting public and stakeholder input. Project elements will include landscaping, signage, and lighting along Killington Road. Conducted research of sidewalk and bike path photo alternatives for the Killington Road Walkway. Scope of services includes topographic survey and base mapping, public

meetings, conceptual plans, identification of resource constraints, CE documentation, preliminary plans, right of way plans, assistance through the right of way acquisition process, final design/bidding, contract plans, and assistance during construction. Project is funded through a VTrans Transportation Enhancement Grant. Prepared graphic illustrations, including photosimulations.

Bicycle and Pedestrian Scoping Study,

Rochester, VT. Landscape Planner for a federally funded study to identify options, issues, and costs associated with the construction of pedestrian and bicycle infrastructure and provide design recommendations and an implementation strategy. The project includes sidewalks, crosswalks, multi-use paths, pavement markings, signing, traffic calming, pedestrian lighting, on-street parking, bicycle racks and streetscape enhancements. Completed site analysis and illustrations, including plans and sections. Assisted in developing concepts.

Bicycle and Pedestrian Scoping Study, West

Hartford, VT. Landscape Planner for a study that identifies options, issues, and costs associated with the construction of pedestrian and bicycle infrastructure and provides design

recommendations and an implementation strategy. The project complies with Vermont's Act 34 and contemplates the following Complete Streets elements: sidewalks, crosswalks, multi-use paths, pavement markings, signing, traffic calming, pedestrian lighting, on-street parking, bicycle racks and streetscape enhancements. Completed site analysis, illustrations, including plan, and sections.

Granite Museum Segment, City of Barre, VT.

Project landscape designer for a sculpture park and multi-use path concept plan on the site of the Vermont Granite Museum/ Stone Arts School. The pathway was designed to minimize environmental impact on a disturbed site that is bordered by the Steven's Branch of the Winooski River and the Barre-Montpelier Road. The site includes wetland areas, and proposed alternatives celebrated both the wetland and the river and the history of the site. The path set up intentional views of the granite sculptures proposed on site, and draws to Interpretive stations to highlight Barre's rich history in the granite industry and add interest for path users. Provided site analysis, project concepts and associated illustrations of several project alternatives.

planBTV Walk Bike, Burlington, VT. Transportation Planner for a team developing a bicycle/pedestrian plan to enhance Burlington as a city with an extensive and safe bicycle infrastructure. Recently awarded Silver status by the League of American Bicyclists, the City is interested in "going for Gold" and upgrading existing facilities to welcome additional cycling demographics that may be interested in cycling, but are intimidated by the speed and proximity of existing vehicle traffic. Prepared base plans and cost estimating.

Middlebury Traffic Calming Study, Addison County Regional Planning Commission, Middlebury, VT. Landscape Planner for a traffic calming study of an increasingly used urban residential street and neighborhood area. Completed the study on an accelerated schedule; the study evaluated vehicular speeds, levels of use by pedestrians and cyclists, and potential measures to encourage walking and biking and reduce vehicle speeds through the area. The study area serves as a link between a college campus and

the downtown retail area. Completed visualizations of project sections using SketchUp. Prepared meeting poster and postcard invitations.

Pepper Place Revitalization/Courtyard Revitalization, Birmingham, AL, Sloss Real Estate.

Project Manager/Landscape Designer for revitalization, streetscape and courtyard redesign. Formerly the Dr. Pepper Syrup Plant and Bottling Company, Pepper Place is now a focal point within the city's Lake District. As a destination, restaurants and boutique stores inhabit historical buildings and a farmers' market enlivens the area during summer Saturdays. The project proposed physical connections within the district, which is traversed by a road with both parallel and diagonal parking and two travel lanes. Key elements included reducing the width of the road, adding bike lanes and green stormwater infrastructure to the existing facilities and using repetitive elements and wayfinding cues to lead visitors from the farmers market and street, into and through the courtyard. As an oasis within the city, the courtyard also acted as spill out space to adjacent businesses to animate throughout the day.

Levan Hall, St. John's College, Santa Fe, NM.

Landscape designer for the area surrounding Levan Hall, an addition to St. John's College. The design emphasized access and connection to the existing parts of the campus and respect for the surrounding landscape. Due to topographical challenges, accessibility was a central feature to the design, including the addition of a ramp from entry to the center of campus and highlighting key destinations. Completed site analysis, conceptual drawings, illustrations and construction documents.

Barre City Shared Use Path Expansion, Barre City, VT. Landscape designer. Compiled aerial photographs and created graphic representation of the Barre City shared use path expansion for a public presentation.

Northfield Village Sidewalk, Northfield, VT.

Landscape designer. Created photosimulations of the proposed sidewalk design for the Northfield Village Sidewalk. The photo simulations included proposed materials, additional lighting and ramp curb cuts.



John Merrifield, PE

Transportation Engineer

Education: M.S., Civil Engineering, University of Maine, 2002
B.S., Civil Engineering, University of Maine, 2000

Registrations: Professional Engineer: CA 68089I

Overview: Mr. Merrifield is a civil engineer with 14 years of experience supporting state and municipal projects. John has been responsible for alternatives analyses; conceptual analysis and design of pathways and sidewalks; traffic signal design; design of traffic control, signing, and pavement marking plans; plan development; quantity and cost estimating; and construction oversight for roadway, drainage, bridge, road reconstruction, and paving projects.

Projects

Barre City Path – Smith Street Segment, Barre City, VT. Project Manager for design of the first segment of the larger Granite Museum Segment of the Barre City Path. The Smith Street Segment will connect existing sidewalks on Berlin Street with those on Blackwell Street, and close an important 1,500-ft-long gap between the existing sidewalks. Met with trucking, fuel oil, and granite manufacturing businesses to understand shipping routes and restrictions; located and marked the path during the design phase; and viewed actual truck driving patterns in the field to determine conflicts with curbs and to design driveway openings. Project is being advanced with the use of a Transportation Alternatives grant, with the City managing the project, and the VTrans LTF Section administering the grant funds.

Montpelier-Berlin Shared Use Pathway, Montpelier, VT. Transportation Engineer for project development of 2.1-mile-long, 10-ft-wide shared use pathway. Services included project design, right of way, utility coordination, final design, and contract document preparation; road crossings maximizing safety for pathway users and roadway traffic; extensive involvement with VTrans Rail Unit for use of state-owned former rail corridor; design of 600-ft-long, modular block retaining wall; and Act 250 approval. Project developed through Local Transportation

Facilities (LTF) Section and funded through FHWA Transportation Enhancement Grant and City/Town funds. Responsible to prepare horizontal and vertical alignments; coordinate with utilities; and develop typical sections.

Three Rivers Transportation Pathway, St. Johnsbury, VT. Design Engineer for development of a 1.1-mile-long, 10-ft-wide shared use pathway to follow the former Lamoille Valley Rail Corridor. Project included the retrofitting of a former rail bridge for pedestrian traffic. Responsible for project design, right of way, utility coordination, final design, and contract document preparation. Project developed through Local Transportation Facilities (LTF) Section. Developed alternatives to avoid wetlands and historic resources and minimal property owner impacts.

Barre Connector Path, Barre, VT. Project Engineer for a shared use path and on-road pedestrian/bicycle facilities that connect Merchant's Row in Barre City to the Millstone Hill West Shared Use Path in Barre Town. Developed conceptual and preliminary alignments for path segments based upon a conceptual alignment study, geographic conditions, and the concerns of affected parties. Pathway work includes design of shared use path segments, sidewalk segments, drainage improvements, and alterations to existing signage and striping. Close coordination with municipal officials and landowners is required to identify and address concerns related to aesthetics,

impacts to adjacent properties, and other factors likely to affect usability and popularity of the path.

Bristol Sidewalk Feasibility Study, Safe Routes to School, STP SRIN(1), Bristol, VT. Project Engineer for a feasibility study of sidewalks and shared use paths in order to improve bicycle and pedestrian facilities near the schools. Specific responsibilities included addressing issues such as right of way, utility relocation, tree removal, evaluation of proposed alignments, and preparation of cost estimates.

Sidewalk Conceptual Alignment Update & New Analysis, Moretown, VT. Project Engineer for update to the 1996 Conceptual Alignment Analysis for Pedestrian Facilities for the Town of Moretown. Project area included the VT 100B corridor from Pony Farm Road to Bridge #4 over the Mad River, which is a length of approximately 0.8 miles. Scope of work includes compiling base maps and documenting existing conditions; investigating local and regional concerns; identifying activity centers; developing conceptual alignments, utility conflicts, natural and cultural resource constraints, and permitting requirements; conducting an alternatives presentation meeting; developing preliminary cost estimates and a project time line; and compiling the results of the study into a report.

Fairfield Center Pedestrian Improvements, Fairfield, VT. Project Engineer for design of sidewalks, streetscape enhancement, and other pedestrian facilities. Project includes design of 1,450 lf of new sidewalks, the addition of crosswalks, and traffic calming elements along VT Route 36. Responsible to review and edit conceptual plans.

US Route 2 Pedestrian Improvements, East Montpelier, VT. Transportation Engineer for design of pedestrian enhancements as recommended in the Town's Scoping Study, also prepared by D&K. Project includes the design of sidewalk and crosswalk improvements, consolidation of driveway openings, property owner coordination to understand and mitigate concerns, and extensive VTrans coordination due to location along a state highway. The project is largely being funded through a TA Grant and administered

through the VTrans Municipal Assistance Bureau (MAB), and is being developed in accordance with the 2014 VTrans Municipal Assistance Bureau Local Projects Guidebook. Responsible for review of conceptual plans.

Warners Corner Sidewalk Project, Colchester, VT. Project Engineer for upgrades to traffic signal and design of associated sidewalk approaches. Existing equipment capabilities, deficiencies, and configuration were analyzed and upgrade options suggested. Designed pedestrian push button pedestals to provide accessibility where geometric constraints prevented the buttons from being mounted on traditional signal poles. Worked with utility providers to add utilities to project plans and to identify areas of conflict.

Safe Routes to School, VTrans. Project Engineer for retainer contract to assist VTrans and schools statewide to implement the Safe Routes to School Program (SRTS). Responsible for infrastructure improvements including planning for SRTS improvements for a Bicycle and Pedestrian Feasibility Study in Bristol and an Infrastructure Improvement Study in North Bennington to assist the Town with the SRTS grant application.

Alburgh Gateway Enhancement Project, Alburgh, VT. Transportation Engineer for study of a one-mile-long corridor through the Village on US Route 2. Identified traffic calming alternatives, improved pedestrian safety and mobility, and provided cost estimates. Project included a topographic field survey; identification of natural and cultural resources, right of way, property limits, and utilities; development of a Purpose and Need Statement, cost estimates, conceptual plans, and a public outreach program; and completion of a CE document. Alternatives included options to replace and add sidewalks, addition of crosswalks, gateway enhancements, replacement of signage, the shift of lane alignments along US Route 2, and the addition of bicycle lanes. Project was funded through a TE Grant and a Federal Earmark. Responsible for cost estimating and development of a conceptual plan.



Charlotte Brodie, CWS

Wetlands Scientist

Education: M.S., Botany, Field Naturalist Program, University of Vermont, 1988
B.S., Biology, Smith College, 1978

Registrations: Certified Wetlands Scientist: NH 244

Overview: Ms. Brodie is an interdisciplinary field scientist trained in environmental evaluation, interpretation, and monitoring. As a naturalist, she integrates information on the biotic and abiotic components of ecosystems for site descriptions, inventories, criterion-based evaluations, and impact evaluations. Her training and experience incorporate geology and geomorphology, soils chemistry, botany, vertebrate and invertebrate zoology, and hydrology. She specializes in wetlands analysis and has a thorough knowledge of state and federal regulations pertaining to wetlands and other waters of the United States.

Projects

Montpelier-Berlin Shared Use Pathway, Montpelier, VT.

Wetland Scientist for project to design and permit a 2.1-mile-long, 10-ft-wide section of pathway on the larger Central Vermont Regional Path. The path will include urban sections along city streets, crossings of major arterial roadways, retaining walls, drainage structures and private water and wastewater relocation. In addition to recreation, the path will provide direct connection to many destinations. This project is being developed through the VTrans Local Transportation Facilities (LTF) Section and follows the LTF Guide Book. Delineated wetlands, prepared ACOE 404 Permit application, and obtained state wetland permit.

US Route 2 Scoping Study, Central Vermont Regional Planning Commission, East Montpelier, VT.

Identified wetlands for the study to identify options, issues, and costs to develop safety improvements for pedestrians along US Route 2. The Dudley General Store, several commercial properties, and the post office are included in the project area. The project is largely funded through a TE Grant and administered through the VTrans Local Transportation Facilities (LTF) Section.

Three Rivers Transportation Pathway, St. Johnsbury, VT.

Field Naturalist for development of 1.1-mile-long, 10-ft-wide shared use pathway. Delineated and mapped wetlands and secured wetland permit. The project included design, right-of-way, utility coordination, final design, and contract document preparation. Project developed through Local Transportation Facilities (LTF) Program. Developed alternatives to avoid wetlands and historic resources and minimal property owner impacts. The project included the retrofitting of a former rail bridge for pedestrian traffic. The path follows the former Lamoille Valley Rail Corridor.

Knight Lane Sidewalk, Williston, VT.

Wetlands Scientist/Field Naturalist for design and construction phase services for over 400 lf of sidewalk in a suburban area. This project included survey, right of way, conceptual through final plans, bidding assistance, environmental resource impacts, and cultural resource review. This municipally managed project was developed through the VTrans LTF Section.

Safe Routes to School, VTrans.

Field Naturalist for retainer contract to assist VTrans and schools statewide to implement the Safe Routes to School Program (SRTS). The contract includes infrastructure improvements including planning, conceptual, preliminary, and final design; right-of-way documentation; utility coordination; and design services during construction. Assignments include West Pleasant Street

Sidewalk Design, Bristol; Bicycle and Pedestrian Feasibility Study, Bristol; Vine Street Signing and Pavement Marking Design, Northfield; and Brush Hill Road Signing and Pavement Marking Design, Williamstown.

Sidewalk Conceptual Alignment Update & New Analysis, Moretown, VT. Wetlands Scientist to update the 1996 Conceptual Alignment Analysis for Pedestrian Facilities. Project area includes the VT 100B corridor from Pony Farm Road to Bridge #4 over the Mad River, which is approximately 0.8 miles. Services included compiling base maps and documenting existing conditions; investigating local and regional concerns; identifying activity centers; developing conceptual alignments, utility conflicts, and natural and cultural resource constraints and permitting requirements; conducting an alternatives presentation meeting; developing preliminary cost estimates and a time line; and preparing a report.

Otter View Park, Middlebury Area Land Trust, Middlebury, VT. Wetland Scientist for creation of 17-acre public-use park. Project included field survey and wetland delineation, design of trail network, elevated boardwalk over wetland, parking lot, municipal sewer and water connections, and stormwater treatment facility. Project also included construction cost estimates and preparation of bid documents and technical specifications. Coordinated with federal, state, and local agencies for access and permit approval.

Cross and Railroad Street Sidewalks, Brighton, VT. Provided wetlands evaluation/identification, assessment, and permitting recommendations for planning and design of new sidewalks and improvements to existing sidewalks (0.9 miles), which were causing significant safety concerns for Town and nearby Brighton Elementary School. Project developed through Local Transportation Facilities (LTF) program and funded through FHWA Transportation Enhancement Grant and Town funds.

STP Walk (18) Sidewalk, Williamstown, VT. Provided wetlands evaluation/identification, assessment, and permitting recommendations for design of 1,740 ft of new sidewalk along Route 14, connecting the Post Office to Williamstown Industrial Park. Project is funded through a Transportation Enhancement grant.

Warners Corner Sidewalk Project, Colchester, VT. Provided wetlands evaluation/identification, assessment, and permitting recommendations for design and construction phase services for 4,725 lf of new sidewalk along portions of the four roadways intersecting at Warners Corner. Scope includes survey, right-of-way research, conceptual plans, right-of-way establishment, utilities, environmental resource impacts, preliminary and final plans, landscaping, cost estimates, and permitting. The project is a municipally managed project developed through the VTrans LTF Section.

Exit 16 Sidewalk Project, Colchester, VT. Delineation for wetlands, preparation of Conditional Use Determination (CUD) application, and provided advice on design/minimization of wetland impacts for design and construction phase services for 1,800 lf of new sidewalk along US Route 2/7 near Exit 16 of I-89. Scope includes survey, right-of-way research, conceptual plans, right-of-way establishment, utilities, environmental resource impacts, preliminary and final plans, streetscape improvements, cost estimates, and permitting. The project is a municipally managed project developed through the VTrans LTF Section and partially funded through a Transportation Enhancement (TE) grant.

Wetlands Delineation and Categorical Exclusion, SRTS Sidewalk Project, New Ipswich, NH. Provided Categorical Exclusion documentation and permitting services, which included review of wildlife habitat and endangered species. Project funded through the Safe Routes to School program and subject to the TE/CMAQ design requirements.



John Benson, PE

Environmental Engineer

Education: A.S., Architectural and Building Eng, Vermont Technical College, 1973

Registrations: Civil Engineer: VT 6534; ME 6808

Overview: Mr. Benson has over 40 years of experience in the design, management, and budgetary responsibility for projects involving land development, transportation, utility, site engineering, and environmental permitting. His experience encompasses civil/site engineering; architectural; mechanical/electrical design; energy conservation; and federal, state, and local environmental permitting. John's project experience encompasses feasibility studies, economic analyses, hydraulic studies, site and soil investigations, evaluation of wastewater, process design, pump stations, and design and construction inspection/administration. His responsibilities include preparation of permits and compliance with Agency of Natural Resources, Army Corps of Engineers, and the District Environmental Commission Permits/Programs.

Projects

Missisquoi Valley Rail Trail (formerly Central Vermont Rail Trail), VTTrans, St. Albans to Sheldon Junction, VT.

Project Manager for contract plans, specifications, and construction cost estimates. This 26.5-mile, multi-use path design included culvert repairs, fencing and gates, access control and signs, ditching, guard rails, development of limestone surface course provisions, parking areas design, and thorough bridge inspections. Prepared Categorical Exclusion (CE) document, including agricultural, archaeological, historic, water quality, land use, displacements, wetlands, air quality, noise, biological resources, hazardous wastes, and flood hazard investigations.

Three Rivers Transportation Pathway, St. Johnsbury, VT.

Permitting Specialist for development of 1.1-mile-long, 10-ft-wide shared use pathway. Project developed through Local Transportation Facilities (LTF) Program. Developed alternatives to avoid wetlands and historic resources and minimize property owner impacts. The project included the retrofitting of a former rail bridge for pedestrian traffic. The path follows the former Lamoille Valley Rail Corridor.

Bradford Sidewalk Enhancement, Bradford, VT.

Project Manager providing design and construction phase services for an approximate 1/3 of a mile sidewalk along the eastern side of Fairground Road. The sidewalk will provide safe pedestrian access between the Bradford Elementary School and Elizabeth's Park and the recreational fields adjacent to the park. Key issues in this project include identifying the preferred alignment for the sidewalk; controlling stormwater runoff; communication with adjacent property owners (trees in right-of-way which would impact design/construction); and strict project control due to a limited budget.

Elm Street Sidewalk, Derby, VT.

Management of engineering design services for a new 1.25-kilometer long sidewalk to be constructed along the south side of Elm Street. A new 190-meter spur will also be constructed to connect the new Elm Street sidewalk with the Derby Elementary School. Project team is working with municipal project manager and Town representatives to conduct preliminary engineering to complete project definition, develop conceptual plans and cost estimates; preliminary, right of way, construction plans and cost estimates. Project team will also provide necessary design engineering services during construction.

Vermont Granite Museum, Barre, VT. Design and permitting to support a new museum. Civil engineering design included water, sewer, stormwater requirements; wetlands screening; and design for utilities, roads, parking areas, pedestrian/bicycle pathway, and drainage. Responsibilities included local permitting, state permitting (water supply/wastewater disposal, permit-to-construct, stormwater discharge permit, general permit, stream alteration permit, 401 water quality certification, at-grade railroad crossing, Act 250 land use), and federal permitting (COE statewide permit).

Exit 16 Sidewalks Project, Colchester, VT.

Permitting Specialist for design and construction phase services for 1,800 lf of new sidewalks along US Route 2/7 near Exit 16 of I-89. Scope includes survey, right of way research, conceptual plans, right of way establishment, utilities, environmental resource impacts, preliminary and final plans, streetscape improvements, cost estimates, and permitting. The project is a municipally managed project developed through the VTrans LTF Section.

Belvidere Pedestrian Facility - Conceptual Analysis, Lamoille County Planning Commission, Belvidere, VT.

Project Manager for professional planning and conceptual design services for the Town of Belvidere, working with the Lamoille County Planning Commission (LCPC), to improve the safety and mobility for pedestrians and bicyclists using Route 109 between the Belvidere Central School and the Village Center.

Crescent Connector Road, Village of Essex Junction, VT.

Project Manager/Permitting Specialist for \$6.5 million Federal Highway Administration (FHWA) funded Crescent Connector Road project, a bypass around the east side of the Five Corners intersection for traffic that is travelling between Maple Street, Main Street, and Park Street. Scope of work includes design plans and cost estimates, permitting, right of way acquisition and utility relocation assistance, public outreach, preparation of bid documents, and engineering design services during construction. The project is administered through the VTrans Municipal Assistance Bureau (MAB).

Maidstone Lake Road, Maidstone, VT.

Environmental Manager to assist the Vermont Agency of Natural Resources, Department of Forests, Parks, and Recreation with improvements to 5.9 miles of Maidstone Lake Road. Improvements will upgrade the road to Class 3 Town Highway standards in order for it to be a dedicated Town Highway owned and maintained by the Town of Maidstone. Project is funded with \$500,000 through the 2009 Capital Construction Bill. Scope of services includes ground survey and base map preparation, identification of natural resources, permitting, preliminary and final designs, utility coordination, right of way investigations, public meetings, and bid and construction phase services.

Chittenden County Circumferential Highway, VTrans.

State and federal permitting for 16-mile limited access highway in Chittenden County. Permits included State Land Use Permits (Act 250), Stream Alteration (Title 19), Stormwater Discharge, 401 Water Quality Certification, Army Corps of Engineers 404 Permit, and Section 6(f) and 4(f) documentation. As part of the 404 permit process, assisted in design of three wetland mitigation complexes, two of which have been constructed.

Bennington Bypass, VTrans. Project Manager for environmental permitting for 10-mile bypass including the design and construction oversight of 14-acre wetland mitigation site. Provided management and coordination with state and federal regulatory agencies, public, technical staff, design engineers, Agency of Transportation, Federal Highway Administration, and various special interest groups. Facilitated and resolved major hurdle that developed in Army Corps of Engineers' permit process by bringing together EPA, ACOE, FHA, and Vermont Agency of Natural Resources



Peter Bero, PE

Structural Engineer

Education: M.S., Structural Engineering, Northeastern University, 2004
B.S., Civil Engineering, Northeastern University, 2001

Registrations: Professional Engineer: VT 59560; NH 14346

Overview: Mr. Bero is a Structural Engineer with 16 years of experience in the field of bridge and building structural engineering. His bridge replacement and rehabilitation engineering experience includes steel trusses, multiple span steel and concrete structures, and deck replacements. He has managed in-depth bridge inspections and ratings, prepared contract documents, cost, and quantity estimates, and performed shop drawing reviews and construction administration. He is knowledgeable of AASHTO and IBC procedures and standards.

Projects

Tilley Drive Recreational Path, South Burlington, VT. Bridge Engineer responsible for designing and drafting the structural components of a recreational path pedestrian bridge. The project connects two business parks, is over an environmentally sensitive area and consists of a timber superstructure supported on steel helical piles. The all timber superstructure consists of timber pile bent caps, stringers, decking and railing. The steel helical pile substructure supports the bridge at intermediate points while providing minimal disruption to the existing wetland area.

Waitsfield Village Covered Bridge Rehabilitation, Waitsfield, VT. Bridge Engineer for an alternatives analysis and final design for the rehabilitation of the Village or "Big Eddy" Covered Bridge. The bridge, originally constructed in 1833, is believed to be the oldest functioning covered bridge in Vermont. The bridge had served a vital function in transporting citizens and visitors to Waitsfield over the Mad River. The Town received a Transportation Enhancement grant to address the structural integrity of the bridge, specifically the cantilevered sidewalk, racking of the trusses, deteriorating wear planks, and spalling concrete. The final design for this project included removing the existing cantilevered sidewalk and constructing a completely new pedestrian bridge directly

adjacent to the existing covered bridge. The new pedestrian bridge is aesthetically connected to the existing covered bridge yet is completely free standing. Numerous aesthetic details were added to the new pedestrian bridge to enhance the project.

Emergency Bridge Repairs to Two Bridges, Whitingham, VT. Project Manager for the design of emergency repairs to one bridge and the replacement of a second bridge to remediate the damage from Tropical Storm Irene. The emergency repairs included replacing missing stones and grouting to stabilize a bowing abutment. The replacement included designing a new 37-ft single span bridge comprised of a prefabricated timber deck on steel stringers and new cast-in-place concrete abutments. The span could not be lengthened due to site conditions, so a very thin deck configuration was designed to provide as much freeboard above the river as possible.

Alstead Vilas Pedestrian Bridge, Alstead, NH. Bridge Engineer for an inspection of a 1920's era pedestrian steel truss bridge located over a recreational impoundment dam. Firm staff visited the site to document and evaluate the bridge substructure and superstructure, approach pathways, and railings associated with the bridge. Bridge components were load rated and reviewed against current code requirements for a pedestrian bridge. Staff also performed a desktop review

of available plans, records of repairs, and information pertaining to the substructure (dam below the bridge). D&K met with the Town and submitted a report summarizing existing conditions, deficiencies and recommendations.

Country Club Bridge, Dartmouth College, Hanover, NH. Bridge Engineer for a study and conceptual design to rehabilitate or replace a 220-foot long pedestrian bridge spanning a deep (45') ravine. The existing bridge bisects the golf course and is the primary link for players, carts, staff, and maintenance vehicles. The existing six-span structure, with steel trusses and framework, and timber deck, was constructed around 1918. The study determined if this aging structure can be cost effectively widened and strengthened to support current pedestrian loads and two golf cart travel lanes. Alternatives and material options for replacing the bridge were studied, including the use of steel, aluminum or concrete. Various truss configurations were evaluated in order to determine the most economical truss type. Funding for the project is provided by the College; the project is being completed in a short time frame to minimize damage to the course and to minimize interruptions to play. The completed and submitted study recommended a complete replacement of the existing bridge. The recommended option was to construct a new two-span steel truss. The truss will be supported on a new cast-in-place center pier and end abutments.

Quechee Covered Bridge #6, Bridge Replacement, Hartford, VT. Senior Bridge Engineer for design and construction phase services for the replacement for a covered bridge over the Ottauquechee River. The bridge was damaged by Tropical Storm Irene and D&K recommended replacement. Services included developing and analyzing alternatives, preliminary engineering, permitting, an H&H study, final design, bid phase services, construction administration, and full-time construction observation. The new bridge is an 87-ft-long, single span bridge comprised of precast concrete beams and a cast-in-place concrete deck supported on cast-in-place concrete abutments.

Laconia Lakes Business Park, Laconia, NH. Bridge Engineer for design in support of a pedestrian bridge and trail network within a heavily vegetated section of an existing commercial area. Services included attending meetings and completing a site walk with representatives from the Lakes Business Park Committee. The design incorporates the assessed needs and desires of the City and prospective trail users. The final design consists of timber stringers, decking and railing supported on cast-in-place concrete abutments.

Slope, Drainage, Culvert Repairs (6), LVRT, VTrans Rail, St. Johnsbury, VT. Assistant Project Manager for rail embankments slope failure, culvert washouts, and silt and sediment deposition at 6 sites. Provided senior guidance on and quality control reviews of design of new culverts, slope stability repairs, drainage improvements, and culvert and trail surface replacement. Slopes requiring stabilization ranged up to 65 ft in height and 125 ft in length. Services included survey, hydraulic analysis, geotechnical engineering, wetland delineation, permitting, and contract documents.

Retaining Wall Evaluation, Sidewalk and Crossing Scoping Study, Wilmington, VT. Structural Engineer for evaluation of an existing retaining wall in relation to a transportation study identifying safe, feasible, attractive, and affordable improvements to extend Wilmington's network of sidewalks and to make the village safer and welcoming for pedestrians. The study includes identifying options, issues, and costs associated with the construction of pedestrian facilities and provides design recommendations and an implementation strategy. Project is funded through the Transportation Alternatives Program, administered through VTrans LTF Section, and developed in accordance with the LTF Guidebook.

The Bridges Family Resort, Warren, VT. Lateral analysis on steel framed walkways.