

# NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

2024 Statewide On-Call Preliminary Engineering Locally Administered Local  
Public Agency (LPA) Qualifications-Based Selection Contracts

FEBRUARY 1, 2024

**FOR MORE INFORMATION CONTACT:**

**Robert Faulkner, PE, Vice President**

CHA Consulting, Inc.

11 King Court

Keene, NH 03431-4648

P: (603) 460-5006

E: [rfaulkner@chasolutions.com](mailto:rfaulkner@chasolutions.com)





February 1, 2024

C.R. Willeke, PE  
Municipal Highways Engineer  
New Hampshire Department of Transportation  
The Bureau of Planning & Community Assistance  
John O. Morton Building  
7 Hazen Drive, PO Box 483  
Concord, NH 03302-0483

**Re: Proposal for Statewide On-Call Preliminary Engineering Prequalified List of Consultants for locally administered Local Public Agency (LPA) Qualifications-Based Selection Contracts**

Dear Mr. Willeke,

CHA Consulting, Inc. (CHA) is pleased to submit our qualifications to provide professional engineering services for locally administered LPA qualifications-based selection contracts. Since the late '90s, when CHA completed the TEA-21 funded Industrial Heritage Trail project for the City of Keene, **we have been involved in nearly a dozen municipal projects funded through the various New Hampshire Department of Transportation (NHDOT) sponsored programs, which now fall under the LPA Program.** Many of these projects have been completed under the LPA Program, including rail trail projects, bridge rehabilitations or replacements, sidewalks, streetscapes, and roundabout intersection improvement projects. The LPA Program is a great conduit to provide much-needed funding support for New Hampshire municipalities to help better their communities by improving safety and mobility and performing other enhancements to their transportation infrastructure. To benefit from this funding, the municipal sponsor and design engineer need to follow the specific requirements and guidelines detailed in the LPA Manual. **Our project team is very familiar with these requirements and has helped our clients navigate through the requirements** and, in some cases, limitations of the LPA Program.

We propose tailoring the specific staff for any projects issued through the LPA program based on the type of project and its own complexity. **CHA currently has four LPA-certified professional engineers and technicians with nearly 100 years of combined experience that can lead a wide variety of projects.** Supporting our LPA-certified engineers and project managers is a very diverse project team with expertise in roadway and bridge design, complete streets and corridor studies, geotechnical and hydraulic engineering, scour analysis and countermeasure design, drainage design and stormwater management, ADA compliance, environmental evaluations and permitting, surveying, and alternative project delivery and procurement.

This support includes our subconsultants who have worked with CHA over the years on many of the projects highlighted in our qualifications. Comprehensive Environmental Incorporated (CEI) will lead environmental evaluations and permitting. Independent Archaeological Consulting (IAC) and Preservation Company (PC) will lead cultural and historic assessments respectively. Huntley Survey and Design, PLLC (HSD), will be responsible for any topographic survey and right-of-way needs. CHA's decades-long relationships with these firms and their principals will result in the **streamlined, cohesive execution of any project** that we may be selected for under the LPA Program.

We trust that our qualifications demonstrate our capabilities to provide engineering services to local municipalities under the LPA Program so that we can continue to fulfill our mission to **Responsibly Improve the World we Live in.**

Sincerely,

A handwritten signature in blue ink, appearing to read 'R. Faulkner', is written over a white background.

Robert J. Faulkner, PE  
Vice President

# TABLE OF CONTENTS

**Part 1** Project Understanding and Approach

**Part 2** Organizational Chart

**Part 3** Project Team

**Part 4** References

## **Appendicies**

Section 1 - Resumes

Section 2 - Applicable Work Experience



*Winchester, Main, and Marlboro Street Intersection Preliminary and Final Design Improvements, Keene, NH*

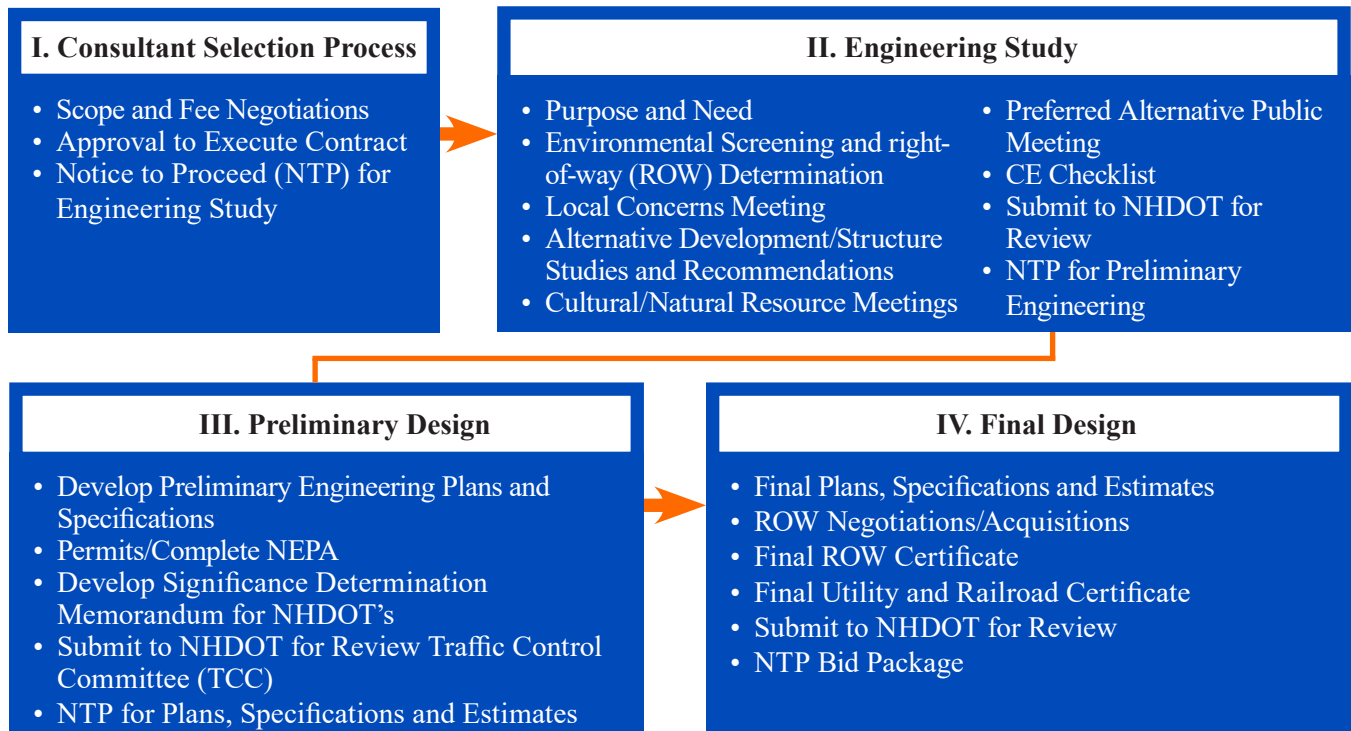
**PART 1 PROJECT UNDERSTANDING AND APPROACH**

## PROJECT UNDERSTANDING & APPROACH

LPA projects take on many forms and are typically funded through one of the programs listed below. In addition to these, there may be some other NHDOT sponsored projects that will still follow the general guidelines and processes detailed in the LPA Manual:

- Congestion Mitigation & Air Quality (CMAQ)
- Transportation Enhancement (TE)
- Safe Routes to School (SRTS)
- Scenic Byways (SB)
- Surface Transportation Program (STP)
- Highway Safety Improvement Program (HSIP)
- Emergency Relief (ER)
- Municipal Off-System Bridge Replacement and Rehabilitation (MOBRR)

The LPA project development process for design has four major phases as outlined below:



**CHA's project staff developed several projects through NHDOT's LPA, TE, CMAQ, SRTS, and HSIP programs** and recently completed the Cheshire Rail Trail Loop III project for the City of Keene, which was funded through a TAP grant. Other projects include:

- The Roundhouse T Multi-Use Path
- Cheshire Rail Trail North
- Maple Avenue Roundabout projects, City of Keene

Other LPA-type projects CHA completed under similar NHDOT program funding include:

- Pleasant Street Safe Routes to School
- Newport Road Streetscape
- Newport and County Road Intersection
- Sidewalk Improvement projects (New London, NH)

Other municipally funded NHDOT projects include:

- Carlton Covered Bridge Rehabilitation
- Paterson Hill Road Bridge Rehabilitation



*The preferred alignment of the Roundhouse T Phase II Multi-Use Trail in Keene traversed the Mill Creek as well as previously contaminated land owned by Eversource. CHA worked closely with the city, Eversource and New Hampshire Department of Environmental Services (NHDES) to secure the necessary ROW and permitting to construct the project in time to meet the LPA funding deadline.*

Through these projects, we have developed a thorough understanding of the design, permitting, and construction processes that have evolved over the years. Since our first TEA-21 funded project constructed in the late '90s, the Industrial Heritage Trail in Keene, federally funded municipally managed projects under the current LPA Program have placed additional responsibilities on all parties involved, including the municipality sponsoring the project, the engineer designing it, and the contractor constructing it. These requirements are outlined in the LPA Manual. Projects designed and constructed under this program must be overseen and implemented by professionals who have received training from and are certified by NHDOT. CHA has **four LPA-certified professional engineers with nearly 100 years of combined experience** that can lead a wide variety of LPA projects: John Parrelli, PE; Ellen Moshier, PE; Peter Perkins, PE; and Sam Molner. Highlights of some of the LPA specific requirements are as follows:

### Design and Environmental Documentation

- The Stewardship Agreement between USDOT, FHWA, and NHDOT spells out specific roles and responsibilities of all parties, placing a significant oversight and approval role on NHDOT for the prosecution and approval of the work. This oversight helps verify that the PS&E quality of each project is not compromised and involves a more detailed review by NHDOT during design submissions.
- Plan development is more in line with the requirements of a typical NHDOT type project.
- Federally funded projects undergo a more rigorous environmental review process, and the project's environmental classification must be obtained before advertising at the PS&E submission.
- Easements or necessary ROW takings must be secured before advertising a project for construction with the ROW certificate in place and signed by the municipal official. However, ROW negotiations



*The Maple Ave Roundabout project in Keene was funded by a HSIP Program grant and needed to be fast-tracked to meet HSIP Funding deadlines. CHA completed the design and permitting in just over three months.*



*CHA designed the replacement of the bridge carrying Route 122 over the Blackstone River in Northbridge, MA using accelerated bridge construction techniques (ABC). The design also included an innovative excavation support solution to accommodate construction staging and utility constraints.*

and acquisitions may not begin until the final design phase. In addition, these easements or takes must also be taken “in fee” and can no longer be “handshake” agreements.

- NHDOT and FHWA must provide final approval on a project and issue a NTP before advertising a project.

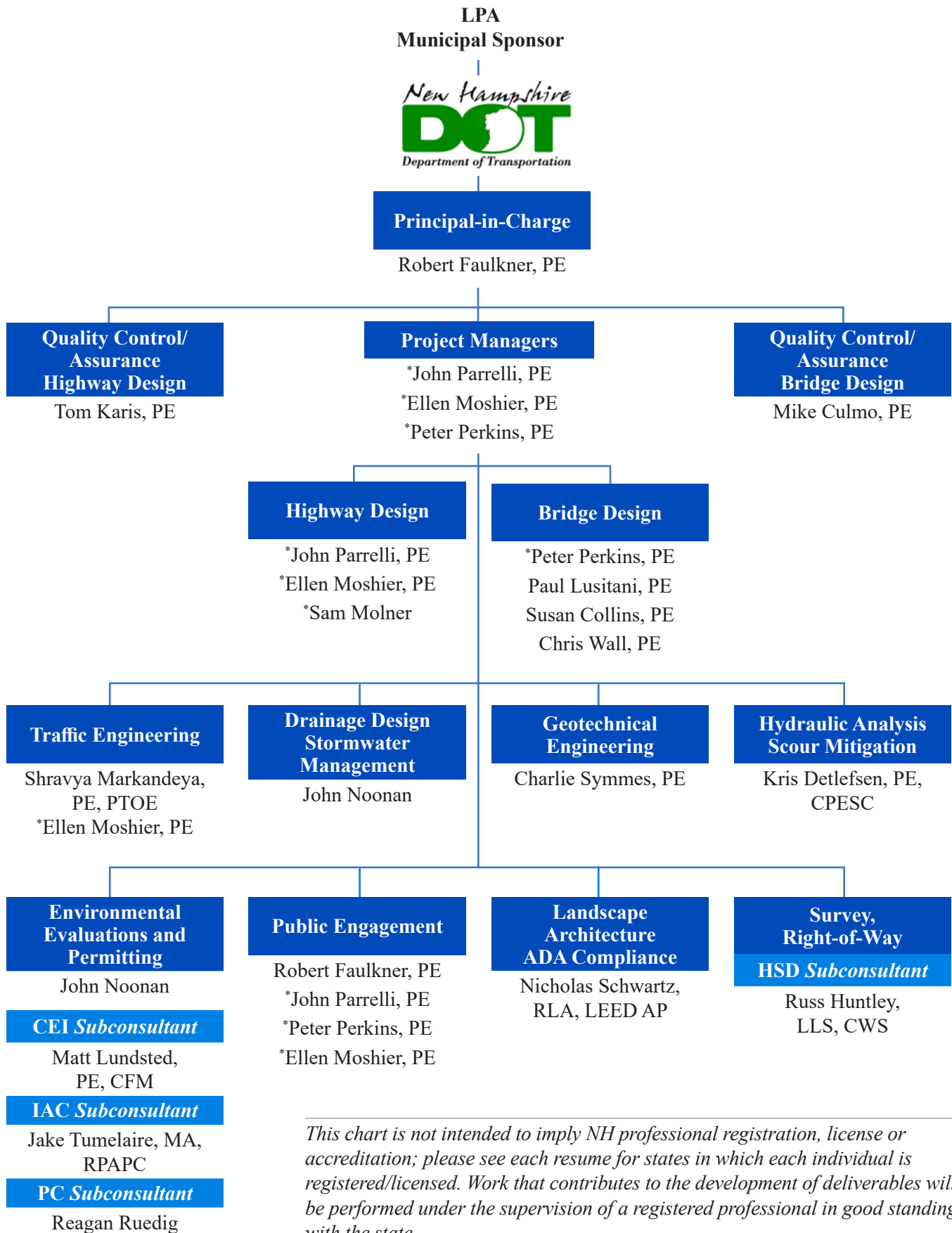
While understanding the technical requirements of these federal aid programs is essential to the successful execution of the work, it is perhaps more important to understand the impacts that these requirements will likely have on design and construction schedules and costs, as well as the project administration time and effort necessary from the sponsor.

- Simplified “municipal” non-LPA construction plans allow the engineer to develop a plan set that conveys the design in a sufficient and succinct manner with relatively few numbers of plan sheets compared to a typical NHDOT project of the same type. This approach often results in lower design fees from the consultant. Under the LPA program, plans and specifications need to be developed more in line with a standard NHDOT project of the same type, which typically results in higher design fees from the consultant.
- Increased record keeping through the design process will place an additional administrative burden on the sponsor.
- New ROW requirements can extend the ROW negotiation process and costs and potentially extend the overall design process.
- A more rigorous environmental review process can result in an extended permitting process that can extend the project design process.

It is important that both the engineer and project sponsor understand the specific requirements for projects funded through the LPA program and the scope, level of effort, fee, and schedule implications of these requirements. Straying from these specific requirements can jeopardize NHDOT/FHWA reimbursement to the sponsor.

## PART 2 ORGANIZATIONAL CHART

# ORGANIZATIONAL CHART



*This chart is not intended to imply NH professional registration, license or accreditation; please see each resume for states in which each individual is registered/licensed. Work that contributes to the development of deliverables will be performed under the supervision of a registered professional in good standing with the state.*

*\* = LPA Certified*



PART 3 PROJECT TEAM

## PROJECT TEAM

Projects funded through NHDOT's LPA program include a variety of project types such as isolated sidewalk and intersection improvements, roadway improvements, bridge rehabilitations and replacements, multi-use trail and bicycle accommodations, and more comprehensive projects that could include a combination of all roadway, bridge, trail and intersection improvements, rehabilitations or replacements.

CHA's proposed project team members have successfully completed numerous projects, funded through NHDOT's Municipally Managed Process, including the LPA, TE, CMAQ, Bridge Aid, HSIP, and SRTS programs. These projects have included the design of roadways, intersections/roundabouts, bridges, and recreation trails.

**CHA will lead any LPA projects from our Keene office, where most of the planning and design work will be performed.** We will draw on other resources from our Nashua, NH; Albany, NY; Norwell, MA; and Rocky Hill, CT offices, as well as our subconsultants for other services as necessary, to complete the environmental evaluations, traffic engineering, ROW and surveying services, geotechnical investigations, and bridge design. We propose tailoring the specific staffing for any projects issued through the LPA program based on the type of project and its respective complexity. The staffing table shown on the following page indicates the key personnel and respective roles that they will play in the various assignments.

As the **principal-in-charge, Robert Faulkner, PE**, will verify that proper staffing resources are allocated to each respective project, adherence to CHA's policies and procedures, and meeting our clients' expectations. Rob will also be available for scoping and fee negotiations support, and facilitating public engagement efforts necessary for each project.

Our three project managers include **John Parrelli, PE, Ellen Moshier, PE, and Peter Perkins, PE.** **All are LPA-certified and possess strong technical capabilities in addition to their project management skills.** To this end, they can also serve as the technical leads on respective bridge and highway projects, thus providing a more cost-effective, less burdensome project management structure. As with our project managers, **our quality assurance leads will depend on the respective type of project that is being undertaken.** **Tom Karis, PE, and Mike Culmo, PE, CHA's chief highway and bridge engineers, will undertake these roles accordingly.** Mike is also highly experienced in alternative project delivery and procurement and will lead these efforts accordingly.

**Our highway engineers include Ellen Moshier, PE, John Parrelli, PE, and Sam Molner.** Ellen has a diverse background, including transportation planning, traffic engineering, and **complete streets**. John has nearly 25 years of experience and has dedicated much of his career at CHA working on NHDOT projects. **Susan Collins, PE**, is an **NBIS-approved bridge inspection team leader** and, as such, will lead any **bridge inspection** efforts in addition to supporting our **bridge design** and **structural engineering** efforts. **Paul Lusitani, PE**, and **Chris Wall, PE**, will support our **bridge design** efforts and lead any **bridge load ratings**.

**Kris Detlefsen, PE, CPESC**, has performed hundreds of **hydraulic analyses** and **scour evaluations** on bridges throughout New England and will lead those efforts accordingly. **Charlie Symmes, PE**, will perform any **geotechnical evaluations and engineering**. **Traffic engineering and analysis** will be led by **Shravya Markandeya, PE, PTOE**, and **Ellen Moshier, PE**. Rounding out our in-house staff is our registered **landscape architect, Nicholas Schwartz, RLA, LEED AP**, who, in addition to leading any **streetscape** or project **landscaping amenities**, is well-versed in **ADA compliance** and will lead those efforts accordingly.

Our subconsultants include HSD which will be responsible for topographic survey, ROW determination, and wetland delineation. CEI will lead any necessary environmental assessments, documentation and permitting needs. Cultural and historical resource assessments will be completed by Jake Tumelaire of IAC and Reagan Ruedig of PC respectively.

CHA also retains several subconsultants through standing term agreements for specialty services such as bridge historical assessments and evaluations and non-destructive material testing.

# HIGHWAY AND BRIDGE DESIGN ENGINEERING SERVICES IN SUPPORT OF LPA PROJECTS

✕ Leads Effort   ● Support Role



KEY PERSONNEL	PROJECT ROLE	Years of Experience	Years With Firm	LPA Certified	Project Management	Highway Design	Bridge Design	Structural Engineering	Alt. Procurement Methods	Corridor Study Planning	Bridge Inspection	Bridge Load Rating	Hydrology	Environmental	Traffic Analysis	Geotechnical	Survey/Right-of-Way	Public Involvement	
Robert Faulkner, PE	Principal-in-Charge	37	28		●	●	●			●									✕
John Parrelli, PE	Project Manager, Highway Lead	27	24	✕	✕	✕				●									✕
Ellen Moshier, PE	Project Manager, Traffic Engineer, Complete Streets	23	4	✕	✕	●				✕					●				✕
Peter Perkins, PE	Project Manager, Bridge Lead	38	28	✕	✕		✕	✕			●	●							✕
Tom Karis, PE	Quality Assurance (Highway)	37	37			●			●						●	●			
Mike Culmo, PE	Quality Assurance (Bridge)	39	27				●	●	✕		●	●				●			
John Noonan	Drainage Design/Stormwater Management	18	1			●				●			●	●					
Paul Lusitani, PE	Bridge Engineer	24	23				✕	✕				✕							
Susan Collins, PE	Bridge Engineer	16	16				●	●			✕	●							
Chris Wall, PE	Bridge Engineer	14	6				✕	✕			●	✕							
Sam Molner	Highway Design Technician	6	6	✕		●													
Kris Detlefsen, PE, CPESC	Hydraulic Design/Scour Mitigation	26	26										✕	●					
Charlie Symmes, PE	Geotechnical Engineering	23	23					●											✕
Shravya Markandeya, PE, PTOE	Traffic Engineering & Complete Streets Lead	15	3							●						✕			
Nicholas Schwartz, RLA, LEED AP	Landscape Architect/ADA Compliance	32	29			●				●									●
SUB-CONSULTANTS																			
Matt Lundsted, PE, CFM - CEI	Environmental Assessments/Permitting	35	25												✕				
Russ Huntley, PLS, CW - HSD	Survey and ROW	33	5											●					✕
Jake Tumelaire, MA, RPAPC - IAC	Cultural Resources	18	15											●					
Reagan Ruedig - PC	Historic & Scenic Resources	16	14											●					

## PART 4 REFERENCES

## REFERENCES

**Kürt Blomquist, PE**  
**Public Works Director**

**City of Keene, New Hampshire**

350 Marlboro Street

Keene, NH 03431

Tel: 603.357.9870 ext 6300

Email: [kblomquist@ci.keene.nh.us](mailto:kblomquist@ci.keene.nh.us)

**Kimberly Hallquist**  
**Town Administrator**

**Town of New London, New Hampshire**

375 Main Street

New London, NH 03257

Tel: 603.526.4821

Email: [townadmin@nl-nh.com](mailto:townadmin@nl-nh.com)

**Alan Twarog, MCPPO**  
**Engineering Superintendent**

**Town of Greenfield, Massachusetts**

189 Wells Street

Greenfield, MA 01301

Tel: 413.772.1528 ext 6104

Email: [alan.twarog@greenfield-ma.gov](mailto:alan.twarog@greenfield-ma.gov)

APPENDICES SECTION 1 - RESUMES

## RESUMES

### Robert Faulkner, PE | **Principal-in-Charge**

**Education:** University of Hartford, CT, B.S. in Civil Engineering. **Registrations:** Professional Engineer in NH, CT, MA, ME, MI, VT; American Society of Civil Engineers.

Rob brings nearly 37 of years experience in civil/site and infrastructure design to the project team. Since joining CHA in 1996, he has served as the project manager and senior design engineer on numerous NHDOT-funded projects and other municipal and private sector land development projects throughout New England. In addition to his management and design experience, Rob has exceptional presentation skills, regularly presenting design projects, many of them controversial, at public information meetings and public hearings. Representative project experience includes:

#### *City of Keene, NH*

- Cheshire Rail Trail Loop III (LPA/TAP)
- Route 10 over Ash Swamp Brook (Bridge Aid)
- Roundhouse T Multi-Use Trail Project (LPA/TEA-21)
- Cheshire Rail-Trail North (LPA/TEA-21)
- Industrial Heritage Trail Design (TEA-21)
- Spring Street Bridge over Beaver Brook (Bridge Aid)

#### *Town of New London, NH*

- Pleasant Street Sidewalk Improvements (LPA/SRTS)
- Newport/County Road Intersection Improvements (LPA/CMAQ)
- Newport Road Sidewalk and Streetscape Improvements (TEA-21)

#### *NHDOT*

- Route 101 Improvements - Keene 41590
- F.E. Everett Turnpike Widening, 13761 & 13761D
- Newington Dover Design Spaulding Turnpike & Little Bay Bridges 11238
- Spaulding Turnpike Upgrades, Rochester 10620D

### John Parrelli, PE | **Project Manager, Highway Design Lead**

**Education:** Clarkson University, NY, B.S. in Interdisciplinary & Eng. Mgmt Clarkson University, NY, B.S. in Civil Engineering. **Registrations:** Professional Engineer in NH; LPA Certified.

John has 27 years of highway, site, and drainage design experience. For the last 17 years, he has worked on NHDOT and local municipality projects, taking the lead in designing some of CHA's LPA-funded projects, such as the multi-use trail projects and roundabouts in

Keene and New London. John's various experience in highway and civil site design provides him with a well-rounded background. Representative project experience includes:

#### *City of Keene, NH*

- Cheshire Rail Trail Loop III (LPA/TAP)
- Route 10 over Ash Swamp Brook (Bridge Aid)
- Roundhouse T Multi-Use Trail Project (LPA/TEA-21)
- Cheshire Rail-Trail North (LPA/TEA-21)
- Maple Avenue Roundabout (LPA/HSIP)

#### *Town of New London, NH*

- Pleasant Street Sidewalk Improvements (LPA/SRTS)
- Newport/County Road Intersection Improvements (LPA/CMAQ)
- Newport Road Sidewalk and Streetscape Improvements (TEA-21)

#### *NHDOT*

- Route 101 Improvements - Keene 41590
- Route 108, Durham-Newmarket 13080
- Base Hill Road Roundabout, Keene 26765
- F.E. Everett Turnpike Widening, 13761 & 13761D

### Ellen Moshier, PE | **Project Manager, Highway Engineer, Traffic Engineer, Complete Streets**

**Education:** University of Massachusetts, MA, B.A. in Civil & Environmental Engineering. **Registrations:** Professional Engineer in NH, MA, CT; LPA Certified.

Ellen has 23 years of experience in transportation engineering for numerous public and private-sector clients in New England. She has led and overseen complex projects requiring creative solutions in a constrained multimodal environment. Ellen is responsible for complete streets designs, operational analyses, traffic operational analysis, traffic management plans, and pedestrian and bicycle operational analyses and design. She is proficient in AutoTURN, Synchro/SIM Traffic, and highway capacity software. Representative project experience includes:

#### *NHDOT*

- Route 101 Improvements - Keene 41590
- F.E. Everett Turnpike Widening, 13761D

#### *MassDOT*

- MassDOT, Boston Route 203 (Morton Street) Intersection Improvements
- Boston Planning and Development Agency, MA, Allston-Brighton Mobility Study
- MassDOT, City of Chicopee, Fuller Road Reconstruction Project

- Town of Hingham, MA, Derby Street Improvement Project
- Town of West Brookfield, MA, Town Center Complete Streets

**Peter Perkins, PE | Project Manager, Bridge Lead**

*Education:* University of Connecticut, CT, B.S. in Civil Engineering. *Registrations:* Professional Engineer in CT, MA, ME, NH; LPA Certified.

Peter serves as a structural engineer and project manager on highway and railroad bridge projects. His 38 years of experience encompasses all aspects of bridge design and construction, including surveying, condition inspection, planning, construction inspection, and construction conflict resolution. Representative project experience includes:

*City of Keene, NH*

- Route 10 over the Ash Swamp Brook (Bridge Aid)
- Spring Street over Beaver Brook (Bridge Aid)
- Industrial Heritage Trail Design (TEA-21)

*NHDOT*

- Newington Dover Design - Spaulding Turnpike & Little Bay Bridges 11238
- Sewalls Falls Road Bridge (Bridge Aid)
- 10620-D, Final Design of the Spaulding Turnpike, Rochester

*Town of Greenfield, MA*

- Nash's Mill Road over Green River Bridge Replacement
- MassDOT Route 122 over Blackstone River

**Tom Karis, PE | Quality Control/Assurance Highway Design**

*Education:* Clarkson University, NY, B.S. in Civil Engineering. *Registrations:* Professional Engineer in IN, CT, FL, GA, IL, MA, NC, NH, NY, OH, OK, PA, SC, TX, VA, VT.

Tom is a veteran project manager providing more than 37 years of transportation infrastructure design, construction, and management experience. As CHA's Chief Highway Engineer, he has involvement in, or direct responsibility for, all types of projects involving public and private, including field supervision, preliminary and final design, constructability reviews, special studies, task forces, forensic engineering and expert opinion, and technical publications and presentations. Tom has extensive knowledge of federal policies and procedures and their application to state initiatives. Representative project experience includes:

*NHDOT*

- Newington-Dover 11238-Q
- Conway Countermeasure Design

**Mike Culmo, PE | Quality Control/Assurance Bridge Design**

*Education:* University of Connecticut, CT, M.S. in Structural Engineering; University of Connecticut, CT, B.S. in Civil Engineering. *Registrations:* Professional Engineer in NH, CT, MA, MD, ME, RI, UT.

Mike serves as CHA's Chief Bridge Engineer, a specialist in technical excellence for the firm's bridge business line. He has extensive experience in the design of roadways and bridges (including railroad bridges) with specialized expertise in ABC technologies and alternative delivery contracting methods (including design-build and construction manager general contractor). He is responsible for overseeing quality control of design activities at CHA and directing design teams on new expressway interchanges, new bridge designs, and bridge preservation. Representative project experience includes:

*MassDOT*

- Preliminary Design and Owner's Representative, 93Fast14 Bridge Replacement Project (Design-Build and ABC Project), Medford, MA
- MassDOT, SR 24 over the Taunton River Superstructure Replacement, Raynham/Taunton, MA
- Rehabilitation of the I-91 Viaduct in Springfield, MA

*CTDOT*

- List 20-21, Replacement of Bridge No. 03469, I-395 NB over Tracy Road, Killingly, CT (2011-2016)

**John Noonan | Drainage Design/Stormwater Management**

*Education:* Clarkson University, NY, B.S. in Civil & Environmental Engineering. *Registrations:* Subsurface Licensed Designer - NH, Engineer-in-Training.

John has 18 years of diverse civil engineer experience including civil site design for residential and commercial projects, septic system design, roadways and drainage systems design as well as field work including surveying, percolation tests/calculations, stakeouts, septic/sewer inspections, as-built drawings, registry research, and on-site construction observation. John has served as a lead civil-site designer providing project management of commercial and residential site development, which includes all permitting and design for construction of buildings, parking lots, roadways, drainage appurtenances, and site utilities. Representative project experience includes:

*NHDOT*

- Route 101 Reconstruction, Keene 41590

*Rhode Island Airport Corporation*

- South Cargo Ramp Development

*Other*

- U-Haul of Keene Site Design





- Timberland Woods subdivision
- Plane View Senior Housing Development

**Paul Lusitani, PE | Bridge Engineer**

**Education:** Central Connecticut State University, CT, B.S. in Civil Engineering Technology, Tunxis Community Technical College, CT, A.S. in Technological Studies. **Registrations:** Professional Engineer in CT.

Paul has 24 years of structural engineering experience with a focus on the design of short and intermediate-span steel bridges. He performs bridge load rating analyses and bridge inspections and develops construction drawings for rehabilitation and new construction projects. Representative project experience includes:

*City of Keene, NH*

- Route 10 over the Ash Swamp Brook (Bridge Aid)

*NHDOT*

- Sewalls Falls Road Bridge (Bridge Aid)
- 10620-D, Final Design of the Spaulding Turnpike, Rochester

*Town of Vernon, VT*

- Central Park Road Culvert Replacement

*Town of Greenfield, MA*

- Nash's Mill Road over Green River Bridge Replacement

*MassDOT*

- Route 122 over Blackstone River

**Susan Collins, PE, NBIS | Bridge Engineer**

**Education:** Clarkson University, NY, B.S. in Civil & Structural Engineering; FHWA Safety Inspection of In-Service Bridges; FHWA Fracture Critical Inspection Techniques for Steel Bridges. **Registrations:** Professional Engineer in NY, ME.

Susan has over 16 years of experience at CHA, performing structural inspections. She has been responsible for bridge design, cost estimation, shop drawing review, and all aspects of scour work. Susan has evaluated structures for scour susceptibility and developed plans of action, scour countermeasures, estimates, and specifications. Representative project experience includes:

*NYSDOT*

- Region 1, 2018-2019 1 Biennial and Interim Bridge Inspection

*MaineDOT*

- NBIS Inspection of 85 Bridges

**Chris Wall, PE | Bridge Engineer**

**Education:** University of Connecticut, CT, M.S. in

Civil Engineering with a Concentration in Structural Engineering; University of Connecticut, NY, B.S.E. in Civil Engineering. **Registrations:** Professional Engineer - NH, MA, ME, CT; FHWA-NHI-130055, Safety Inspection of In-Service Bridges (Refresher Course: December 2016); FHWA-NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges; OSHA 10-Hour Training Program, Construction.

Chris has 14 years of experience and is responsible for the design, schedule, and budget for multiple bridge projects. He also provides assistance with design calculations, estimates, plans, and submissions. Chris is an experienced bridge inspector, having coordinated inspections of various types of transportation structures. He has prepared condition reports and performed structural analysis to rate bridges. Representative project experience includes:

- NHDOT, Route 101 Improvements - Keene 41590
- MassDOT, Complex Bridge and Tunnel Inspections, District 6
- MBTA, Bridge Inspections
- MTA, Tunnel Inspections

**Sam Molner | Highway Design Technician**

**Education:** University of Hartford, B.S. in Civil Engineering (in progress). **Registrations:** LPA Certified. Since joining CHA, Sam has dedicated much of his career to working NHDOT projects supporting our highway design and drainage effort. Representative project experience includes:

*City of Keene, NH*

- Cheshire Rail Trail Loop III (LPA/TAP)

*NHDOT*

- Route 101 Improvements - Keene 41590
- F.E. Everett Turnpike Widening, 13761 & 13761D

*MaineDOT*

- US Route 1 Multi-use Path Preliminary Design, Yarmouth

**Kris Detlefsen, PE, CPESC | Hydraulic Design/Scour Mitigation**

**Education:** Utah State University, UT, M.S. in Civil & Environmental Engineering; SUNY College of Environmental Science and Forestry, NY, B.S. in Natural Resource Engineering. **Registrations:** Professional Engineer in NY, GA; Certified Professional in Erosion and Sediment Control.

Kris has over 25 years of experience with hydrologic and hydraulic applications. He is actively involved in bridge scour assessments, dam-break modeling, floodplain evaluations, watershed studies, and sediment and erosion control planning. Representative project experience includes:

#### *City of Keene, NH*

- Route 10 over the Ash Swamp Brook (Bridge Aid)
- Spring Street Over Beaver Brook Bridge Replacement (Bridge Aid)

#### *NHDOT*

- Statewide Bridge Scour Evaluation
- Conway Countermeasure Design

#### **Charlie Symmes, PE | Geotechnical Engineering**

**Education:** Rensselaer Polytechnic Institute, NY, Geotechnical Engineering Graduate Coursework; Virginia Polytechnic Institute & State University, VA, B.S. in Civil Engineering. **Registrations:** Professional Engineer in CT, GA, ME, NY, VA, VT.

Charlie has 23 years of experience working in the geotechnical engineering field and is currently the leader of CHA's Geotechnical Group. He has been involved in the inspection of construction, inspecting and coordinating subsurface explorations, and preparing and quality control of geotechnical reports and other project deliverables. His experience includes slope stability modeling and design of slope stabilization, landslide emergency response engineering, forensic investigations, settlement and bearing capacity analysis, dam inspection/analysis, and design of deep foundations and earth retaining systems. Representative project experience includes:

#### *NHDOT*

- Route 101 Improvements - Keene 41590
- Statewide Bridge Scour Evaluation
- Newington-Dover 11238-Q
- Vermont Agency of Transportation, Highway Resurfacing Program

#### **Shravya Markandeya, PE, PTOE | Traffic Engineering**

**Education:** Jawaharlal Nehru Technological University, India, B.T. in Civil Engineering; Cornell University, NY, M.E. in Civil Engineering; Harvard Business Analytics Program, Executive Certificate. **Registrations:** Professional Engineer in NY, CT, RI; Professional Traffic Operations Engineer; Professional Transportation Planner.

Shravya has 15 years of experience designing and leading traffic engineering and transportation planning projects, including developing transportation management plans, arterial and intersection traffic analyses, feasibility studies, traffic signal design, traffic impact studies, work zone traffic control design, traffic control devices, and accident and safety analyses. She has also served as a quality assurance/quality control engineer and reviewed numerous projects as a consultant to various municipalities.

#### *NHDOT*

- Route 101 Improvements - Keene 41590
- F.E. Everett Turnpike Widening, 13761D

#### *MassDOT*

- Complete Streets Design Contract

#### *RIDOT*

- Preservation for Bridges of Bridge Group 18A, Multiple Municipalities

#### **Nick Schwartz, RLA, LEED AP | Landscape Architecture, ADA Compliance**

**Education:** SUNY College of Environmental Science and Forestry, NY, B.S. in Landscape Architecture; SUNY at Cobleskill, NY, A.A.S. in Landscape Development. **Registrations:** Landscape Architect in NJ, NY; LEED AP; BD+C.

Nick has more than 32 years of experience in planning and landscape architecture, with expertise in site planning and design, landscape planting and construction, visual impact assessments, and municipal engineering. He focuses on urban design, streetscape enhancements, pedestrian circulation improvements, and aesthetic resource management. Representative project experience includes:

#### *Town of New London, NH*

- Pleasant Street Sidewalk Improvements (LPA/SRTS)
- Newport/County Road Intersection and Sidewalk Improvements (LPA/CMAQ)

#### *Town of East Hartford, CT*

- Phase III of the Hockanum River Trail

#### *Schenectady County, NY*

- Alco Mohawk River Multi-Use Trail

#### *Town of Halfmoon, NY*

- Champlain Canal Towpath Trail
- Feasibility Study for Mohawk River Crescent Trail Extension

#### *City of Albany, NY*

- Hudson River Way Pedestrian Bridge
- Village of Port Jefferson
- Meadow Parking Lot Pedestrian Walkway

#### **Sub-Consultants**

#### **Matt Lundsted, PE, CFM | Environmental Permitting Lead**

**Education:** University of Connecticut, B.S. in Civil Engineering. **Registrations:** Professional Engineer in NH, MA, CT; Certified Construction Inspector; Contract Claims Avoidance and Handling; Certified Floodplain Manager (CFM).

Matt's civil engineering technical expertise is based on over 35 years of experience in civil and environmental engineering with a specific focus on bridges and roadways, including stormwater and flood management, culvert assessment and design, drainage engineering, civil design and wetlands permitting, NEPA permitting, LID/green infrastructure, water resources, construction management, and cost estimation. Matt has worked extensively on dozens of transportation-related projects, where he has provided civil and environmental management support. As a principal at CEI, he currently serves as project manager on several MassDOT and NHDOT contracts or subcontracts, including the bridge rehabilitation along NH Route 12 in Troy, NH, and the Route 4 over Bunker Creek in Durham, NH. Representative project experience includes:

#### *NHDOT*

- Route 101 Improvements - Keene 41590
- RT-12 Replacement of Bridges No. 089/114 and 096/091, Troy, NH
- RT-202/101 Bridge Rehabilitation, Peterborough, NH
- RT-202/101 Bridge Rehabilitation, Peterborough, NH
- Route 12 Walpole/Charlestown Environmental Services

#### **Russ Huntley, PLS, CWS | [Survey, ROW](#)**

*Education:* Keene State College, NH, B.A. in Geography. *Registrations:* 1993 Designer of Subsurface Wastewater Disposal Systems, NH #1274; 1998 NH LLS, Licensed Land Surveyor #877; 2000 CWS, Certified Wetland Scientist, NH #156.

As founder and owner of Huntley Survey & Design, PLLC, Russ has over 33 years of experience in land survey and related fields. He is a licensed land surveyor in New Hampshire and Vermont, and he is a Certified Wetlands Scientist in New Hampshire. Russ' experience includes boundary and subdivision adjustments, topographic and ALTA surveys, construction control, layout, and as-built surveys, as well as FEMA elevation certificates and LOMA's, NHDES Shorelands plans development, and wetland delineations and mapping. Representative project experience includes:

#### *City of Keene, NH*

- Cheshire Rail Trail Loop III (LPA/TAP)
- Route 10 over the Ash Swamp Brook (Bridge Aid)
- Roundhouse T Multi-Use Path (LPA/TEA-21)
- Cheshire Rail Trail North (LPA/TEA-21)

#### *NHDOT*

- Nashua-Merrimack-Bedford 13761D

#### **Jake Tumelaire | [Cultural Resources](#)**

*Education:* Northern Arizona University, MA, Anthropology (Archaeological emphasis) and

B.A., Anthropology, with a Minor in History.

*Registrations:* Meets Secretary of Interior 36-CFR-61 Standards for Archaeologists; Member of RPA (Register of Professional Archaeologists); Approved for all levels of archaeological investigation in New Hampshire and Vermont. Listed on Level 2 Prehistoric Archaeologist Approved List, Maine Historic Preservation Commission.

As principal investigator, Jake supervises all phases of IAC's archaeological investigation (research, survey, site identification, preparation, and excavation). His responsibilities include accurate site map creation and digital conversion, artifact analysis, and data interpretation/manipulation utilizing various software programs. Representative project experience includes:

#### *NHDOT*

- Manchester 16099
- Route 101 Improvements, Keene 41590
- Nashua-Merrimack-Bedford 13761/13761D
- Dover-Somersworth-Rochester 29604 - Route 108 Complete Streets Improvements
- Nottingham 40612-NH Rte. 152 over North River (Br. No, 141/127)

#### **Reagan Ruedig | [Historical Resources](#)**

*Education:* University of Pennsylvania, M.S., Historic Preservation, 2007. New York University, M.A., Art History/Archaeology, 2004. Duke University, B.A. Art History, 2001. *Registrations:* 1993 Designer of Subsurface Wastewater Disposal Systems, NH #1274; 1998 NH LLS, Licensed Land Surveyor #877; 2000 CWS, Certified Wetland Scientist, NH #156.

As Principal of PC, Reagan has prepared individual and area survey forms for NHDHR, assisted in surveying and field work, and has collaborated on numerous reports and building conditions assessments. She has a background in Mediterranean archaeology and has consulted as a preservation site manager and conservator in Greece, as well as working as an archaeologist and architectural draftsman on sites in both Greece and Turkey. Reagan currently serves as a member of the Portsmouth Historic District Commission and is Past President of the Board of Trustees for the Portsmouth Historical Society. Representative project experience includes:

#### *NHDOT*

- Route 101 Improvements, Keene 41590
- Nashua-Merrimack-Nashua 13761 – F.E. Everett Turnpike
- Bow-Concord I-93 Improvement project, 13742
- Portsmouth US Route 1 Improvement project, 29640, X-A004

APPENDICES SECTION 2 - APPLICABLE WORK EXPERIENCE

## APPLICABLE WORK EXPERIENCE

Over the years, CHA has worked on several projects funded through what is now known as the LPA program. These projects include sidewalk and trail projects, road reconstructions, bridge replacements, roundabouts, and streetscapes. A sampling of some of those projects is presented below.

### **Cheshire Rail Trail Loop III, Keene, NH** *(LPA/TAP Funded)*



CHA recently completed the engineering study and preliminary and final design for the Cheshire Rail Trail/ Park Avenue Loop project as part of Keene's ongoing commitment to develop and expand multimodal access throughout the city. The project included the installation of bicycle and pedestrian signage and approximately 12,000 feet of shared lane and bike lane markings along West Street, Park Avenue, and Summit Road; improved bicycle and pedestrian crossings at the intersection of the Cheshire Rail Trail dog leg with the West Street underpass at SR 9, 10 and 12; upgrading approximately 4,000 feet of Ami Brown Road (an abandoned Class VI road) as well as upgrading approximately 3,900 feet of the existing Cheshire Rail Trail from Hurricane Road to Ami Brown Road. The project also includes the construction of two trailhead sites for parking. Construction was substantially completed in 2022.

### **Roundhouse T Phase II Multi-Use Trail, Keene, NH** *(LPA/TEA-21 Funded)*



CHA provided the design, permitting, and construction administration and inspection of the Roundhouse T Phase II Multi-Use Trail, filling a critical gap in the city's multi-use trail system. Making the project particularly challenging was an extremely aggressive schedule driven by NHDOT's funding constraints. This timetable made it extremely difficult for the city and CHA to secure the necessary ROW along proposed routes, which resulted in reevaluating previously discarded route alternatives. The preferred alternative was finally selected that met the LPA ROW and schedule constraints. A portion of this route traversed Mill Creek and a parcel of previously contaminated land owned by EverSource. CHA worked closely with the city, EverSource, and NHDES to secure the necessary easements and environmental permitting to construct the multi-use trail. Services provided included conceptual design, archaeological screening and wetland studies, multi-use trail design, landscape design, trailhead design, drainage design, and permitting, including the acquisition of a categorical exclusion from the full NEPA process, and construction administration and inspection.

### **Pleasant Street Sidewalk Improvements, New London, NH** *(LPA/SRTS Funded)*



The Town of New London retained CHA to design a 2,000-foot-long sidewalk extension along Pleasant Street. This sidewalk provides a corridor for children and adults to safely walk or bike to their neighborhood school. The NHDOT Safe Routes to School (SRTS)/ LPA program funded it, which required close coordination with the NHDOT SRTS coordinator. All TE-or SRTS-funded projects also require CHA to complete the standard environmental and historic resource screening procedures. We also provided construction administration and inspection for the project constructed by the town forces.

**Cheshire Rail-Trail North, Keene, NH**  
*(LPA/TE Funded)*



CHA was selected to design and permit improvements to 8,000 feet of the Cheshire Branch North Rail Trail administered through the LPA Program. This trail connects the city’s rail-trail system to several communities north and west of Keene. The trail includes three at-grade crossings of local roads and a crossing of Ash Swamp Brook over an existing historic stone arch bridge. The services provided for this TE-funded project include conceptual design, archaeological and wetland studies, multi-use trail design, landscape design, trailhead design, drainage design and hydrologic analysis, permitting, including the acquisition of a categorical exclusion from the full NEPA process, and construction administration and inspection.

**Industrial Heritage Trail over Beaver Brook, Keene, NH**  
*(TEA-21 Funded)*



CHA provided full engineering and landscape architectural services in the design of the one-mile segment of the bikeway network running through the historic industrial area of the city. The design effort of this TEA 21-funded project included a master plan of improvements and redevelopment of the trail corridor, construction of a new bridge over Beaver Brook, survey, multi-use trail design, landscape design, drainage design, hydraulic analysis, and full state permitting for the project.

**Spring Street over Beaver Brook Bridge Replacement, Keene, NH**  
*(TE Funded)*



CHA designed a replacement for the failing 1923 bridge located on Spring Street. NHDOT TE funds financed this project under the municipally managed bridge replacement program. In addition to replacing the bridge, project goals included improving the hydraulic capacity and creating a prototype bridge to emulate other bridges of a similar span that need to be replaced throughout the community. Bridge concepts were vetted using a public outreach program to solicit input from the community.

Like all TE-funded projects, the Spring Street project required natural and historic resources protection. **CHA conducted studies and coordinated with State historic preservation and environmental agencies to secure approvals for the project’s construction.**

The project was advertised for construction in 2012. However, because of the city’s desire to develop a more comprehensive understanding and “master plan” for the flooding potential and bridge replacement strategy along Beaver Brook, the project was not awarded nor constructed, and the existing bridge remains in place.

**Nash’s Mill Road Bridge, Town of Greenfield, MA**



CHA provided preliminary and final design services for the replacement of Nash’s Mill Road Bridge over the Green River. Because the project’s design was funded by the Town of Greenfield and construction funded by MassDOT, the design had been developed in accordance with the MassDOT Design Development Process and Standards. CHA performed all services associated with the bridge replacement design.

**Route 10 over the Ash Swamp Brook, Keene, NH (LPA/Bridge Aid Funded)**



CHA completed the Engineering Study Phase for the replacement of the Route 10 Bridge over Ash Swamp Brook. This project, which progressed under NHDOT’s Bridge Aid Program, involved alternative analysis for the bridge’s rehabilitation or replacement. The replacement alternative analysis and layout is based on anticipated future roadway improvements along the Winchester Street corridor to help ensure the replacement structure is compatible with future improvements and meets the city’s Complete Streets Guidelines. In addition, due to overlying flooding concerns of the Ash Swamp Brook and Ashuelot River, CHA performed a comprehensive hydraulic analysis of the waterways evaluating various replacement and rehabilitation alternatives. The hydraulic analysis also evaluated the flood elevation impacts at the bridge due to the NHDOT replacement of the Route 9 culvert 2,800 feet upstream several years ago. Due to current funding constraints, the bridge’s replacement is being deferred for inclusion in a more comprehensive project to reconstruct Winchester Street in 2025.



*Newport/County Road Intersection Improvements, New London, NH (LPA/CMAQ Funded)*

**Maple Avenue Roundabout, Keene, NH (LPA/HSIP Funded)**



CHA completed the design of a modern roundabout at the intersection of Maple Avenue, Court Street, and Old Walpole Road for the City of Keene. The project improved safety for pedestrian travel and easily accommodated increased traffic volumes at the intersection due to the construction and opening of the new Keene Middle School. This roundabout was funded by a HSIP Program grant administered by NHDOT and was required to follow NHDOT’s LPA Program requirements. The project needed to be fast-tracked to meet HSIP Funding deadlines. **CHA completed the design and permitting in just over three months.** We also performed construction administration and inspection. The project was completed in the fall of 2012.

**Newport/County Road Intersection Improvements, New London, NH (LPA/CMAQ Funded)**

CHA designed the improvements to the intersection of Newport Road and County Road and nearly 2,000 linear feet of sidewalk extension along the approaching roadways. This NHDOT TE-funded project began with a public outreach program using Context Sensitive Solutions principles to develop and review several alternatives to improve the safety and operations at the existing four-way intersection. Through this process, a single-lane roundabout was selected as the preferred alternative. The project included extending the existing sidewalk system to provide continuity through the corridor, upgrading the existing water main, partially relocating aerial utilities to underground, traffic calming and landscape/streetscape design, and designing a closed drainage system.

## Bridge No. N-21-002 Route 122 Over Blackstone River, Northbridge, MA



This project included the replacement of Bridge N-21-002 (1L7), Route 122 (Providence Road) over the Blackstone River using ABC. The existing center pier was demolished below the river bed to improve the hydraulic performance. The replacement superstructure is a 104-foot single-span, steel plate girder with a composite, reinforced concrete deck. The structure has a 41-foot, three-inch overall width and supports two 16-foot travel ways, a pedestrian sidewalk, and a safety curb. The **CHA design team provided innovative excavation support solutions to accommodate construction staging and utility constraints.** In addition to the assembly of a complete contract drawing package, the project includes a public hearing, environmental permitting, subsurface investigation, and generation of a geotechnical report.

## Durham Newmarket Route 108, NHDOT



CHA provided the final design of 3.7 miles of NH Route 108 to improve safety for motorists, pedestrians, and bicyclists. Project safety improvements will include widening and constructing shoulders, additional sidewalks, reconfiguring several intersections, and formalizing over a dozen bus pull-offs for the Wildcat Bus Service associated with the University of New Hampshire. The project corridor is a heavily traveled route (11,000 ADT 2006) that traverses through a mix of urban and rural areas. Three distinct historic districts and environmentally sensitive areas create unique project challenges and require striking the delicate balance between design standards and context-sensitive solutions. An aggressive project schedule and intense public interest have introduced added complexity to the project's design.

## Preliminary Engineering for the Sewalls Falls Bridge, NHDOT, (LPA, Bridge Aid Project)



NHDOT initially retained CHA to perform the preliminary design for the replacement and potential realignment of the Sewalls Falls Road bridge and associated approaches over the Merrimack River. Elements of the design included the evaluation of various roadway alignment alternatives to improve the geometry of the existing roadway and bridge and the disposition or rehabilitation of the existing historically significant Pratt Truss bridge. Design controls within the project included minimizing impacts on abutting Conservation Land, Fish and Game Land, and residential properties. Under the NHDOT-led effort, the preferred alternative was to rehabilitate the existing truss for a single traffic lane while building a parallel structure immediately upstream to carry the second lane of traffic. An Environmental Study, including a programmatic 4(f) evaluation, was performed and approved by NHDOT and FHWA.

After the NEPA process, NHDOT turned the project over to the city to complete the final design. During this phase, the city retained CHA to perform a detailed structural inspection and load rating of the truss to determine the extent of rehabilitation required. Based on these studies, which were not performed under the NHDOT-led effort, it was determined that the majority of the truss members would need to be replaced or strengthened, making rehabilitation impractical. It was also further determined that the NHDOT preferred alternative no longer met the city's long-term goals and needs. As a result, CHA prepared and completed a new Environmental Study, including provisions of Section 106 and the completion of a Programmatic 4(f) Evaluation, which FHWA approved in May 2014, for the replacement of the Sewalls Falls Road Bridge.





**PREPARED FOR:**

**C.R. Willeke, PE**

Municipal Highways Engineer  
New Hampshire Department  
of Transportation  
The Bureau of Planning &  
Community Assistance  
John O. Morton Building  
7 Hazen Drive, PO Box 483  
Concord, NH 03302-0483

**FOR MORE INFORMATION CONTACT:**

**Robert Faulkner, PE, Vice President**

CHA Consulting, Inc.  
11 King Court  
Keene, NH 03431-4648  
P: (603) 460-5006  
E: [rfaulkner@chasolutions.com](mailto:rfaulkner@chasolutions.com)

