



Request for Responses

# Statewide On-Call Preliminary Engineering Prequalified List of Consultants for locally administered LPA Qualifications-Based Selection Contracts

February 1, 2024



**CDM  
Smith**

# Statewide On-Call Preliminary Engineering Prequalified List of Consultants for LPA Qualifications-Based Selection Contracts

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Mr. Tobey Reynolds, PE  
Assistant Director of Project Development  
New Hampshire Department of Transportation  
7 Hazen Drive  
Concord, NH 03302-0483

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

Dear Mr. Reynolds:

CDM Smith has served the municipalities of New Hampshire through NHDOT's Local Public Agency (LPA) program for nearly 27 years from our Manchester, NH office. With our growing transportation program, we are well-suited and excited for the opportunity to be prequalified in providing critical engineering services in the delivery of bridge and roadway infrastructure projects.

Our team will be led by Contract Manager **Lisa Sherman, PE, PTOE, PMP, LPA**. Lisa brings over 28 years of experience in traffic and transportation engineering. Lisa has managed engineering projects for municipalities and state DOTs throughout New England. Her experience, communication skills, and collaborative approach to each assignment fosters positive experiences for clients and staff members alike. Lisa will be supported by Contract Principal **Jim Murphy, PE, LPA**. Jim has extensive experience managing projects in New Hampshire, bringing a deep understanding of state transportation practices and project delivery processes. Jim provides clients with resources to solve challenges and meet your program and project schedules.

Lisa will lead a multidisciplinary team of professionals in delivering projects. With over 40 professionals in our Manchester office and over 700 in New England, CDM Smith offers an unparalleled depth of expertise that can support municipalities with any need that may arise. Our team will be supported by subconsultants **FHI Studio** for environmental, cultural resource, and public involvement services; **Doucet Survey Inc.** for survey and

Right-of-Way; **Independent Archaeological Associates** for archeology; and **New England Boring** for subsurface exploration.

The CDM Smith Team is committed to serving the communities of New Hampshire in successfully delivering bridge and roadway projects by:

- **Delivering projects with a focus on quality.** Our proposed project team has decades of experience in delivering transportation projects for municipalities throughout New England.
- **Prioritizing on-time and on-budget delivery at each phase of the project.** Starting with careful project scoping, management, and execution, we maintain project schedules for on-time advertising, keep construction costs from escalating beyond programmed funds, and apply innovative design techniques where they add value.
- **Leveraging our vast resources to support your needs.** Be it technical specialists or aggressive project schedules, we have the breadth of expertise and depth of bench to support any project need.

We trust the enclosed qualifications and technical proposal show our commitment to the success of the LPA program, and to delivering infrastructure for the communities of New Hampshire. Thank you for consideration of our Team.

Sincerely,



Jim Murphy, PE

**Please contact Jim for any services needed:**

**Jim Murphy, PE**

Principal | Client Service Leader  
CDM Smith Inc.

murphyjf@cdmsmith.com

978.414.7294

670 North Commercial Street, Suite 208  
Manchester, NH 03101

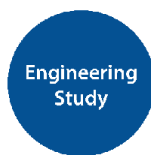
## Project Understanding and Approach

CDM Smith leverages our experience in working with over 200 municipalities in New England and our breadth of technical experts to deliver transportation projects that meet the needs of communities on schedule and on budget. Proactive communication and collaboration are core to our team’s approach to any project. We focus on working with municipalities and NHDOT to scope a project that meets purpose and need, and aligns with the LPA project delivery processes. We meet with owners and NHDOT at the onset of the project to assess risks, identify goals and establish actions to meet the expectations of our clients. At each step of the project, we incorporate detailed interdisciplinary reviews and clear quality processes to maintain quality and correctness of studies and designs. This is key in establishing and maintaining project schedule that conforms to the project delivery process for the LPA program, as outlined below:



Our professionals are qualified to deliver on any service anticipated under this prequalification. Our team's strong track record of success on a wide array of bridge and roadway projects is outlined in the appendices, and summarized in the Project Team section. The following outlines our approach to successfully executing each phase of project delivery for the municipalities of New Hampshire.

### Engineering Study



The Engineering Study phase for an LPA project is the stage that we consider our ‘homework’ – the efforts needed to plan the project, identify risks and seek opportunities. Our engineers, scientists, surveyors and professionals are qualified to deliver on any service anticipated under this prequalification. Our team's strong track record of success on a wide array of bridge and roadway projects is outlined in the appendices, and summarized in the Project Team section. The following outlines our approach to successfully executing each phase of the project delivery process for the municipalities of New Hampshire. Challenges will always exist, and the key is to prepare, plan and act. A project can be derailed during the design process when surprises arise.

Whether assessing roadway alternatives, or a bridge type study, we assess each project for key features and risks, including speed limits, traffic volumes, bicycle facilities, existing structure conditions, natural and cultural resources and possible contamination. We find buildable, direct solutions for identified challenges. Examples of this include:

- County Street project in New Bedford: Identified impacts to existing trees from sidewalk reconstruction, mitigated through implementing high ratio of new trees and pervious pavement at the study phase.
- Brockton, MA: Calling upon our resident experts to identify hazardous materials in a project site using information available from the DEP. Taking this action early in the project lifecycle helped to avoid potential project delays.

Common Challenge	CDM Smith's Potential Mitigation/Solution/Opportunity
Maintaining stakeholder engagement schedule	Development of stakeholder engagement plan at onset of project. Project initiation meetings that engage and get buy-in from stakeholders/reviewing agencies.
Project impact found late in resource review process	Engage environmental/cultural reviewers, stakeholders, reviewing agencies in pre-submission draft of resource identification and project design.
Design omission/oversight in interdisciplinary coordination	Execute interdisciplinary reviews (engineer, environmental, cultural) in all design deliverables. Detail review requirements in Project Quality Management Plan.
Inconsistent or high contractor bids	Maintain project risk register through development. Identify and quantify known risks, and develop contract documents that mitigate overpricing by contractors to accommodate risk. Perform independent review of contract bid documents by construction specialists.
Project costs exceeding allocated funds	Assess cost estimates at each phase of design, modify project design to reduce costs, develop value engineering program.
Unforeseen field conditions in construction – subsurface or unseeable structural defect	Identify common subsurface challenges, structural defects, or other field risks in Risk Register during design development. For projects such as bridge rehabilitations, include special provisions with unit bid pricing for typical issues such as deteriorated concrete or damaged rebar in contract documents.

*The above table illustrates some common project challenges and how they have been addressed.*

Preliminary Design

### Preliminary Design

After taking a collaborative approach to assessing Engineering Studies through resolution meetings and risk assessments, and receiving approval from our client and NHDOT, our team will move forward with the Preliminary Design Submission.

We will prepare the additional studies that may be required, environmental classification request (determination of the Categorical Exclusion) and evaluate impacts or enhancements to the municipal separate storm sewer system and limited reuse soil requirements. We will coordinate proposed utility relocations with the utility owners and update the plans and cost estimate reflective of the proposed action. Design exceptions will be documented and reviewed with NHDOT's Traffic Control Committee and all preliminary design documents will be submitted to NHDOT for review and approval. Structures will be laid out, primarily elements sized, and foundation types identified and designed. If necessary, a public hearing for eminent domain actions related to right-of-way will be coordinated.

Final Design

### Final Design

A detail-oriented approach is critical in all design phases, but is a primary focus in the final phases of design. We bring a thorough understanding of both roadway and bridge design, with deep knowledge in all types of transportation projects, be it the geometric design of corridors, intersection design, as well as bridge and culvert design of all structure types.

The quality of designs, analyses, assessments and deliverables is of utmost importance in delivering safe and reliable transportation to New Hampshire.

Our firm invests in standardized QA/QC practices with a proven track record of achieving its goal: quality deliverables. A common challenge associated with quality management is the coordination between design disciplines. To address this, we require these reviews as standard in our project deliverables to provide final design plans, specifications and estimates that meet the standards of NHDOT, AASHTO and the ADA, and are constructible within available budgets.

In addition to detailed designs, there are a number of key elements that are successful completion of this phase. They include ROW acquisition in conformance with the federal 1970 Uniform Act and state laws related to appraisals, as well as a wide array of environmental permits such as water quality, coastal zone consistency and shoreland permits.

Bidding

### Bidding Phase and Construction Phase

Once the PS&E package and the Construction Engineer selection has been approved by NHDOT and NHDOT has issued the Authorization to Solicit Bids, we will prepare the five steps required for advertisement – developing bidder pre-qualification, orchestrate the bid opening, prepare the bid analysis and submit all the NHDOT for approval. We have prepared bid analysis efforts for dozens of municipalities that allow owners to make informed decisions on selecting bids that provide the best value and minimize risk on projects.

Construction Phase

While construction management and inspection must be performed by a separate consultant, our team is committed to supporting construction as the designer of record.

We regularly assist municipalities with services such as shop drawing reviews, and working directly with the awarded contractor on RFI's and change order management.

### Supporting Clients in Managing Infrastructure

As outlined in Project Team, Team Resumes, and Applicable Work Experience, we bring a knowledgeable group of professionals that are well versed and practiced at delivering a wide array of services to support transportation infrastructure, including:

- Bridge Inspection Services – our proposed roster includes two experienced NBIS - certified Team Leaders
- Hydraulic and Hydrology Services – with over 15 experienced staff in our Manchester office, our team regularly delivers drainage design, scour analyses, and countermeasure design for transportation projects.
- Bridge Load Rating services – our bridge team has load rated over 1,000 bridges in the northeast
- Grant and Funding Services – Our economists and policy experts have procured over \$2 Billion in grant funds for our clients, including INFRA, TIGER and RAISE
- Asset Management – we have supported over 30 municipalities in NH, helping make vital decisions in the management of infrastructure. This includes the development of Life Cycle Cost and Benefit Cost Analyses to help owners make fully informed decisions.

### KEY

- FHI Studio
- IAC - Independent Archeological Consulting
- New England Boring
- Doucet Survey, Inc.
- ★ New Hampshire PE
- \* Resume included in this submittal
- Bold** indicates lead personnel

LEADERSHIP
★ <b>Jim Murphy, PE, LPA</b> * - <i>Contract Principal</i>
★ <b>Lisa Sherman, PE, PTOE, PMP, LPA</b> * - <i>Program Manager</i>
<b>Scott Harley, PE</b> - <i>QA/QC Manager</i>
PROJECT MANAGERS
★ <b>Jim Murphy, PE, LPA</b> * - <i>Project Manager</i>
★ <b>Lisa Sherman, PE, PTOE, PMP, LPA</b> * - <i>Project Manager</i>

BRIDGE
★ <b>Jason Flietstra, PE</b> * - <i>Design and Load Rating</i>
★ Mario LoCoco, PE
★ Laith Qurreh, PE
Amodh Nirala, PE
Ken Sweeney
George Rakib
R. Tyler Carson

ENVIRONMENTAL
<b>Maggie Lofstedt, cws</b> * - <i>NEPA and Permitting</i>
Danielle Gallant, PWS, QEP, CEP-IT
● Dan Hageman, cws
● Stephanie Dyer-Carroll - <i>Cultural Resources</i>
Kathleen Murphy, PE, LSP - <i>Hazardous Materials</i>
● Jesse Cofelice - <i>Archeological</i>
Virginia Roach, PE, BCEE, PMP - <i>Water Quality</i>

HIGHWAY
<b>Sean Murphy, PE</b> - <i>Roadway Design</i>
Bill Sterritt, PE
Colleen Jost, PE
Rebecca Halzack
Adam Healey
Jake Howlett
<b>Rebecca Hall, PE, PTOE, PMP, RSP1</b> * - <i>Traffic Design/Safety</i>
Carl Duesler, PE
★ <b>Steven Carey, PE</b> - <i>Utility and Drainage</i>
Scott Harley, PE
★ Neal Campbell, PE, LSP
<b>Sharat Kalluri, PE, PTOE, PMP</b> * - <i>Corridor Studies</i>
Sharon Terranova*

SUPPORT SERVICES
★ <b>Doug Aghayan, PE</b> * - <i>Geotechnical</i>
Marc Brezinski, PE
● <b>Tommy Garside</b> - <i>Subsurface Investigation</i>
● <b>Bill Doucet, PLS</b> - <i>Survey/ROW</i>
★ <b>Laurie Locke, PE</b> * - <i>Stormwater/Hydraulic</i>
Derek Etkin, PE
Sarah Jakositz
● <b>Marcy Miller</b> - <i>Public Involvement</i>
<b>Michael Dodson, RLA, LEED AP</b> - <i>Landscape Architecture</i>
<b>Joseph Ridge</b> - <i>Economics and Finance</i>
Melissa Ziegler, CEcD
Justine Sydello
Eric McClellan
★ <b>Neal Campbell, PE, LSP</b> - <i>Procurement Services</i>

OPERATIONS, DATA, ASSET MANAGEMENT SERVICES
<b>Bryson Koziell, GISP</b> - <i>Asset Management</i>
<b>Jayson Brennen, GISP</b> - <i>Information Management/Data Analytics</i>

## Project Team

CDM Smith has chosen a qualified team of personnel led by Contract Manager **Lisa Sherman, PE, PTOE, PMP, LPA**. Lisa brings over 28 years of experience in traffic and transportation engineering. Lisa has managed engineering projects for municipalities and state DOTs throughout New England. Her experience, communication skills, and collaborative approach to each assignment fosters positive experiences for clients and staff members alike. Lisa will be supported by Contract Principal **Jim Murphy, PE, LPA**. Jim has extensive experience managing projects in New Hampshire, bringing a deep understanding of state transportation practices and project delivery processes. Jim provides clients with resources to solve challenges and meet your program and project schedules.

Lisa and Jim are certified under NHDOT's Local Public Agency Program, and will serve as the project managers and the primary contact for municipalities. They will be supported by a diverse team of proven technical leaders, the majority of whom are experienced project managers with a history of delivering transportation projects.

The CDM Smith team, including our subconsultants, has licensed professional structural and civil engineers, professional traffic operations engineers, road safety professionals, and IMSA traffic signal inspectors ready to support the development and design of cost effective and implementable roadway and bridge solutions. Our roadway and intersection design engineers, who's focus on pavement design, horizontal and geometric design and safety have helped municipalities secure Transportation Improvement Program funding, along with other state funded opportunities. We have a long track record of developing cost-effective pavement designs (including mill and overlay, reclamation and full depth reconstruction), horizontal and vertical alignments to improve sight distance deficiencies comparable to appropriate design

speeds, and detailed grading and stormwater design to accommodate the increasing frequency of rain events. We pride ourselves on our big-picture consideration of any design we take on, considering factors such as snow management and snow storage while at the same time also addressing appropriate pedestrian and bicyclist accommodation. Our traffic engineers focus on traffic operations, including traffic signal warrant analysis, capacity analysis, signal design and roundabout design. Corridor analysis and simulation modeling are also skill sets of our traffic engineers.

CDM Smith's bridge expertise includes preservation and rehabilitation projects, bridge replacements and temporary bridge structures, precast concrete culverts, and multi-span pedestrian bridge composite superstructure on traditional cast-in-place concrete substructure elements. Our projects include a range of complexity from emergency culvert repairs to simultaneous bridge widenings along a common corridor - requiring an innovative phased construction plan and temporary bridge structures to have a minimal interruption to traffic. We carefully consider the breadth of constraints and opportunities that come along with improving bridge infrastructure, including construction phasing, resource impacts, capital and life cycle costs of infrastructure improvements. Additionally, CDM Smith has provided bridge inspections services and bridge load ratings throughout the northeast. Where bridge load ratings were found to be below State statutory requirements, CDM Smith has developed bridge recommendation reports to restore the deteriorated bridge elements to the as-built conditions, providing the revised load rating results pending the applicable recommended repairs.

Serving local communities is integral to CDM Smith's business. We have served 200+ municipalities in New England and assisted communities in delivering projects leveraging a breadth of transportation funding programs::

- Federal Transportation Alternatives Program
- Federal Congestion Mitigation Air Quality Program
- Federal Aid for Municipal Owned Bridge Programs
- State Bridge Aid Programs
- Federal Grant Programs, including INFRA, TIGER, RAISE
- National Electric Vehicle Infrastructure (NEVI) Program

Our applicable work experience showcases projects that have qualified for these resources in delivering transportation infrastructure projects. We understand that maximizing the value of our budgets is how we best serve our clients and communities, and have accordingly included members in our team that specialize in successfully retaining funds for projects. This team includes economists, public policy experts and seasoned project managers who can develop grant applications and the required economic analyses needed to successfully retain funds. Our team has secured over \$2B in competitive grant funds for clients throughout the country, including over \$50M for intersection improvement projects in New England.

Supporting CDM Smith, our subconsultants provide additional technical and professional expertise, rounding out a team that can deliver on identifying opportunities and solving any challenges that may be required in a community's transportation infrastructure. Our team includes FHI Studio, bringing extensive experience in public involvement and cultural resources; Doucet Survey Inc., who has served communities across the state in ROW and survey; Independent Archaeological Associates providing archeology services; and New England Boring, delivering subsurface investigation. The following staff matrix illustrates the capabilities and experience of our key team members.

Name	Project Role	Years of Experience	Years with Firm	LPA Certified	Project Management	Highway Design	Bridge Design	Structural Engineer	Alternative Procurement Methods	Corridor Study Planning	Bridge Inspection	Bridge Load Ratings	Hydrology	Environmental/Cultural	Traffic Analysis	Geotechnical Engineer	Surveyor	Public Involvement	Economics	Asset Management
Lisa Sherman *	Program Manager	28	18	✓	✓	✓			✓	✓					✓			✓		
Jim Murphy *	Contract Principal	18	3	✓	✓		✓	✓	✓		✓	✓						✓		✓
Scott Harley	QA/QC Manager	17	6		✓	✓														
Jason Flietstra *	Structural Engineer	12	6				✓	✓			✓	✓								
Mario LoCoco	Structural Engineer	13	1		✓		✓	✓	✓		✓	✓						✓		✓
Laith Qurreh, PE	Structural Engineer	6	1		✓		✓	✓	✓		✓	✓						✓		✓
Mike Egan*	Bridge Design and Load Rating	37	6		✓		✓	✓	✓		✓	✓						✓		✓
Mark Fabend	Structural Engineer/Bridge Inspection Team Leader	24	7		✓		✓	✓			✓	✓								
Sean Murphy	Highway Engineer	17	17		✓	✓														
Rebecca Hall *	Traffic Engineer	14	6		✓	✓				✓					✓			✓		
Steven Carey	Utility Engineer	13	14										✓							
Sharat Kalluri*	Transportation Planner	31	25		✓	✓			✓	✓					✓			✓		
Sharon Terranova *	Transportation Planner	31	2		✓				✓	✓				✓				✓	✓	✓
Maggie Lofstedt *	Environmental Scientist/NEPA Lead	34	25							✓				✓						
Dan Hageman	Environmental Scientist/NEPA	30	13							✓				✓						
Stephanie Dyer-Carroll	Cultural Resource Professional	30	11											✓						
Kathleen Murphy	Environmental Engineer	38	38		✓									✓						
Laurie Locke *	Hydrology/Hydraulics Engineer	11	11										✓	✓						
Derek Etkin, PE	Hydrology/Hydraulics Engineer	18	16										✓	✓						
Doug Aghayan *	Geotechnical Engineer	33	5													✓				
Michael Dodson	Landscape Architect	18	17							✓				✓						
Bill Doucet	Surveyor	37	30														✓			
Marcy Miller	Public Involvement Lead	23	17															✓		
Jesse Cofelice	Archeologist	19	14											✓						
Joseph Ridge	Economist	44	44																✓	✓
Neal Campbell	Procurement Specialist	26	25		✓				✓											✓
Bryson Koziell	Asset Management Specialist	25	24		✓															✓
Jayson Brennen	Data Management Specialist	35	30		✓															✓

\* Resume provided

## References



### City of Manchester, NH

#### Fred McNeill

*Chief Engineer, Environmental Protection Division*

*Department of Public Works*

300 Winston Street

Manchester, NH 03103

fmcneill@manchesternh.gov

Project: Multiple Projects

### City of Brockton, MA

#### Patrick Hill

*Commissioner, Department of Public Works*

45 School Street

Brockton, MA 02301

Phone: 508-508-7135

phill@cobma.us

Project: Brockton Transportation Services

### Connecticut Department of Transportation

#### Mike Cherpak, PE

*Project Manager*

2800 Berlin Turnpike

Newington, CT 06111

Phone: 860-594-3155

Michael.Cherpak@CT.gov

Project: Task Based Engineering Services Contract





## **Appendix I: Resumes**

**Lisa Sherman, PE, PTOE, PMP, LPA:**  
 Program Manager **Education:** BS, Civil Engineering, Northeastern University, 1995 **Registration:** PE – NH, MA, RI  
**Certifications:** NHDOT LPA Training, No. 2155 **Years' Experience:** 28



Lisa has 28 years of experience in traffic and civil engineering. She is skilled in a wide range of transportation services including intersection improvements, traffic

signal design, roadway design, traffic calming, transportation planning, municipal project funding and public facilitation.

**Project Manager (PM), Statewide On-Call ITS Services, NHDOT, NH.** Lisa is currently managing this contract to provide statewide on-call ITS services for the Bureau of Transportation Systems Management and Operations. This 3-year \$1 million contract has included ITS assignments to install CCTV camera towers and geolocation of existing fiber networks for NHDOT. Lisa also attended the FHWA training course "Using Your ITS Architecture "Workshop" with NHDOT and others.

**Project Manager, MSA – Transportation Services, New Bedford, MA.** This effort has involved the preparation of funding applications as well as bid documents for multiple improvement and enhancement projects in the City, including multi-use paths, traffic signal improvements, street and sidewalk reconstruction, streetscaping, and pedestrian scale street lighting. Lisa has followed projects from the conceptual stage through construction completion and has committed herself to revisit improvement locations periodically to evaluate current traffic operations. Lisa is also responsible for troubleshooting existing traffic signal installations in the city. Most recently, Lisa worked with the City to evaluate and identify a multi-purpose traffic detection video camera that also provides security features compatible with the City's police department video camera security system.

**Project Manager, Transportation Services, Brockton, MA.** Lisa is currently serving as PM for all transportation services for the City of Brockton. Assignments include replacement of the Grove Street bridge with improvements to the intersection of Grove Street at Summer Street and Lyman Street; construction services associated with the installation of a roundabout at the intersection of North Quincy Street and Boundary Avenue, development of pre-25 percent materials along Forest Avenue for inclusion in MassDOT's Transportation Improvement Program (TIP) and improvements along the Centre Street corridor and the intersection with Plymouth Street to provide a rapid rectangular flashing beacon crosswalk, a road diet, and signaling the intersection.

**Jim Murphy, PE:** Contract Principal  
**Education:** BS, Civil Engineering, Villanova University, 2005 **Registration:** PE – NH; SE – MA **Certifications:** NHDOT LPA Training, No. 2154  
**Years' Experience:** 18



Jim supports clients by leveraging his broad experience in the management of multidisciplinary infrastructure projects, with a technical focus on bridges. He is experienced

in managing and coordinating all aspects of infrastructure design projects including technical disciplines (structural, mechanical, electrical, civil/highway, traffic, geotechnical, hydraulic, hydrology), and cost/benefit and life-cycle studies, environmental permitting, historic mitigation, public/stakeholder outreach, plan and specification development, cost estimation and construction phase services.

**Contract Principal, MassDOT MSA, Statewide, MA.** Jim serves as Contract Principal for CDM Smith's Master Services Agreement with MassDOT, providing roadway, traffic and structural design services in multiple communities throughout MA. Assignments include bridge replacement, roadway reconstruction, and sign structure repair projects.

**Project Manager, New Castle-Rye Bridge Project, New Castle and Rye, NH.** Jim served NHDOT as the PM for Preliminary Engineering services, replacing a bridge carrying NH Route 1B between New Castle and Rye. Jim led a team in investigating various replacement and rehabilitation alternatives for the existing 252' long structure, which is comprised of a bascule moveable span and 5 multi-stringer approach spans. Extensive coordination with multiple state agencies and the public was performed during the study and design processes, as this structure is critical to local infrastructure, spans over a navigable channel and is also eligible for the National Historic Register. Jim led a multi-discipline team in the study and preliminary design of the replacement bridge.

**Project Manager, Seabrook-Hampton Bridge Project, Seabrook and Hampton, NH.** Jim led a design team for Preliminary Engineering services for the replacement of a bridge carrying NH Rt. 1A between Seabrook and Hampton. Jim worked with the project team and NHDOT to investigate various replacement and rehabilitation alternatives for the existing 1,299' structure, which is comprised of a bascule moveable span and 11 deck girder approach spans. Extensive coordination with numerous state agencies and the public is being performed during the study and design processes, as this structure is critical to local infrastructure, spans over a navigable channel and is also eligible for the National Historic Register. Jim led a multi-discipline team in the study and preliminary design of the replacement of the bridge.

**Sharon Terranova:**  
Corridor Studies **Education:**  
BS, Geography, State  
University of New York, 1987  
**Years' Experience:** 31



Sharon has over 30 years of experience in transit, rail, mobility, and infrastructure planning. She has worked with various DOTs across the country providing management and planning support of capital programs and studies. Her agency

experience gives her unparalleled insight to the processes and needs of transit agency and DOT clients. The following project work was performed at a prior firm.

**Transportation Planner, Eastern Connecticut Rail and Transit Feasibility Study, CTDOT Bureau of Policy and Planning, Norwich, CT.** The purpose of this study was to 1) explore the extension of CTrail Shoreline East service to Rhode Island; 2) explore new passenger rail service from New London to Norwich; 3) establish up to seven new passenger rail stations; and 4) extend ground transportation systems. Sharon also supported short- and long-range planning studies including corridor and mobility studies, rail station development projects and feasibility studies, and the State Rail Plan.

**Planning Manager, Transit Infrastructure Program, Colorado Department of Transportation (CDOT) – Division of Transit and Rail, Statewide, CO.** Sharon managed this \$198-million 4-year transit infrastructure program for state-operated intercity express and rural-regional bus facilities, including mobility hubs, stations, park-n-rides, and storage and maintenance facilities, and partner transit agency and local government projects. She evaluated public-private partnership opportunities for transit and rail projects; managed development of Statewide Transit Plan, State Freight and Passenger Rail Plan, and Transit Asset Management Plan; prepared and presented transit and rail policy topics to state commissions and advisory committees; and provided leadership to internal staff of five and consultant teams.

**Senior Transit and Rail Planner, State Freight and Passenger Rail Plan, CDOT, Statewide, CO.** Sharon managed the State Freight and Passenger Rail Plan including RFP development, contract management, stakeholder engagement, document development, and plan implementation. She prepared the Annual Report on Rail Abandonments and Potential Acquisitions for the Colorado Transportation Legislative Review Committee. She also provided staff support to Governor-appointed Southwest Chief and Front Range Passenger Rail Commission, Denver Mayor's Task Force on Rail Safety, Planning and Environmental Linkage Studies, and bus rapid transit corridor development. Her responsibilities included presenting transportation planning processes and policies to grant partners and Federal, State, and local government agencies.

**Jason Flietstra, PE:** Design and Load Rating Lead **Education:** MS – Civil Engineering, Michigan Technological University, 2011; BS, Civil Engineering, Pennsylvania State University, 2006  
**Registration:** PE – NH, MA, CT, RI, IN, FL  
**Years' Experience:** 12



Jason is a structural engineer with experience with bridge design, preservation, and remediation. He has acted as the engineer-of-record on a variety of projects in Florida with focus on originating and

reviewing design calculations, construction plans, and developing technical specifications and details, while mentoring new engineer-interns into good engineering practices. Jason has worked with several types of clients including state DOTs and municipalities.

**Bridge Engineer, Station Road Bridge Replacement, Amherst, MA.** Lead designer for calculations, performed QC of plans, and QC'd bridge plans for the temporary bridge structure. There was coordination with the city providing guidance and reaching out to temporary bridge manufacturers for quotes and designing the cast in place foundation. Jason has worked on design efforts for the permanent bridge replacement with a single span steel girder solution.

**Structural Engineer, CMQC Traffic Signals, Meriden, CT.** Performed design calculations, wrote specifications, and QC'd Mast Arm design plans and shop drawings for the Mast Arm and Strain Pole structures. There was coordination with the city on aesthetics and bid documentation, and with CDM Smith's subcontractors in the design and detailing process for the signal improvements at 11 intersections. Five of the of the proposed mast arms were dual arm assemblies, and several of the mast arms had to consider additional loads for ductile iron decorative luminaires mounted to the poles. Coordination with the City and manufacturers provided minor changes to the plans resulting in a cost savings to the city.

**Bridge Engineer, RIDOT Bridge Preservation Group 5 Bridges – I-95 Corridor Bridges, RIDOT, Statewide, RI.** Worked with bridge design team to identify areas requiring repairs from the Bridge Inspection Reports and field visits. Repair plans for the 12 bridges along the project were developed and reviewed, and necessary design calculations were created. Special sheet details were developed to illustrate appropriate repair procedures. Galvanic Anodes were researched and implemented in bridge repair plans on historic concrete frame bridges along the project to mitigate future corrosion of the reinforcing steel and provided added design life to the bridges. Completed a thorough quantity estimate of the bridge repairs for accurate biddability estimates.

**Mike Egan, PE, PMP:** Bridge Design and Load Rating **Education:** BS - Civil Engineering, Worcester Polytechnic Institute, 19867 **Registration:** PE - MA, CT, RI **Years' Experience:** 37



Mike's 35-year career has encompassed many facets of structural engineering including design, inspection, and the management of transportation projects for highway, railroad,

and pedestrian bridges for clients throughout the Northeast. Design work has included the preparation of design plans for railroad bridges, highway bridge, and superstructure replacements, bridge widenings, bridge deck replacement, and various types of bridge rehabilitations.

**Project Technical Lead, On-call Transportation Engineering Services, City of**

**Brockton, MA.** Mike has assisted the City with the design of improvements to the West Elm Street bridge to replace a failing bridge which has reached substantial completion with funds through the municipal bridge program. Tasks have included development of bid documents (plans, special provisions, and estimates) along with all of the required MassDOT documentation during the design process. Other projects have included multiple TIP projects such as Pleasant Street (Route 27) reconstruction from West Street to Main Street and the city's first roundabout installation at the intersection of North Quincy Street and Boundary Street.

**Project Technical Lead, Station Road Bridge Replacement over Hop Brook, City of**

**Amherst, MA.** Responsible for quality management and technical leadership for the inspection and rehabilitation design of the Station Road Bridge. Work efforts include rapid-response design and specifying of a temporary replacement bridge after the existing bridge was closed. Oversight includes coordination with permitting efforts, roadway, and hydraulic design.

**Project Technical Lead, City-Owned Bridge Assessment Report, Hartford, CT.**

Mike served as project technical lead for assessment of twelve city-owned bridges for rehabilitation and repair needs, as well as eligibility for funding under the State's Local Bridge Aid Program. Efforts included conceptual design of repairs, order-of-magnitude cost estimates for each of the 12 bridges, determination of eligible funds for each bridge, and incorporation of the funding assessment into the city's Five-Year Repair Program.

**Rebecca Hall, PE, PTOE:** Traffic Lead **Education:** BS, Civil Engineering, University of Connecticut, 2009 **Registration:** PE - MA, CT, RI; TPCB Professional Traffic Operations Engineer; TPCB Road Safety Professional; IMSA Traffic Signal Inspector **Years' Experience:** 14



Rebecca's technical experience includes preparation of transportation safety and improvement studies, traffic impact studies and parking demand studies. Her management experience is augmented

by detail-oriented technical experience - from counting cars, to developing a 40-intersection Synchro network, to designing 11 coordinated traffic signals that include an at-grade crossing and railroad preemption.

**Project Manager, Design of Traffic Improvements, City of Meriden, Meriden, CT.**

As the project manager Rebecca is responsible for the analysis and design of traffic improvements for the City of Meriden's transit-oriented development (TOD) district. These improvements include the replacement of all traffic signal equipment at eleven intersections along West Main Street and Hanover Street with coordinated operation for three timing patterns and conversion of a portion of the roadways from one-way to two-way flow. The design also included accessible pedestrian equipment, bicycle lanes, and arrows.

**Traffic Task Manager, Three Intersections, City of Cambridge, Cambridge, MA.**

Rebecca served as the traffic task lead for the intersection improvement projects at Porter Square, Broadway at Ellery Street, and Brattle Street at Sparks Street/Craigie Street. The projects emphasized pedestrian and bicycle safety improvements and context sensitive design. Expanding on the City's initial request for traditional intersection signalization the project evolved to include a mini-roundabout concept, remaining consistent with the historical character of the neighborhood and meeting the desires of the stakeholders.

**Lead Traffic Engineer, West River Traffic Signal Improvements, City of New Haven, CT.**

Rebecca serves as the lead traffic engineer for the analysis and design of the traffic signal upgrades to improve the traffic flow and operations along the Legion Avenue and North Frontage Road corridor during weekday morning, week mid-day, and weekday evening peak periods. Including adaptive traffic signals and leading pedestrian intervals to improve pedestrian safety while maintain vehicular traffic flow.

**Sharat Kalluri, PE, PTOE, PMP:**

Corridor Studies Lead **Education:** MS, Transportation Engineering, University of Connecticut, 1996; BS, Civil Engineering, Regional Engineering College, Tiruchirapalli, India, 1992 **Registration:** PE – MA, CT **Years' Experience:** 31



Sharat has extensive experience in traffic engineering and transportation planning, completing assignments for both public and private clients that include conducting traffic impact studies, corridor studies,

developing context sensitive solutions, pedestrian and school related studies, traffic calming, access management, and traffic simulation modeling. He has taught courses in traffic engineering and traffic/simulation modeling at the University of Connecticut.

**Project Manager, Preliminary Design of Traffic Improvements, City of Meriden, CT.**

Sharat is serving as the project manager to design traffic improvements for the City of Meriden's transit oriented development (TOD) district. The project will utilize Smart Growth and Complete Streets principles to facilitate access to the Meriden Intermodal Center Station, create a more attractive, vibrant, and walkable downtown, and attract transit-oriented development. The project will also incorporate state-of-the-art green or sustainable strategies to provide for a better quality of life and cleaner environment for city residents and workers.

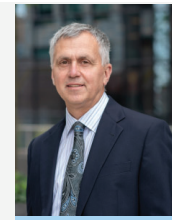
**Senior Traffic Engineer, New Haven Hill to Downtown TOD District, City of New Haven, CT.**

Sharat is serving as the senior traffic engineer to carry out transportation planning, civil engineering, and survey services in support of the development of a plan for the area of the city generally located between Union Station, Downtown, the Hill and Yale-New Haven Hospital (the District). The plan will guide the city towards the creation of a dense, mixed-use, mixed-income, and walkable community in the Hill-to-Downtown District. The primary intent of the project is to create a development framework to guide future growth in the District in a manner consistent with the community's vision.

**Senior Traffic Engineer, South Norwalk TOD Pilot Program, City of Norwalk, CT.**

Sharat is serving as the senior traffic engineer to design improvements for the City of Norwalk's TOD District, will utilize Smart Growth and Complete Streets principles to facilitate intermodal access to the South Norwalk Train Center Station, create a more attractive, vibrant, and walkable district, and attract mixed-use, TOD. The project will also incorporate Crime Prevention through Environmental Design strategies and state-of-the-art green or sustainable strategies to provide safer and more secure streets and a better quality of life and cleaner environment for city residents and workers.

**Douglas Aghjayan, PE, GE:** Senior Geotechnical Engineer **Education:** MS, Civil Engineering, Northeastern University; BS, Civil Engineering, Northeastern University **Registration:** PE – CA, CT, KS, MA, NH, NY, RI **Years' Experience:** 30



Douglas is a Vice President and Senior Geotechnical Engineer at CDM Smith and is a registered professional engineer specializing in geotechnical engineering. He has over 30 years of

relevant experience in the evaluation, design, and construction of foundations, dams, pipelines, tunnels, roadways, and slopes. He is experienced in identification and evaluation of geologic conditions that can affect the geotechnical analysis, design, construction, and long-term performance of civil works projects.

Douglas serves as a subject matter expert on CDM Smith projects and in this role, he directs and oversees geotechnical studies, subsurface investigations, laboratory testing, designs, and construction oversight of the geotechnical aspects of those projects. He manages and directs geotechnical staff, provides quality reviews on projects and is in responsible for resolving complex issues in regard to the geotechnical works.

**Geotechnical Project Manager, Beaver Street Bridge Replacement, Framingham, MA.** Douglas served as Geotechnical Project Manager for the replacement of single-span two-lane bridge. The bridge was replaced with a reinforced concrete box culvert. He developed and directed a subsurface investigation which consisted of soil borings and laboratory testing. He performed geotechnical analyses and prepared the geotechnical recommendations report for design and construction of the new bridge and wingwall foundations. The work was performed in compliance with MassDOT and AASHTO requirements.

**Geotechnical Project Manager, Route 44/28/18 Flyover, Middleborough, MA.** Douglas served as Geotechnical Project Manager for a new flyover at the Route 44/28/18 rotary. The project includes two new multi-span flyover bridges to carry Route 44 eastbound and westbound traffic over the rotary, roadway and rotary realignments, and multiple retaining walls. He directed the subsurface investigation consisting of soil borings and laboratory testing. He performed geotechnical analyses and prepared the geotechnical recommendations report for design and construction of the structures in accordance with MassDOT and AASHTO requirements.

**Laurie Locke, PE:** Hydraulic/Hydrology Lead **Education:** MEng – Environmental and Water Quality Engineering, Massachusetts Institute of Technology, 2012; BS – Environmental Engineering Science, Massachusetts Institute of Technology, 2011 **Registration:** PE – NH, MA **Years' Experience:** 11



Laurie is an engineer with nine years of experience in water resource modeling and data visualization. Laurie has built, calibrated, and applied groundwater, collection system surface water, water quality, and system models to support

planning studies and design work. She is proficient in a variety of numerical modeling software including SWMM, DYNYSYSTEM, MODFLOW, STELLA, HEC-HMS, HEC-RAS, HEC-ResSIM, SWMS 2D, and VLEACH.

**Lead Modeler, Cemetery Brook Drain Preliminary Design, Manchester, NH.** Laurie performed hydraulic modeling of a new 2.3-mile Cemetery Brook Drain and associated separated stormwater piping. She completed an alternatives analysis in SWMM to assess the method of construction (open-cut versus tunneling) and size of the trunk drain and new stormwater outfall. She also modeled sewer separation in the 4,500-acre drainage basin by adding new stormwater piping to the model and determined the appropriate sizing to mitigate flooding during a 25-year storm event.

**Project Engineer, Integrated Stormwater and Wastewater Master Plan (SWMM), Fall River, MA.** Laurie completed alternatives analysis modeling with calibrated models of the Fall River combined sewer system (CSO) and Quequechan River to support the city's Integrated SWMM. She ran SWMM simulations to evaluate different strategies for CSO abatement and improvements to the stormwater system, including sewer separation, sewer pipe replacement, relief piping, and operations of the deep-storage tunnel.

**Project Engineer, Bound Brook Dam Engineering Analysis, Cohasset, MA.** Laurie built a hydrologic model in HEC-HMS to evaluate runoff to Bound Brook Dam. The HEC-HMS model simulated catchment runoff response and reservoir storage. Results from the HEC-HMS model were used to support detailed hydraulic modeling of the dam in HEC-RAS.

**Groundwater Modeler, Green City, Clean Waters Stormwater Management Program, Philadelphia, PA.** Laurie built a series of models to evaluate infiltration and water table rise due to the city-wide installation of green stormwater infrastructure (GSI). The infiltration models she developed in SWMS 2D and groundwater flow models she developed in DYNFLOW simulates site-scale and regional groundwater flow and water table rise, exfiltration to leaky sewer pipes, and two-dimensional unsaturated zone response to wet weather infiltration.

**Magdalena (Maggie) Lofstedt, CWS:** NEPA and Permitting Lead **Education:** BS, Biology, University of Massachusetts, 1989 **Registration:** Professional Wetland Scientist – NH; Certified Wetland Scientist: NH **Years' Experience:** 34



Maggie has 32 years of experience as a wetland/environmental scientist. She specializes in environmental/wetlands permitting, wetland delineations, coastal and freshwater

ecological assessments, and wetland mitigation. Maggie is a Certified Wetlands Scientist (CWS). She is an expert in developing permitting plans and strategies and preparing environmental permit applications for a variety of projects (wastewater, land development, water supply, drainage improvements, dam rehabilitation, flood resiliency, remediation, and transportation).

**Environmental Scientist, Sewer Separation Program, Nashua, NH.** Maggie delineated existing wetland resources within the Daniel Webster Highway median for repair and replacement of manholes in the city's combined sewer collection system. An application for wetlands permit was filed with the Nashua Conservation Commission.

**Environmental Permitting Task Leader, Capitol Regional Educational Council (CREC), Two Rivers High School Project, Bloomfield, CT.** The project consisted of developing a 44.8-acre parcel of former agricultural land at 29 Griffin Road North in Bloomfield for the proposed CREC Two Rivers Magnet High School. This project site was challenging as portions of the parcel supported both state and federal wetlands, vernal pools, and state-listed protected species. Maggie however secured an Inland Wetlands and Waterways Permit from the Bloomfield Inland Wetlands and Waterways Agency for unavoidable impacts to approximately 1.64 acres of wetlands. Maggie designed wetland replication areas and buffer zone plantings to mitigate for the loss of CT wetlands. Maggie also prepared a combined Category 2 U.S. Army Corps of Engineers (USACE)/401 Water Quality Certification application. Maggie coordinated with the USACE to ensure compliance with their In-Lieu Fee Program for mitigation.

**Environmental Permitting Task Leader, Crescent Street Intersection Improvements Project, Mass DOT/City of Brockton, MA.** Improvements to four intersections involving roadways classified as principal urban arterial, urban collector, and urban minor arterial. Maggie prepared the Early Environmental Coordination Checklist at the 25% design phase to identify any potential issues with regards to permitting and inter-agency coordination. This Project qualified as Categorical Exclusion (CE). Maggie also conducted wetland delineations and wildlife habitat assessments within and along the Project area.



## **Appendix II: Applicable Work Experience**





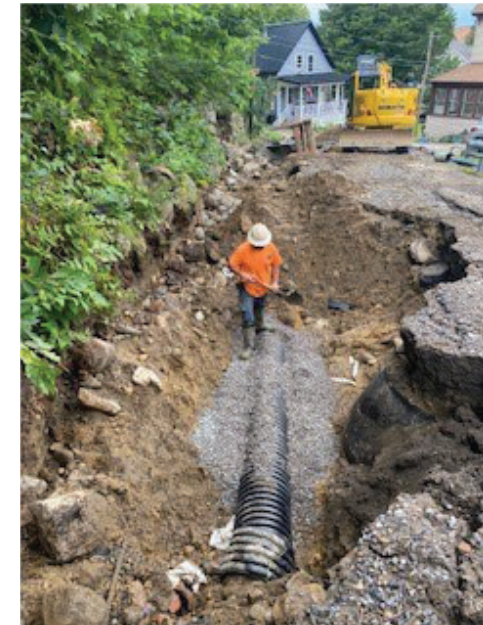
### MSA, City of Laconia, NH

**Location:** Laconia, NH **Dates:** 2020 **Client:** City of Laconia

**This project demonstrates:**

- ✓ ADA compliance
- ✓ Roadway Improvements (full depth and road reclamation)
- ✓ Drainage Improvements
- ✓ City and NHDOT design guidance.
- ✓ Bidding analysis
- ✓ Advertised on time
- ✓ Completed within budget

**Description:** CDM Smith provided preliminary, final design and bidding services for the Mechanic Road Reconstruction and Drainage Replacement and the Southern Lakeport Area Sewer Replacement. These improvements included design of compliant sidewalk, curb ramps, driveway aprons, crosswalks, detailed grading plans, drainage improvements, pavement markings and signing plans, temporary workzone traffic control, and development of construction bid document for the City of Laconia. The roadway design incorporated NHDOT design standards, and met applicable standards for AASHTO and the ADA. In addition to the roadway and sidewalk elements, the project also provided 5,000 LF of sewer main improvements on Mechanic, Clinton, Cole, Pear and Prospect Streets and 1,000 LF of drainage improvements on Mechanic Street.



ACEC MA Bronze 2021

### JFK Phase 2, New Bedford, MA

**Location:** New Bedford, MA **Dates:** 2010-2020

**Client:** City of New Bedford, MA

**This project demonstrates:**

- ✓ Field investigation/signal trouble shooting
- ✓ Traffic signal design
- ✓ Field inventory
- ✓ Safety analysis
- ✓ Capacity analysis
- ✓ Geometric design
- ✓ ADA
- ✓ Complete Streets
- ✓ Multi-use paths
- ✓ Pavement preservation
- ✓ Coordination with State DOT

**Description:** The JFK Phase 2 project converted over a mile of limited access highway to a boulevard, including new inter-sections as well as traffic signal replacements at 6 locations. A seventh signal location, a fully operational pedestrian signal, was also installed in place of an existing pedestrian bridge that was removed due to deterioration and non-compliance with ADA requirements. The signals operated on coordination plans intended to encourage a 'desired' speed of travel for motor vehicles. Pavement rehabilitation included milling and overlay along the main corridor with full depth construction implemented where new street connections were made. Stamped concrete crosswalks and ADA compliant walking facilities are also included, enhanced by Accessible Pedestrian Signals (APS). To further encourage walking and biking, the project also includes a section of multi-use path adjacent to the corridor which provides connection from an elementary school to a nearby park.

CDM Smith delivered each phase of the project for the city, including engineering study through construction phase services. The team managed extensive public outreach efforts for the city, and developed all required environmental documents for the project, including MEPA Categorical Exclusion, Environmental Notification Form and permits.







## Traffic Signal and Intersection Improvements, Meriden, CT

**Location:** Meriden, CT **Dates:** 2016-ongoing

**Client:** City of Meriden

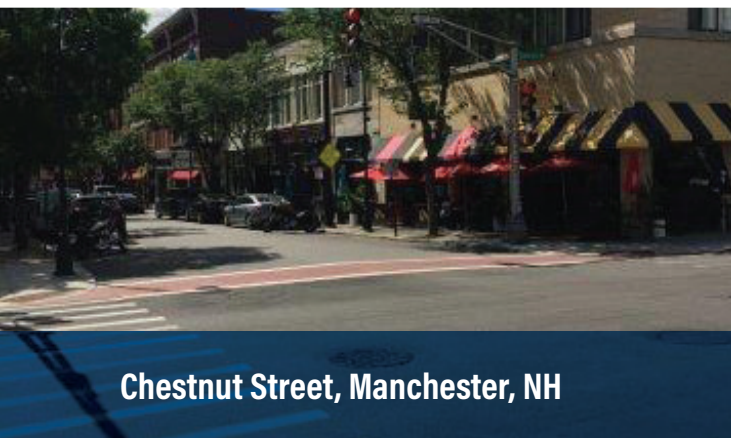
### This project demonstrates:

- ✓ Roadway and Traffic Design
- ✓ Completed within Budget
- ✓ Current/Innovative design techniques
- ✓ Public participation and outreach
- ✓ State and Federal Funded

**Description:** CDM Smith conducted complete streets planning, operations analysis, roadway design, traffic signal optimization and design for the corridors surrounding the new Meriden Train Station. The reconstruction of Hanover Street, West Main Street, and East Main Street utilized strategies to promote safe and efficient use by motor vehicles, pedestrians, bicyclists, and transit riders. The operations analysis reviewed the conversion of the existing one-way couplets and contra-flow lanes to two-way roadways with a traditional intersection design taking into consideration the increase in vehicular, pedestrian, bicyclist, and transit traffic as a result of the TOD development.

- New coordinated closed loop signal systems along Hanover Street and East/West Main Street
- Full upgrade and replacement of decorative black mast arm and span pole equipment at ten intersections, timing modifications at three intersections, and one new signalized intersection

- New accessible pedestrian equipment with ADA conformity and countdown pedestrian signals for clearer crossing signals and reduced crossing distance
- Conversion of Route 71 from one way to two way, removal of state traffic from local roads
- Improved bicycle connectivity with a combination of new bike lanes, sharrows, and signage
- Test pits completed during design to identify acceptable locations for the mast arm foundations to avoid delays during construction
- Railroad pre-emption modifications and coordination with Amtrak
- Evaluation of roadway and sidewalk grades to evaluate curb ramp selection to meet ADA standards
- Design Services during construction: review of submittals, responses to RFIs, and meeting attendance
- The project utilized CMAQ funding, and met all associated compliance and reporting requirements.



## Chestnut Street, Manchester, NH

**Description:** The Chestnut Street Project includes construction of new drain installation and roadway reconstruction at Willow Street, Auburn Street, Chestnut Street and Merrimack Street. The design emphasized a complete street design for the corridors. The impacted streets were boxed out from curb to curb, reconstructed with new subbase and pavement, regraded, new granite curbs, bituminous and concrete sidewalks, and concrete ADA ramps at all intersection. The height of the roadways was adjusted to meet curb reveal (some locations improved from 1 1/2" to 6 1/7") and ramps were design to meet ADA requirements with tactile plates. Also, the project included installation of seven decorative crosswalks with a brick stamping finish to meet client needs and design/installation of the first bike lanes. The project also includes the construction of approximately 2,900 linear feet of 60-inch RCP drain; 390 linear feet of 15-inch to 18-inch PVC drain; 150 linear feet of 30-inch and 54-inch DI drain; 215 linear feet of 48-inch and 54-inch RC drain; 1,380 linear feet of 8-inch to 12-inch PVC and DI sewer, 2,800 linear feet of 6-inch to 20-inch DI water main; 1,670 linear feet of 10-inch to 18-inch CIPP sewer liner; and catch basin replacement.

**Location:** Manchester, NH **Dates:** 2014-2017

**Client:** Town of Manchester

### This project demonstrates:

- ✓ Planning and Environmental Linkage Study (PEL Process)
- ✓ Innovative interchange design
- ✓ Multi-modal long range planning
- ✓ Stakeholder outreach
- ✓ Media, and virtual public meetings



## North Chestnut Street, Manchester, NH

**Location:** Manchester, NH **Dates:** 2015-2018

**Client:** Town of Manchester

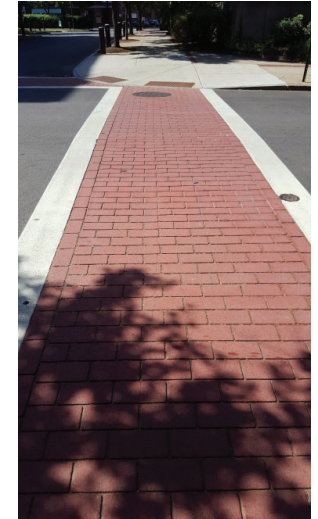
### This project demonstrates:

- ✓ Roadway reconstruction
- ✓ Current/innovative design and construction techniques
- ✓ Completed within Budget
- ✓ Completed on Schedule
- ✓ Complete Streets

**Description:** The North Chestnut Street Project continued the improvements to drainage and roadway reconstruction completed under the Chestnut St Project, and includes roadway reconstruction and installation of new drain in Chestnut Street, Pine Street, Union Street, Union Street East Back, Walnut Street, Walnut Street East Back, Litchfield Lane, Central Street, Laurel Street South Back, Laurel Street, Merrimack Street South Back, Manchester Street, Hanover Street, Amherst Street, Concord Street, Lowell Street, High Street South Back and High Street. Similar to the Chestnut Street Project, the development of complete streets were emphasized. Each street was boxed out from curb to curb, reconstructed with new subbase and pavement, regraded, new granite curbs, bituminous and concrete sidewalks, and concrete ADA ramps at all intersection. The height of the roadways was adjusted to meet curb reveal and ramps were design to meet ADA requirements with tactile plates.

Also, the project included continued installation the bike lanes started on the Chestnut Street project.

The project also constructed approximately 3,000 linear feet of 24" to 54" RC drain; 7,100 linear feet of 12" to 18" PVC drain; 1,500 linear feet of 8" to 12" PVC sanitary sewer; 1,800 linear feet of 8" to 12" DI water main; 4,650 linear feet of 8" to 15" CIPP sewer liner; and catch basin replacement.



## On-Call Services, Amherst, MA

**Location:** Amherst, MA **Dates:** 2006-ongoing

**Client:** Town of Amherst

### This project demonstrates:

- ✓ Permitting and wetland mitigation
- ✓ Public participation and outreach
- ✓ State Funded Project
- ✓ Roadway and Traffic Design
- ✓ Coordination with State DOT
- ✓ Hydraulic analysis
- ✓ Bridge design (temporary and permanent)
- ✓ Roundabout analysis and design

**Description Station Road Bridge:** CDM Smith recently performed a rapid-response effort to develop a design and plan to temporarily replace the Station Rd. bridge with a temporary bridge, after its failed inspection. This effort allowed the roadway to remain open to traffic. CDM Smith is also performing design services for the replacement of the

structure with a steel multi-beam bridge in accordance with MassDOT design standards, including the application for the municipal bridge program.

**Description Atkins Corner:** CDM Smith's transportation services for Amherst began with the town's award-winning TIP project, realignment of Rt. 116 at Bay Rd. and West Bay Rd. CDM Smith developed bid documents for the construction of twin roundabouts along with two reinforced concrete box culvert replacements, water quality swales, guardrail installation, and a pervious pavement shared-use path. In addition, CDM Smith has provided several roundabout studies as well as the design of the East Pleasant St. at Triangle St. roundabout project which was fast-tracked for construction prior to the influx of students that attend the five universities/colleges in town.



**Coggeshall Street, New Bedford, MA**

**Location:** New Bedford, MA **Dates:** 2013-2019

**Client:** City of New Bedford

**This project demonstrates:**

- ✓ Advertised on schedule
- ✓ Public participation and outreach
- ✓ Traffic signal design
- ✓ Coordination with State DOT
- ✓ Roadway Reconstruction

**Description:** The Coggeshall Street project included traffic signal replacement at two locations. A third location in the middle of the corridor had already been designed by CDM Smith and constructed as part of a different grant program. This project required that the replacement signals operated seamlessly with the newly improved locations. The corridor included full depth reconstruction along 3,300 feet of existing roadway, with widening to provide exclusive turn lanes at critical intersections. The project also included the design of new ADA-compliant sidewalks, ramps, and crosswalks, as well as accessible pedestrian signals and on-road bicycle accommodations. Critical to the success of this project was the design of proposed stone masonry retaining walls to maintain existing off-ramps at a nearby highway interchange. In addition, the project included hazardous material accommodations, as the removal of an existing out-of-use gate house included asbestos shingles.



**Danco Drive Bridge, Putnam, CT**

**Description:** CDM Smith assisted the Town of Putnam in assessing the condition of their municipally owned under 20'-0"-long bridges and providing guidance on developing a bridge management program to prolong the service life of all the town's bridge inventory. The performed a condition assessment of the under 20'-0" bridges that have not been inspected since 1991. This included a field inspection of critical elements and an accompanying assessment report. The second phase, the in-depth inspections, started with the inspection of the Danco Drive Bridge over Perry Brook and included a load rating of the bridge per CTDOT Guidelines. Resulting inspection concluded that the bridge warranted full replacement and the load rating required posting the existing structure for load restrictions. with timing and sequencing dependent on assessed condition.

CDM Smith assisted with the posting and prepared a specialized rating for emergency vehicles to allow emergency access to the sole business beyond the bridge on Danco Drive. CDM Smith is also preparing the Bridge Replacement plans for the Town of Putnam for a new bridge at this location which includes complete survey, hydraulic analysis and geotechnical assessment.

**Location:** Putnam, CT **Dates:** 2019-ongoing

**Client:** Town of Putnam

**This project demonstrates:**

- ✓ Bridge Design
- ✓ Bridge Inspection and Load Rating
- ✓ Coordination with State DOT
- ✓ Public outreach materials



## RIDOT Safe Routes to School, Warrick, RI

**Location:** Statewide, RI **Dates:** 2013-2021 **Client:** RIDOT

### This project demonstrates:

- ✓ Field observations
- ✓ Field inventory
- ✓ Crash analysis
- ✓ Sight distance analysis
- ✓ Bridge and Geotechnical Design
- ✓ Research
- ✓ ADA
- ✓ Sidewalk Design
- ✓ Permitting
- ✓ Drainage
- ✓ State Funding

**Description:** As part of an on-call contract, CDM Smith prepared bid documents as the lead engineer for the design of a new composite pedestrian bridge across the Kickemuit River in Warren. The proposed bridge will facilitate student access to the Kickemuit Middle School as well as provide a critical connection for the Warren Bike path to reach the East Bay bike path. The project included geotechnical and bridge design services including a subsurface exploration program, development of a geotechnical design report, design for the use of composite sheeting as well as exploration into the use of composite piles. CDM Smith has developed the design for the bridge abutments and incorporated the use of lightweight cellular concrete fill to mitigate the long-term settlement of soft clay layers. Existing railroad abutment blocks that remain within the project area will be removed and stacked for use by the community. The superstructure of the bridge will be constructed of composite (FRP) material including an open-grated deck and will be a three-span bridge. Work

included research into the types of composite bridges available as well as the potential for local manufacturing. Also included are emergency vehicle turnaround areas at the base of the outer spans to facilitate emergency services; otherwise, the bridge is restricted to pedestrians, bicyclists, and limited snow removal equipment.



## CR 6 Bridge Replacement, Lexington, NY

**Location:** Lexington, NY **Dates:** 2009-2013

**Client:** Greene Co. Highway Department

### This project demonstrates:

- ✓ Advertised on time
- ✓ Completed within budget
- ✓ Public participation and outreach
- ✓ State Funded

**Description:** CDM Smith provided preliminary and final design services for the replacement of the County Road 6 Bridge over the West Kill. The preferred design alternative for this locally administered federal aid project included replacement of the existing 61-foot span, steel multigirder bridge with a new 110-foot span, precast prestressed concrete box beam bridge on an improved horizontal and vertical alignment.

After design approval was received for the preferred alternative (replacement of the bridge on a new alignment upstream from the existing bridge), Hurricane Irene caused substantial flooding along the West Kill, undermining the existing bridge abutments and causing an emergency closure of the bridge. Since CR 6 is a no-outlet road, a 135-foot span temporary bridge was installed over top of the existing, damaged bridge.

As a result of the flood damage and the location of the temporary bridge, the original preferred design alternative was no longer viable and had to be changed at the ADP plan stage. The new preferred alternative called for constructing a second temporary bridge upstream of the existing bridge, then removing the emergency temporary bridge and the damaged existing bridge, before building the proposed bridge within the original highway boundaries.

This project required substantial coordination between numerous state and local agencies. CDM Smith worked closely with NYSDOT, Greene County, property owners, the Greene County Soil and Water Conservation, NYCDEP, NYSDEC and the Army Corps of Engineers to coordinate the design changes resulting from the Irene flood damage. CDM Smith was able to coordinate ROW purchases, obtain revised permits, and provide an updated PS&E in less than 3 months.