BSC GROUP

LETTER OF INTEREST / FEBRUARY 1, 2024

Local Public Agency Prequalifications

New Hampshire Department of Transportation

BSC GROUP

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Environmental Scientists
Software Developers
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Planners
Surveyors

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FEBRUARY 1, 2024

William J. Oldenburg, PE
Assistant Director of Project Development
Chairperson, Consultant Selection Committee
New Hampshire Department of Transportation
7 Hazen Drive
Concord, New Hampshire 03302-048

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

Dear Mr. Oldenburg:

Delivering highway and bridge design engineering services for the New Hampshire Department of Transportation (NHDOT) and Local Public Agencies (LPA) in New Hampshire requires deep interdisciplinary knowledge and extensive experience in supporting projects of all kinds, including schools, trails, bike ways, parks, Complete Streets, and downtown renovations. BSC Group (BSC) has the technical excellence, breadth, and depth to meet diverse transportation needs throughout New Hampshire. Our team is proven, well-organized, and highly responsive, with state-of-the-art technologies needed to support NHDOT's mission of building a sustainable, accessible, and efficient transportation network. We bring the following valuable attributes:

- **Qualified Staff Offers a Wide Range of Expertise:** Our team has vast municipal work experience in Massachusetts and is comprised of professionals with expertise in all of the disciplines anticipated to be required for LPA task assignments, including highway, bridge, and traffic engineering, climate resilience, environmental science, landscape architecture, geotechnical engineering, and land surveying. **Seven of our team members are LPA certified, allowing us to seamlessly support Local Public Agencies.**

- **Central New Hampshire-Based Team is Poised to Serve:** BSC's centrally located Manchester office allows us to be responsive and readily serve clients throughout the state. We have worked in a number of New Hampshire communities, primarily through our energy and utility clients.

- **A Commitment to Infrastructure Improvement in New Hampshire:** As transportation, ecological, and civil engineering professionals, BSCers are committed to supporting our communities. We live and work in the Granite State and have a vested interest in the improvement of infrastructure. We are eager to work with LPAs and help them with this important work.

We look forward to your review of our qualification materials. If you have any questions, please do not hesitate to contact me at my cell number, 978-857-0513, or dbiancavilla@bscgroup.com; or Kelly O'Neill, Vice President, at her cell number, 857-492-5542, or koneill@bscgroup.com.

Sincerely,
BSC Group, Inc.

David Biancavilla, PE, LEED AP, LPA
Vice President, Principal

150 Dow Street / Manchester, NH 03101 / 617-896-4300

BSC GROUP

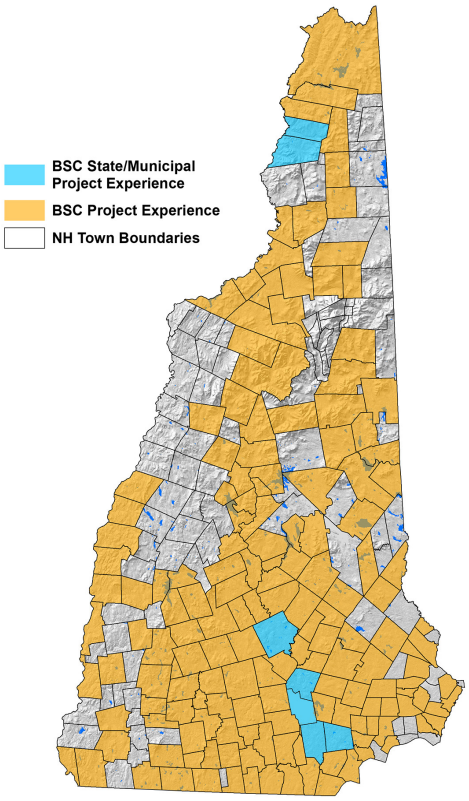
Project Understanding & Approach

Project Understanding

BSC is familiar with NHDOT's LPA funding programs including Congestion Mitigation & Air Quality (CMAQ), Transportation Alternative Program (TAP), Surface Transportation Program (STP), Highway Safety Improvement (HSIP), Municipal Off-System Bridge Replacement and Rehabilitation (MOBRR), and Federal Emergency Relief (ER). We are also familiar with the LPA process with key milestones noted below.

Engineering Study

One of the first and most important steps for an LPA project is the Local Concerns Meeting at which a general overview of the project funding is provided, the proposed schedule is outlined, an overview of the project area and issues is discussed, and the public can provide input on the project. This information is processed and results in a Purpose and Need Statement which spells out the needs and goals of the project.



BSC has supported numerous projects for communities throughout New Hampshire.

The major sections of the Engineering Study are the Existing Conditions section, which describes the existing site and project concept, the Design Criteria of the improvements, the Preliminary Environmental Review and Documentation to identify significant natural and cultural resources, the Alternatives/ Proposed Layout, Structure Studies, Recommendations (if needed), and a Cost Estimate and Engineer's Estimate using standard NHDOT nomenclature. At this point a second public meeting is held as a Public Presentation of Proposed Action. The next step is to Submit the Engineering Study requesting NHDOT review and approval.

Preliminary Design

After receipt of the NHDOT letter for Engineering Approval and the Notice-to-Proceed with Preliminary Design, the Drawings/Plans work continues with preparation of design plans including General Plan, Profiles, Typical and Critical Cross Sections, Grading, Drainage and Utilities, Landscaping, Signing and Pavement Markings, and Detail Sheets. Also during this phase, Environmental Documentation is submitted. Depending upon the project, Traffic Studies, Borings, Hydraulics and Hydrology studies, Design Exceptions documentation, and Environmental/Historical documentation may be required. The Cost Estimate and Engineer's Estimate from the Engineering Study phase is updated and all documents submitted requesting NHDOT review and approval of the Preliminary Design.

Final Design

After receipt of a NHDOT letter for Preliminary Plan Approval and Notice to Proceed with Final Design/ PS&E, ROW Negotiations and Acquisitions begin, Drawings/Plans are finalized, and Contract Documents are prepared. The Final Cost Estimate and Engineer's Estimate is prepared and all documents are submitted requesting NHDOT review and approval of the Final/ PS&E design.

Bid Phase

After approval of the final design, the Bid Phase begins, which includes Advertising for Bids, Prequalification of Bidders or Contractors, Bid Opening, Bid Review and Analysis, and Bid Award. Once NHDOT issues a written notice of approval to award a low bid construction contract, Preliminary Engineering is complete.

Project Approach

Clients turn to BSC's planners, engineers, and scientists to help apply the right tools and approaches for a more efficient and functional transportation network. Whether improving pedestrian and vehicle safety within roadways and intersections, improving bus and rail accessibility for passengers with disabilities, conducting vulnerability assessments to prepare for the impacts of climate change, or finding funding through grant programs, we work with our clients to deliver creative and pragmatic solutions to handle the challenges of today and the future.

Highway

Integrating traffic and roadway planning and design, BSC's transportation team creates infrastructure solutions to promote connectivity within our communities. Specifically, BSC provides engineering services for roadway, intersection, bicycle facility, and parking facility projects for municipal, state, and private sector projects.

BSC is expert in design of new and rehabilitated roadways from preliminary design through final design and development of contract plans and documents (including right of way plans) in both traditional and alternative delivery methods. Our projects range from planning level corridor studies to overseeing construction of roadway improvements. Within these projects, BSC integrates intersection improvements, drainage system improvements, traffic signals, sidewalks, bike lanes, and complete streets design. Our expertise extends to off-highway improvements including park and ride lots and rail trail development.

Bridge

Focusing on safety and function, our team responds to immediate and long-term needs for public infrastructure. Our staff includes senior engineers with practical experience in the design and analysis of structures for highway, rail, public transit, and land development projects.

BSC's structural engineers have extensive experience in bridge inspection and load rating, structural condition evaluations, project design development and contract document preparation, and resident engineering and construction inspection. Our engineers have provided preliminary design through final design and development of contract documents for bridge maintenance, preservation, rehabilitation, and replacement for various types of bridge structures. Many of our bridge projects require integrated coordination with our transportation team for the design of roadway approaches and temporary crossovers. Our structural engineers also provide inspection and load rating of various bridge types for both as-built and as-inspected conditions in order to evaluate existing structures. These services often lead to design of scour protection countermeasures and/or substructure protection.

Additional Work Efforts

In addition to Highway and Bridge Engineering, we offer the following supportive services: Project Management, Environmental Engineering/LSP Services, Landscape Architecture, Environmental Permitting (wetland delineation, biological field studies and surveys, wetland mitigation planning and design, fisheries and water quality studies, invasive species surveys and management plans, and threatened and endangered species), Traffic Analysis and Traffic Control Design, Hydraulic and Hydrologic Calculations, Geotechnical Evaluation and Analysis (with our consultants), Overhead Sign Structure and Retaining Wall Design, Topographic Survey, Right-of Way Plan Development, and Public Outreach.

Organizational Chart

NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION & LOCAL PUBLIC AGENCIES

PRINCIPAL-IN-CHARGE
Dave Biancavilla, PE (NH), LEED AP, LPA

PROJECT MANAGER
Wayne Keefner, PE (NH), PTOE, LEED AP, LPA

HIGHWAY ENGINEERING
Wayne Keefner, PE (NH), PTOE, LEED AP, LPA (Lead)
Bill Paille, PE (NH), LPA
Bryan Wentworth, PE (NH), LPA

BRIDGE ENGINEERING
Micah Morrison, PE (NH), SE, LPA (Lead)

TRAFFIC ENGINEERING
Wayne Keefner, PE (NH), PTOE, LEED AP, LPA
Sam Offei-Addo, PE, PTOE

CIVIL ENGINEERING
Dave Biancavilla, PE (NH), LEED AP, LPA
Bryan Wentworth, PE (NH), LPA

CLIMATE RESILIENCE
Gillian Davies, PWS, SSSSNE, NHCWS, CESSWI
Katie Kemen, MBA

ENVIRONMENTAL PERMITTING
Luke Hurley NH CWS, NH CSS, NH CESWII
Sarah Barnum, PhD, CWB, LPA
Diana Walden, LPA

ENVIRONMENTAL ENGINEERING
Michael Clark, PE, LSP

LANDSCAPE ARCHITECTURE
Casey Lee Bastien, RLA (NH)
Jef Fasser, AICP, RLA, LEED AP
Ricardo Austrich, RLA

SURVEY
Sean Ewald, PLS
Jason Croteau

GEOTECHNICAL
Seth Hamblin, PE (NH), GTR
Shaun Hevey, PE (NH), GTR
Curtis George, PE, GTR

GIS/REMOTE SENSING
George Andrews, GISP
Kelsey Andrews
Adam Sloat

Project Team

Highway & Bridge Design Engineering Services in Support of LPA Projects

Name	Project Role	Years of Experience	Years with Firm	SERVICES: LPA Certified	Project Management	Highway Design	Bridge Design	Environmental/Permitting	Traffic Analysis & Control Design	Hydraulic Engineering	Technical Writing	Geotechnical Analysis	Topographic Surveying	ROW Layout & Development Plans	Public Involvement	Alt. Procurement Methods
Wayne Keefner, PE, PTOE, LEED AP, LPA	Project Manager, Highway Engineer, Traffic Engineer	30	2	■	■	■		■	■		■			■	■	■
David Biancavilla, PE, LEED AP, LPA	Principal-in-Charge, Civil Engineer	25	23	■	■			■			■				■	■
Bill Paille, PE, LPA	Highway Engineer	35	8	■	■	■			■		■			■	■	■
Bryan Wentworth, PE, LPA	Highway Engineer, Civil Engineer	17	6	■	■	■		■		■	■	■			■	■
Micah Morrison, PE, SE, LPA	Bridge Engineer	23	14	■	■	■	■			■	■				■	■
Sam Offei-Addo, PE, PTOE	Traffic Engineer	37	29		■	■			■		■				■	■
Gillian Davies, PWS, SSSSNE, NHCWS, CESSWI	Climate Resilience	32	20		■			■			■				■	
Katie Kemen, MBA	Climate Resilience	15	4		■			■			■				■	
Luke Hurley NH CWS, NH CSS, NH CESWII	Environmental	25	2		■			■			■				■	■
Sarah Barnum, PhD, CWB, LPA	Environmental	22	4	■	■			■			■				■	■
Diana Walden, LPA	Environmental	37	23	■	■	■		■			■				■	■
Michael Clark, PE, LSP	Environmental	38	6		■			■			■	■				■
Casey Lee Bastien, RLA	Landscape Architecture	23	19		■	■					■				■	■
James Fasser, RLA, LEED AP	Landscape Architecture	44	19		■						■				■	■
Ricardo Austrich, RLA	Landscape Architecture	27	5		■						■				■	
Sean Ewald, PLS	Surveying	28	27		■	■					■		■	■	■	■
Jason Croteau	Surveying	5	2		■						■		■			■

Highway & Bridge Design Engineering Services in Support of LPA Projects

Name	Project Role	Years of Experience	Years with Firm	LPA Certified	Project Management	Highway Design	Bridge Design	Environmental/Permitting	Traffic Analysis & Control Design	Hydraulic Engineering	Technical Writing	Geotechnical Analysis	Topographic Surveying	ROW Layout & Development Plans	Public Involvement	Alt. Procurement Methods
		SERVICES														
Seth Hamblin, PE, GTR	Geotechnical	23	6			■	■			■	■	■				■
Shaun Hevey, PE GTR	Geotechnical	9	7				■				■	■				■
Curtis George, PE, GTR	Geotechnical	19	18			■	■			■	■	■				■

INTRODUCTION TO TEAM FIRMS

In forming our team, we have assembled a talented group of industry professionals who have the experience and skill set to provide sound guidance and support to NHDOT. The paragraphs that follow provide our team composition and the talents that each firm will provide in support of locally administered LPA qualifications-based selection contracts.

BSC
Prime Consultant

At BSC, we partner with our clients to deliver creative and practical transportation, land development, and environmental solutions. We also help them find climate-resilient and sustainable solutions. Clients trust BSC to work with them to expertly guide siting, strategically navigate regulatory processes, and holistically design infrastructure to help achieve their vision.

BSC's engineers, planners, and scientists take pride in their ability to respond nimbly to move projects forward. We solve complex challenges by applying expertise across disciplines, sharing ideas and perspectives to see a project from every side.

The purpose of our work is to improve the quality of life in and around our communities using our skills and experience to promote balance between the built and natural environment. Proudly employee-owned, our people are the heart of our company.

Geosciences Testing and Research, Inc. (GTR)
Subconsultant: Geotechnical Engineering

Geosciences Testing and Research, Inc. (GTR) was founded in 1995 and provides foundation engineering and geotechnical consulting services and specialization in design, instrumentation, and testing of deep foundations in support of design, construction, and post-construction phases of geotechnical projects for both public and private agencies. Their notable New Hampshire Department of Transportation projects include the design of a permanent multi-tier soil nail wall in accordance with NHDOT standards on NH Route 12 in Charlestown, NH; CSL and thermal integrity profiling testing services for drilled shafts in support of the US 2 over the Connecticut River project in Lancaster, NH, and Guildhall, VT; and providing CSL and thermal integrity profiling (TIP) testing services on approximately 100-foot long, 120-inch diameter, reinforced concrete drilled shafts supporting new bridge piers in support of the Sarah Mildred Long Bridge replacement from Portsmouth, NH, to Kittery, ME.

> **Clients trust BSC to work with them to strategically navigate regulatory processes and holistically design infrastructure to help achieve their vision.**

References

James Dalton, PE
Bridge Project Manager
MassDOT Highway Division
857-368-9313
james.m.dalton@state.ma.us

Joshua Holden
Lead Environmental Scientist
National Grid
781-907-3648
joshua.holden@nationalgrid.com

Rhonda LaBombard
Town Administrator
Town of Sheffield, MA
413-229-7000 x152
rlabombard@sheffieldma.gov

Appendix

- Resumes
- Applicable Work Experience

RESUMES
BSC Core Team

Wayne Keefner, PE, PTOE, LEED AP, LPA

Project Manager, Highway Engineer (Lead), Traffic Engineer

Years of Experience: 30

Education: BS, Civil Engineering, University of Massachusetts, Amherst

Registrations:

Professional Engineer
MA, NH, NY, RI

Certification: NH LPA

Meet Wayne: Wayne is an experienced civil engineer with very strong and diverse experience spanning public and private site civil engineering as well as public highway engineering, combined with strong management and organizational skills. He has progressive experience in all phases of project coordination, strategic planning, engineering design, staff training, bid development and site layout and design. Wayne is a highly effective and dedicated individual with a reputation for consistently going beyond what is required and using high personal standards to achieve results.

Relevant Projects:

Route 3A, Town of Hingham, MA - Wayne was the project manager for this 1.5-mile roadway safety improvement project located along the Hingham waterfront. The major elements of the project include a new off-street shared use path, conversion of the existing rotary to a modern roundabout and a road diet and reducing the number of travel lanes from four to two for a portion of the project.

Beacon Street Roadway/Streetscape Improvements, City of Somerville, MA - Wayne was project manager and lead designer for the full-depth reconstruction of Beacon Street from Oxford Street to the Cambridge city line. The design included upgraded pedestrian access and was the first MassDOT project with a cycle track. His work on the project included detailed comparisons of traffic operations and analysis of development opportunities with alternative signalized intersection improvements.

Route 36 (Center Street), Town of Pembroke, MA - Wayne was project manager and lead designer for the Route 36 project, a full-depth reclamation of approximately two miles of roadway including pedestrian upgrades and drainage improvements. Services included signal warrants for multiple intersections affected by the project, traffic operations analysis, and design of traffic signals, signing, and striping plans.

David Biancavilla, PE, LEED AP, LPA *Principal-in-Charge, Civil Engineer, BSC Group* Years of Experience: 25 Education: BS, Civil Engineering, Merrimack College
Registrations: Professional Engineer - MA, NH, RI Certification: NH LPA

Meet Dave: Dave has engineering experience in managing and designing commercial, residential, and public engineering projects in Massachusetts, Rhode Island, and New Hampshire. He has managed multi-disciplined projects, obtained state and local permits, and has prepared and managed construction documents for projects both large and small. Dave leads BSC's New England-based team of engineers, providing project guidance and QA/QC review as well as staff mentoring.

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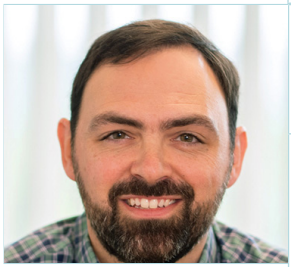
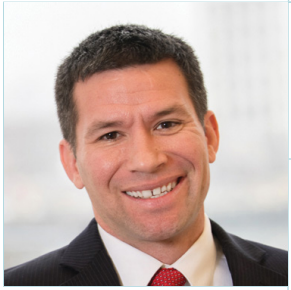
Bill Paille, PE, LPA *Highway Engineer, BSC Group* Years of Experience: 35
Education: BS, Civil Engineering, University of Massachusetts, Amherst Registrations: Professional Engineer - CT, MA, NH, RI, VT Certification: NH LPA

Meet Bill: Bill provides senior-level guidance for transportation project designs of variable complexity for both private and public sector clients, including municipalities and state agencies. Bill has a diverse portfolio of transportation projects including roadway, parking lot, and multi-use trail facilities. He has managed numerous traffic improvement projects, including the installation and upgrades of signal systems as well as large-scale roadway improvement projects.



Bryan Wentworth, PE, LPA *Highway Engineer, BSC Group*
Years of Experience: 17 Education: BS, Civil Engineering, University of New Hampshire Registrations: Professional Engineer - MA, NH, NJ Certification: NH LPA

Meet Bryan: Bryan's engineering and consulting experience includes stormwater management design, site feasibility assessments, environmental due diligence and remediation, utility engineering, and construction phase services. His expert services have been provided for diverse clients, such as solar energy providers, private corporations, and state and federal agencies.



Micah Morrison, PE, SE, LPA *Bridge Engineer (Lead), BSC Group*
Years of Experience: 22 Education: MS, Civil Engineering, University of Massachusetts, Amherst / BS, Civil Engineering, Worcester Polytechnic Institute
Registrations: Professional Engineer - CT, HI, MA, NH, VT Certification: NH LPA

Meet Micah: Micah's comprehensive background in structural design and analysis, combined with his strong project management skills, enables him to provide state agencies with practical and thoughtful bridge design, rehabilitation, and replacement services. Micah works collaboratively with environmental, permitting, and roadway colleagues to approach projects in an integrated fashion, facilitating permitting, environmental mitigation, and efficient construction.

Samuel Offei-Addo, PE, PTOE, *Traffic Engineer, BSC Group* Years of Experience: 36
Education: MS, Transportation Engineering, University of Massachusetts / BS, Civil Engineering, University of Science and Technology, Ghana Registrations: Professional Engineer - CT, MA

Meet Samuel: Samuel's expertise in transportation engineering encompasses maintenance and management programs, design of geometric and drainage improvements, condition inspection, resident engineering, and pavement/sub base design. For traffic projects, he provides intersection, signalization and pavement marking design, as well as transportation systems analysis/planning, travel demand forecasting, and development of plans to maintain traffic during construction.

BSC CORE TEAM

Gillian Davies, PWS, SSSSNE, NHCWS, CESSWI, *Climate Resilience, BSC Group*
Years of Experience: 32 Education: MES, Ecosystem Ecology, Yale University School of the Environment / BA, Psychology Williams College Certifications: PWS, SSSSNE, NHCWS, CESSWI

Meet Gillian: Gillian provides expertise and innovative solutions encompassing peer-review for Conservation Commissions, ecosystem-based climate change resiliency and mitigation assessment and planning, state and federal permitting, wetland delineation, impact analysis, wetland restoration/mitigation planning, design and monitoring, expert witness testimony, and environmental construction/post-construction inspection.

Katie Kemen, MBA *Climate Resilience, BSC Group* Years of Experience: 14
Education: MBA, Simmons University / BSC, Public Health, The George Washington University

Meet Katie: Katie brings experience in the field of emergency management and business continuity with a focus on resilient public health and healthcare systems. Much of her work has focused on regional or systems-level projects to understand risk and vulnerabilities and develop mitigation and response plans to address future risk. She is skilled at engaging diverse stakeholder groups across professional disciplines, levels of government, and from the community through analysis, planning, and implementation.

Luke Hurley, CWS, CSS, CESWII *Environmental Permitting, BSC Group*
Years of Experience: 25 Education: BS in Environmental Biology, University of Massachusetts, 1996, Concentration in Ornithology, Field Ecology & Biology, Entomology, Invertebrate Zoology, Botany, Wetland Ecology and Limnology
Certifications: NH CWS, NH CSS, NH CESWII

Meet Luke: Luke Hurley has worked in the field of wetland science and ecology since 1999. Luke has immense experience coordinating and performing field wetland and soil analyses, delineating wetlands, wetland functions and values and project impact assessments, vernal pool certification, wetland mitigation and restoration design and monitoring, wildlife habitat evaluation, and rare, threatened, and endangered species surveys, inventories, and permitting documents.

Sarah Barnum, PhD, CBW®, CWB, LPA *Environmental Permitting, BSC Group*
Years of Experience: 22 Education: PhD, Conservation Planning; MS, Wildlife Biology, University of Colorado / BS, Wildlife Biology, University of Vermont
Certification: NH LPA

Meet Sarah: Sarah provides expertise to the transportation and energy sectors as well as a variety of general development projects. Her work is focused on impact assessment for threatened and endangered species, mitigation planning, and a wide range of state and federal permitting processes. She has hands-on experience with many terrestrial species groups, including forest birds, amphibians, mammals, and reptiles.

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Diana Walden, LPA *Environmental Permitting, BSC Group* Years of Experience: 37
Education: MS, Wildlife and Fisheries Conservation, University of Massachusetts, Amherst /BS, Environmental Studies and Biology, St. Lawrence University
Certification: NH LPA

Meet Diana: Diana has extensive experience assisting clients with protected species permitting and regulatory processes in Massachusetts, New Hampshire and Connecticut. Her skills include wetland ecology and delineation, and wildlife conservation and habitat evaluations. She regularly provides services involving environmental compliance inspection of construction, stormwater issues, and sediment and erosion control best management practices.

Michael Clark, PE, LSP *Environmental Engineer, BSC Group* Years of Experience: 37
Education: MS, Civil/Geotechnical Engineering; BS, Civil Engineering, University of Lowell Registrations: Professional Engineer - CT, MA, ME, RI, ME

Meet Michael: Michael has provided environmental and geotechnical due diligence services for a variety of land acquisition and development projects. He has provided geotechnical services for transportation projects including roadways, construction support for wastewater treatment plants and water supply systems, and closure design and construction administration for numerous municipal and industrial landfills.

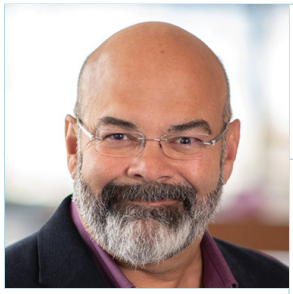
Casey Lee Bastien, RLA *Landscape Architecture, BSC Group*
Years of Experience: 22 / Education: BS, Landscape Architecture, University of Massachusetts, Amherst Registrations: Registered Landscape Architect - MA, NH

Meet Casey-Lee: Casey-Lee designs landscape solutions that speak to the purpose and personality of a site so that it resonates with the client and users. His passion to research and innovate defining features into his designs adds meaning and value to a wide variety of project types including parks, streetscapes, transportation, institutions, and natural habitats. He has experience in horticulture and lighting design and provides coordination and design of graphic and sculptural arts, digital modeling, fabrication, and installation.

James Fasser, RLA, AICP, LEED AP *Landscape Architecture, BSC Group*
Years of Experience: 43 / Education: BS, Landscape Architecture, University of Virginia Registrations: Registered Landscape Architect - MA, NY

Meet Jef: Jef's experience includes projects involving urban planning and design, site development and landscape architecture design, urban revitalization plans, feasibility studies, multi-family housing developments, active and passive parks, streetscapes, trails, as well as colleges and university campuses. He also has experience in efficiently balancing the needs of diverse stakeholders with maximizing clients' budgets.

BSC CORE TEAM



Ricardo Austrich, RLA *Landscape Architecture, BSC Group*
Years of Experience: 26 / Education: Master of Landscape Architecture, University of Virginia, School of Architecture / BS, Cornell University, College of Agriculture & Life Sciences Registrations: Registered Landscape Architect - MA

Meet Ricardo: Ricardo's practice in professional landscape architecture maintains a focus on design, including but not limited to parks, streetscapes, cemeteries, historical landscapes as well as site planning. These experiences effectively exemplify Ricardo's specialization in plant-centered approaches, embracing methods that encompass sustainable plant solutions characterized by both pleasing aesthetics and performance.

Sean Ewald, PLS *Survey, BSC Group* Years of Experience: 25 Education: BS, Civil Engineering, University of Houston Registrations: Professional Land Surveyor - MA

Meet Sean: Sean has extensive experience in boundary surveying, including deed research, property line calculations, and legal issues. He has knowledge of construction surveying techniques through his land development experience. In his role at BSC Group, Sean has been instrumental in the development of CAD standardization and has produced significant gains in productivity through automation.

Jason Croteau *Survey* Years of Experience: 22
Education: AA, Liberal Arts, Northern Essex Community College

Meet Jason: Jason has extensive knowledge and experience in surveying, land development, land use regulations, geology, GIS, and producing construction layouts.

Jason is a member of the New Hampshire Land Surveyors Association (NHLSA) and serves as Survey Project Manager and Group Manager, as well as running the field standards committee at BSC.

George Andrews, GISP *GIS, Remote Sensing, BSC Group* Years of Experience: 9
Education: BS, Geography; BA, Communications, Worcester State University
Registrations: Certified GIS Professional (GISP); NOAA Coastal Inundation Mapping;

Meet George: George supports projects with geospatial analyses, digital mapping, modeling, database development, and data digitization. He collaborates with clients to bring new technology solutions which support their goals for continuous improvement to processes and operations. George is integral to the growth of the GIS practice at BSC and is responsible for GIS and GIS web applications for many discipline areas.

George is constantly undertaking R&D challenges, striving to innovate both for clients and within BSC. George is a BSC Subject Matter Expert (SME), a go-to for GIS, sUAS, and technology implementation and use company-wide.

Kelsey Andrews *GIS, BSC Group* Years of Experience: 12

Education: BA, Geography – Specialization in GIS, Clark University

Meet Kelsey: Kelsey has expertise in designing and constructing robust geodatabases for asset management, developing mobile mapping applications for efficient and large-scale field data collection, applying a full range of geospatial analyses to diverse datasets, creating web and traditional digital cartography, georeferencing and digitizing current and historical features, supporting permit applications and various types of management plans. She is familiar with the use and manipulation of GIS data layers for Rhode Island, Massachusetts, and Connecticut. Kelsey has expertise in ArcGIS Online platform (including Field Maps, Survey123, QuickCapture, Web Experiences, StoryMaps) and desktop suite (ArcGIS Pro 3.1, ArcMap 10.8.2), as well as implementing and deploying a variety of devices for mobile field data collection (Trimble, Eos, Android, iOS).

Adam Sloat, *Remote Sensing, BSC Group* Years of Experience: 22

Education: MPS, Geographic Information Technology, Concentration in Remote Sensing, Northeastern University; BS, Environmental Studies, Minor in Management, Northeastern University Registrations: United States Geospatial Intelligence Foundation GEOINT Collegiate Certified (USGIF GCC)

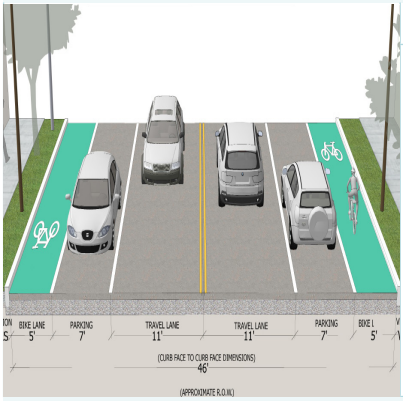
Meet Adam: Adam's creative and innovative use of technology increases the value of survey data to client decision making. He uses his knowledge to analyze project needs, determine the best ap-plication of technologies, and implement appropriate QA/QC processes. Adam manages the survey application of BSC's drone program, including flight planning, project planning, and data implementation and is an active leader in the develop-ment of new technology ser-vices at BSC, including leading the development of a new re-mote sensing service.

Seth Hamblin, PE *Geotechnical, GTR* Years of Experience: 16 Education: BS, Civil Engineering, Tufts University Registrations: Professional Engineer - MA, ME, NH, NY, RI, VT

Meet Seth: Seth's background includes design, construction, and testing of shallow and deep foundation; earth support systems; design of concrete, steel and timber structures; soil dynamics; and surveying. His experiences include managing the design, installation, and monitoring of geotechnical instrumentation systems; dynamic and static testing of piles; geotechnical field services; and environmental remediation projects and sampling.

WORK EXPERIENCE
Highway Design

	SERVICES									
	Project Management	Environmental/Permitting	Traffic Analysis & Control Design	Hydraulic Engineering	Technical Writing	Geotechnical Analysis	Topographic Surveying	ROW Layout & Development Plans	Public Involvement	Alt. Procurement Methods
Project: Tyler Street Intersection Improvements Pittsfield, MA / BSC Group	■	■	■		■		■		■	■



Client: City of Pittsfield, MA **Timeline:** 2016 - Present

BSC Group supported the City of Pittsfield in planning and designing infrastructure enhancements to spur economic development in the downtown area. BSC worked closely with the residents of the Tyler Street area to develop a neighborhood improvement plan that involved local branding through streetscape enhancements, as well as improvements to the intersection of Tyler Street, Dalton Avenue, and Woodlawn Avenue. BSC performed a field and base plan survey, collected traffic data, and collaborated with City staff to prepare three conceptual design alternatives that will maximize available public right-of-ways and minimize impacts to private properties. Project is currently under construction. BSC is providing construction administration services.

Project: Design and Permitting Services for the Southern New England Trunkline Trail / Franklin, MA / BSC Group	■	■	■		■	■	■	■	■	■

Client: Dept. of Conservation & Recreation (MA) **Timeline:** 2018 - 2020

BSC provided permitting and design services to construct a concrete culvert to serve as a tunnel to provide a connection under Prospect Street in Franklin for the Southern New England Trunkline Trail. The trail system is a 10-mile facility that includes a 10-foot wide, shared-use path along an abandoned railroad right-of-way. BSC prepared conceptual design scenarios and recommended a four-sided box culvert as the preferred option. Large wingwalls were designed at the entrance and exit of the tunnel, and helped to minimize the length of the tunnel and avoided the need for lighting.

Project: Design Improvements to Hammond Pond Parkway Newton, MA / BSC Group	■	■	■		■			■	■	■

Client: Dept. of Conservation & Recreation (MA) **Timeline:** 2019 - Present

BSC Group is providing the Massachusetts Department of Conservation and Recreation with traffic engineering, roadway design, landscape architecture, environmental permitting, public outreach, bidding, and construction phase services for the design of a full-depth road-way reconstruction of Hammond Pond Parkway in the City of Newton. A distance of approximately 5,200 linear-feet, the roadway will include a shared-use path on the west side, a reduction in travel lanes and width, new traffic signal designs at two existing signalized intersections, pedestrian and bicycle accommodations, as well as streetscape design elements to create a more aesthetically appealing corridor.

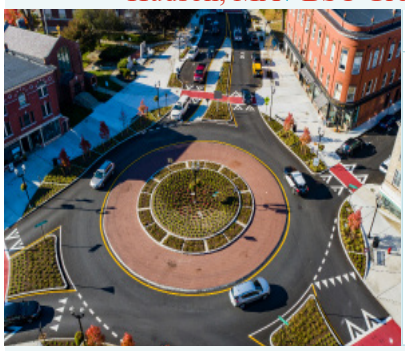
WORK EXPERIENCE
Highway Design

	SERVICES									
	Project Management	Environmental/Permitting	Traffic Analysis & Control Design	Hydraulic Engineering	Technical Writing	Geotechnical Analysis	Topographic Surveying	ROW Layout & Development Plans	Public Involvement	Alt. Procurement Methods
Project: Downtown Streetscape Improvements Ashland, MA / BSC Group	■	■	■		■		■		■	■

Client: Town of Ashland, MA **Timeline:** 2017 - 2020

BSC provided public outreach and preliminary design services for the Town of Ashland's Downtown Streetscape project. Our engineers, planners, and landscape architects assessed options for pedestrian access and walkability, bicycle accommodation, underground existing utilities lines, traffic mitigation designs, and aesthetic enhancements to build upon local character. Integrated and flexible traffic, parking, and walkable transportation networks are being developed to support reuse, redevelopment and future growth.

Project: Rotary and Economic Development Hudson, MA / BSC Group	■	■	■		■		■		■	■



Client: Town of Hudson, MA **Timeline:** 2016 - 2017

BSC worked with the Town of Hudson on designing and implementing an infrastructure-based economic recovery program that improved traffic conditions and enhanced streetscape features to successfully attract private development and small businesses. A dynamic public engagement program guided the planning and design process. BSC's design included neckdowns and channels to slow vehicular traffic while effectively directing movements to preserve the roadway's functional capacity. Importantly, widened sidewalks allowing local restaurants to provide outdoor dining which has contributed to the success of local restaurants.

Project: Massachusetts Avenue Intersection Safety Improvements Lexington, MA / BSC Group	■	■	■		■		■		■	■

Client: Town of Lexington, MA **Timeline:** 2011 - 2020

BSC Group provided professional consulting services for improvements along Massachusetts Avenue from Pleasant Street to Marrett Road, a distance of approximately 3,500 feet that included roadway reconstruction; traffic signal upgrades at Pleasant Street, the fire station, and Maple Street; and implementation of separated bicycle lanes along both sides of the roadway BSC also prepared design plans, performed a topographic survey, and prepared a survey base plan. BSC played a major role in addressing several project issues including pedestrian and bicycle safety, bicycle accommodation, gaining public support, and sensitivity to historic requirements

WORK EXPERIENCE
Bridge Design

	SERVICES									
	Project Management	Environmental/Permitting	Traffic Analysis & Control Design	Hydraulic Engineering	Technical Writing	Geotechnical Analysis	Topographic Surveying	ROW Layout & Development Plans	Public Involvement	Alt. Procurement Methods
Project: Kensington Avenue Culvert Replacement Meriden, CT / BSC Group	■	■	■	■	■	■	■	■	■	■

Client: City of Meriden, CT **Timeline:** 2017 - Present

BSC is currently working with the City of Meriden to provide engineering design services for the replacement of the Kensington Avenue culvert. Using a combination of GIS data, aerial photography, and field survey information, BSC developed base mapping for the project area. Supplemental field survey was also collected to support the preliminary hydraulic analysis.

Project: Interlaken Road over Larrywaug Brook Bridge Replacement Project / Stockbridge, MA / BSC Group	■	■	■	■	■	■		■	■	■

Client: Town of Stockbridge, MA **Timeline:** 2017 - 2021

BSC was responsible for the design and permitting services for the replacement of the Town of Stockbridge's Interlaken Road Bridge over Larrywaug Brook. Our team prepared drawings, specifications, cost estimates, structural calculations, and final design plans. The design specified a 42-foot precast arch in addition to a temporary 130-foot utility bridge.

Project: East New Lenox Road Over Sackett Brook Bridge Replacement / Pittsfield, MA / BSC Group	■	■	■		■			■	■	■

Client: MassDOT **Timeline:** 2018 - Present

BSC was responsible for the replacement of the East New Lenox Road Bridge in the City of Pittsfield, MA. The project included the replacement of the existing superstructure and abutments. Three cross section and three span length alternatives were evaluated to optimize the design to provide safe travel accommodations and minimize impacts to existing right of way, ease of construction, construction cost, and time of construction.

Project: Foster Hill Road Over Coys Brook Bridge Replacement / West Brookfield, MA / BSC Group	■	■	■		■		■	■	■	■

Client: MassDOT **Timeline:** 2017 - 2021

BSC worked with MassDOT to provide engineering design services for the replacement of Bridge W-19-003 (189). Using a combination of GIS data, available right-of-way mapping, and field survey information, BSC developed base mapping for the project area and evaluated both precast concrete and structural steel superstructure alternatives, with conventional and integral abutment substructure options.

WORK EXPERIENCE
Bridge Design

	SERVICES									
	Project Management	Environmental/Permitting	Traffic Analysis & Control Design	Hydraulic Engineering	Technical Writing	Geotechnical Analysis	Topographic Surveying	ROW Layout & Development Plans	Public Involvement	Alt. Procurement Methods
Project: North Royalston Road Bridge Over Tarbell Brook Winchendon, MA / BSC Group	■	■	■		■		■	■	■	■
Project: Bridge Replacements / Colrain, MA / BSC Group	■	■	■	■	■	■	■	■	■	■
Project: Town-Wide Bridge & Culvert Replacement Sheffield, MA / BSC Group	■	■	■	■	■	■	■		■	■

Client: MassDOT **Timeline:** 2014 - 2019

BSC has designed the full bridge replacement of North Royalston Road over Tarbell Brook. The project incorporated a detailed analysis of various structure types to determine the optimum bridge to be built at the rural, historical, and environmentally sensitive site. Based on a hydraulic analysis and the need to meet federal guidelines, the bridge was lengthened from 28 feet to 52 feet and widened from 20 feet to 27'-3". In order to reduce costs and decrease construction time, the precast concrete Northeast Extreme Tee Beam was used for the bridge superstructure.

Client: Town of Colrain, MA **Timeline:** 2016 - 2020

BSC designed and permitted the Adamsville Road over Tissdell Brook and Call Road over Fox Brook bridges. As part of the replacement designs, BSC provided hydraulic analysis, structural engineering, traffic engineering, survey, highway engineering, and environmental permitting services. Construction methods, including the use of prefabricated/precast bridge components, accelerated construction schedules and staged construction, were investigated to balance both cost and construction duration. BSC moved on to assessing and ranking all 33 municipally owned bridges.

Client: Town of Sheffield, MA **Timeline:** 2015 - Present

The Town of Sheffield retained BSC Group to design the repair/replacement of 5 bridges, 5 roadways and 1 culvert. The structural design and drawings prepared by BSC were submitted to MassDOT for a Chapter 85 Structural Review. The bridges and culvert were designed to carry all legal vehicular loadings and was in accordance with AASHTO and the MassDOT bridge Manual. BSC gained MassDOT approval allowing the project to proceed to construction, and then completion. BSC performed wetland delineation and survey at multiple locations. Hydraulic analyses were conducted for the culvert and bridges.

WORK EXPERIENCE
Utilities & Geotechnical

	SERVICES									
	Project Management	Environmental/Permitting	Traffic Analysis & Control Design	Hydraulic Engineering	Technical Writing	Geotechnical Analysis	Topographic Surveying	ROW Layout & Development Plans	Public Involvement	Alt. Procurement Methods
Project: Mount Support Substation Expansion Lebanon, NH / BSC Group	■	■			■			■		■

Client: Liberty Utilities and National Grid **Timeline:** 2019 - 2020

BSC provided ecological, licensing and permitting services to National Grid and Liberty Utilities for the Mount Support substation expansion and new 115kV tap line project. The purpose of this project is to upgrade existing electric transmission facilities in the Lebanon, New Hampshire region.

Project: A1/B2 Line Rebuild Project / Hinsdale & Winchester, NH BSC Group	■	■			■		■			■

Client: National Grid **Timeline:** Ongoing

BSC is currently supporting National Grid on the A1/B2 Transmission Line Asset Condition Refurbishment Project. The project scope includes rebuilding the line and planning for future operation capacity at 115kV. Our permitting support includes NHDES Alteration of Terrain, NHDES Shoreline Permitting, NHDES Major/Minor Wetlands Permit, NHSEC (anticipated), and environmental permitting for Clean Water Act Section 404. We are also providing access road design involving siting within the right-of-way and extensive cut and fill analyses.

Project: Slayton Hill Substation - W149 Transmission Line Installation / Lebanon, NH / BSC Group	■	■			■		■			■

Client: National Grid **Timeline:** 2016

BSC provided permitting support to National Grid and their engineering consultants to ensure the Slayton Hill Substation was permitted in accordance with local, state, and federal guide-lines, including adhering to New Hampshire Department of Environmental Services (NHDES) Best Management Practices. Field investigations included wetland delineation and GPS survey, GIS mapping of wetlands and environmental constraints, permit plans for local, state, and federal wetland permits.

Project: Sarah Mildred Long Bridge Replacement Portsmouth, NH – Kittery, ME / GTR	■			■	■	■				

Client: NHDOT **Timeline:** 2018

GTR personnel provided CSL and Thermal Integrity Profiling (TIP) testing services on approximately 100-foot long, 120-inch diameter, reinforced concrete drilled shafts supporting new bridge piers. The testing was performed as part of a quality control program for the drilled shafts. TIP was performed using both the thermal wire and thermal probe methods.

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