



New Hampshire DOT

Statewide On-Call Preliminary
Engineering Prequalified List of Consultants for
**Locally Administered Local Public Agency (LPA)
Qualifications-Based Selection Contracts**

January 2024

Prepared for:

**New Hampshire
Department of Transportation**

Prepared by:

Kimley»»Horn

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1. Cover Letter

New Hampshire Department of Transportation
7 Hazen Drive
Concord, NH 03302

Kimley-Horn and Associates, Inc.
271 Waverley Oaks Road, Suite 302
Waltham, MA 02452

RE: Statewide On-Call Preliminary Engineering Prequalified List of Consultants for Locally Administered (LPA) Qualifications-Based Selection Contracts

Dear Mr. Reynolds,

Kimley-Horn is excited to present our prequalifications for Locally Administered Local Public Agency (LPA) Qualifications-Based Selection Contracts for Highway and Bridge Design. New federal funding opportunities will enable New Hampshire localities to complete much-needed bridge and highway design, rehabilitation, and repair. As demonstrated within this proposal, we hope you'll agree that despite being a newer presence in the region, we possess the expertise, experience, and qualifications required to deliver projects through the LPA process successfully.

The Kimley-Horn team is:



COMMITTED. Over the last five years, we have been growing our presence all over New England. We have been diligently serving the City of Manchester in New Hampshire and have contracted with RIDOT, ConnDOT, Massport, and numerous local communities in Massachusetts such as Boston, Leominster, Reading, Sherborn, and Weymouth to name a few. We are committed to establishing a long-lasting and mutually beneficial partnership with the New Hampshire DOT and the state's local municipalities.



PROVEN. The Kimley-Horn team assembled for you includes team members with decades of combined experience executing projects with similar technical requirements for other state departments of transportation, including Massachusetts, Pennsylvania, Virginia, and many more. Many of these projects utilize federal or state funds but are administered locally. Our team also includes members who are LPA certified in New Hampshire.



DEEP. The Kimley-Horn team has a deep bench of transportation professionals ready to serve the municipalities on any project or need that arises. With our national staff of more than 7,400 professionals on top of the key personnel identified, Kimley-Horn will bring all the skills and resources to implement the LPA projects and get the job done under budget and ahead of schedule.

We are excited for the opportunity to submit these prequalifications to the NHDOT. If you have any questions regarding our prequalifications, please feel free to contact me at (339) 502-0462 or wong@kimley-horn.com.

Sincerely,

Kimley-Horn and Associates, Inc.

Wing Wong, P.E., PTOE
Project Manager

Kathy Keegan, P.E.
Principal-in-Charge,
Authorized to execute
a contract on behalf of the firm

2. Project Understanding and Approach

NHDOT receives federal funds from the Federal Highway Administration (FHWA) to support the development, improvement, and enhancement of the state's transportation network. A portion of these funds is allocated to municipalities and other project sponsors to implement eligible projects at the local level. These funded projects are known as Local Public Agency (LPA) projects. The LPA process ensures that each LPA project follows an established project development process to meet its goals, stay within budget, and adhere to the overall project schedule, while also promoting collaboration and growth within the community. As we demonstrate in this proposal, **our team brings years of experience completing municipal projects with similar project delivery requirements as the LPA process.** Our understanding of the LPA process is summarized below:

Engineering Study

This design phase involves several key steps in the project development process which include:

- A Local Concerns Meeting to gather public input
- A Purpose and Need Statement to define the project's goals
- An assessment of existing conditions, design criteria, environmental reviews
- An alternatives analysis and proposed layout
- Structure studies and recommendations
- Cost estimates
- A public presentation of the proposed action

The Engineering Study is then submitted to the NHDOT for review and approval. This process ensures that the project is well-defined, addresses local concerns, meets design criteria, considers environmental impacts, and provides cost estimates and public input.

Preliminary Design

After receiving approval from NHDOT for the Engineering Study, the project team will proceed with the Preliminary Design. The design phase includes developing the proposed action plan in more detail to complete the NEPA process. The

submission shall include various drawings/plans in accordance with the LPA Manual. Additionally, the cost estimate and engineer's estimate will be updated based on the preliminary design. The Preliminary Design is then submitted to the NHDOT for review and approval.

Final Design/Plans, Specifications, and Engineer's Estimate (PS&E)

Once the preliminary Design is approved by NHDOT and all environmental documentation has been submitted and NEPA process completion confirmed, the project will proceed to the Final Design phase. At this stage, all comments on the Preliminary Design will be addressed and additional design details, such as drainage details, the traffic management plan, and coordination of utility relocation will be added to the design plan set. Additionally, the latest cost estimate and specifications will be incorporated into the Final Design/PS&E submission. Right-of-Way negotiations and acquisitions will begin after the Final Design Phase.

Bid Phase

Once the Final Design is approved, the project will be advertised for construction. The contract documents will be prepared and will include items such as bid forms, contract agreements, schedule of prices, and bond requirements, among others. The contract may also include Add Alternatives as applicable depending on available construction funds. Finally, a bid review will be performed and a recommendation for bid award will be made.

Highway Design

Highway design is one of the mainstays of Kimley-Horn's professional practice. Collectively, our engineers have been responsible for the design of more than 2,500 miles of roadway across the U.S. We have provided these services for urban, rural, primary, secondary, and interstate roadways for clients ranging from municipalities and state departments of transportation to private developers, from simple turn lanes to miles of interstate. **Our team is well-equipped to address any aspect of roadway design, such as geometrics, utility relocations, and traffic control design.** Our team has significant

experience designing roadway improvements similar in scope and schedule to the types of potential projects under the LPA program, where strict adherence to state and federal standards is required.

Bridge Design

Our success in bridge design stems from a well-earned reputation of providing economical and constructible bridge design solutions for a wide variety of roadway projects. **Our bridge design process goes through a stringent collaborative development across disciplines.** For example, the roadway designers bring to the table the horizontal, vertical, width, and clearance requirements needed, as well as the traffic control needs that might require unique phased construction. With the roadway design needs in hand, our bridge designers can begin looking at bridge selection types, span arrangements, phased construction issues, preliminary deflection calculations for vertical clearance, and foundation types. These efforts are then used to come up with a bridge-type selection report that presents the benefits and cost for several alternatives examined and provides the justification for our recommendation.

Additional Work Efforts

Traffic Engineering/ Transportation Planning

From complex ITS and traffic signal systems to simple pavement marking or signing plans, our team has the experience, training, and knowledge to break up the bottlenecks and keep traffic moving. Additionally, our team includes designers and construction inspectors who understand the importance of maintaining traffic through construction work zones and have highly trained and experienced engineers to prepare MOT and sequence of construction plans to ensure the safety of both the motorists and the construction crew. We are skilled in the design of barrier systems including concrete barriers, guardrails, and impact attenuators.

Hydraulics/Hydrology

Our team's technical expertise includes hydrology and hydraulics, stormwater management and

BMP analysis and design, erosion and sediment control, and scour analysis as well as permitting support. Our team is further supported by Certified Floodplain Managers to provide minor and major flood control works, and incorporation of Federal Emergency Management Agency coordination should the need arise. We are proficient in the expert application of many hydrologic and hydraulic models and software, which we use on a daily basis. These programs include HEC-RAS, STORMPLUS, WSPRO, RMS, and StormCAD, among others.

Public Engagement

Public engagement is a core discipline for Kimley-Horn and supports our planning and preliminary design strengths as a firm. To meet a project's needs, our team of dedicated staff will craft messaging and ensure its consistency, perform public engagement, develop and use websites and social media, create graphics, and develop collateral and support visualization material, including video and virtual/augmented reality.

Environmental and Geotechnical

Kimley-Horn maintains an in-house experienced team of senior environmental scientists, biologists, planners, and field technicians with expertise in a wide range of environmental resource evaluation and problem-solving services. Our team will be supported by our local partners **Haley & Aldrich, Inc.** and **SEARCH, Inc.** to handle local permitting, natural and cultural resources, and geotechnical needs.

Topographical Survey and Right-of-Way Documents

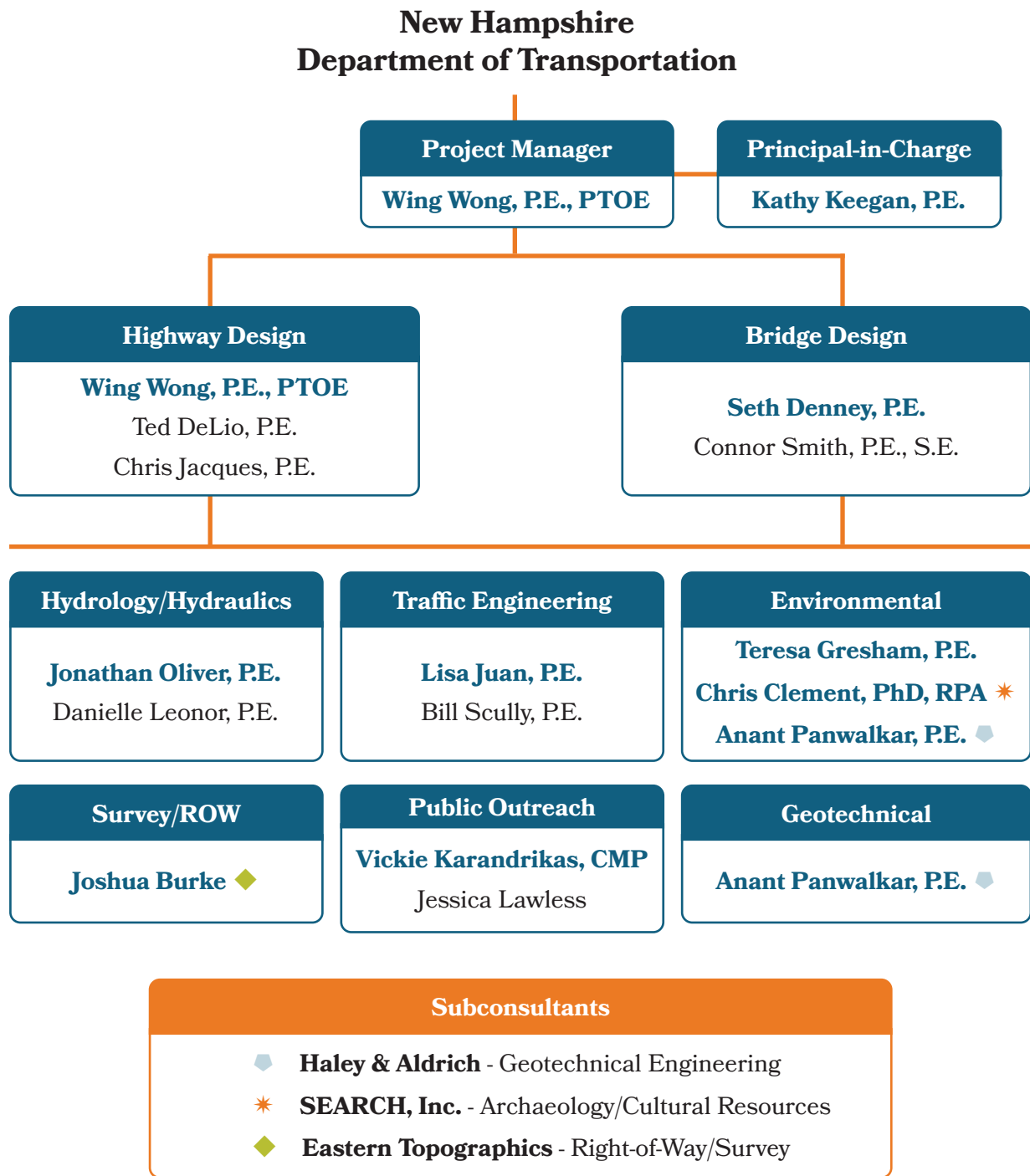
Our team will be supported by **Eastern Topographics** to produce basemapping to meet the needs of the project, covering traditional on-the-ground survey to aerial mapping, as well as Right-of-Way layout and documentation.

Technical Writing

Kimley-Horn's technical staff often work with our deep bench of Marketing and Graphic Design staff. Together, our team excels at creating concise, engaging, and informative reports, releases, and other written and visual copy.

3. Organizational Chart

Bold indicates key personnel and resumes shown, top staff member shown for each category is task lead.



4. Project Team

Firm Overview

Kimley-Horn and Associates, Inc. nation's premier planning and design consulting firms. Founded in 1967, Kimley-Horn has evolved into a multidisciplinary consulting and design firm with 7,500+ employees in more than 125 offices nationwide, including one in Waltham, MA. **Our network of offices across the firm operates as a single profit center which gives us the ability to draw upon specialists and resources across the firm at a moment's notice.** Our unique approach to teamwork and collaboration means that our clients will get the best expertise for any given challenge regardless of geographic barriers. **Kimley-Horn provides a full suite of services**, including highway and bridge design, transit, transportation, aviation, environmental sciences, ITS, land development, landscape architecture, urban planning, and water resources, among others. Kimley-Horn was ranked #9 on *Engineering News-Record's* List of the top 500 U.S. Design firms, and #7 for Highways in 2023.



We're ranked



in Engineering News-Record's
Top 50 Transportation Firms

Teaming Partners

Kimley-Horn will be supported on this effort by 3 experienced subconsultants to round out the full suite of required services. These firms all have experience in New Hampshire and will be a great asset to the Kimley-Horn team.

Haley & Aldrich

Established in 1957, Haley & Aldrich has provided geotechnical engineering services on transportation projects throughout northern New England for more than 60 years. They have a long history of executing bridge and highway projects in New Hampshire and for NHDOT, including the I-293 Exit 5 interchange project in Manchester, the Conway Bypass project, improvements to Route 3, Exits 1 and 2 in Nashua, and the reconfiguration of I-93, Exit 13 in Concord. In addition, they provided geotechnical engineering services for the design/construction of the I-95 Portsmouth interchange at a time when only a few DOTs were using surcharging/sand drains for ground improvement. Haley & Aldrich has held a geotechnical on-call contract with NHDOT for the past three years and helped NHDOT on various projects, including the Everett Turnpike widening project.

SEARCH, Inc.

Southeastern Archaeological Research, Inc. (SEARCH) is an archaeology firm that deploys the full spectrum of cultural heritage services worldwide. SEARCH20, its maritime program, is at the forefront of historic shipwreck and submerged pre-contact archaeology, paleolandscape reconstruction, and deep-water archaeology. SEARCH's staff are cultural resource industry leaders, pioneers, and subject matter experts across 45 market, regional, and research sectors. Since 1993, SEARCH has completed more than 5,000 commercial and government projects in 48 US states, 6 US territories, and 39 countries spanning 7 continents and 4 oceans; including more than 1,000 transportation projects. By integrating science, technology, and creativity, SEARCH harnesses the power of the past to advance the projects, places, and people it serves. SEARCH currently employs more than 300

cultural resources professionals and has 3 hybrid locations within New Hampshire.

Eastern Topographics

Eastern Topographics has been an industry leader in providing highly accurate mapping for DOTs, municipalities, engineers, and surveyors for more than 40 years. They are a full-service aerial mapping firm specializing in the production of high quality, engineering-grade topographic and planimetric mapping. They provide flight planning, aerial imagery/LiDAR acquisition, ground control services, orthophotography, historic imagery

expertise, compilation of topographic mapping from aerial imagery and LiDAR, planimetric mapping, and digital orthophoto production.

Their team, located in the Lakes Region of New Hampshire, continually stays abreast of rapidly changing technologies, standards, and regulations. Their mapping specialists are intimately familiar with the topography, ground surface conditions, foliage, and cultural features found in the Northeast. All their mapping is compiled by or under the immediate supervision and direction of an ASPRS Certified Photogrammetrist and NH Licensed Land Surveyor.

	Years of Experience	LPA Certified	Highway Design	Bridge Design	Structural Engineer	Project Management	Environmental	Hydrology/Hydraulics	Traffic Analysis/Design	Survey	Geotechnical Analysis	Public Involvement
Wing Wong, P.E., PTOE	20	x	x			x			x			x
Kathy Keegan, P.E.	29					x						
Ted DeLio, P.E.	13		x			x			x			
Chris Jacques, P.E.	8	x	x			x						
Seth Denney, P.E.	19			x	x	x			x			
Connor Smith, P.E., S.E.	11			x	x	x			x			
Jonathan Oliver, P.E.	12					x		x				
Danielle Leonor, P.E.	6					x		x				
Vickie Karandrikas, CMP	28					x						x
Jessica Lawless	14					x						x
Joshua Burke	27					x				x		
Chris Clement, PhD, RPA	29					x	x					
Anant Panwalkar, P.E.	25					x	x				x	
Teresa Gresham, P.E.	22					x	x					
Lisa Juan, P.E.	9		x			x			x			x
Bill Scully, P.E.	47		x			x			x			x

5. References

Owen Friend-Gray, P.E., Deputy Department of Public Works Director

City of Manchester

475 Valley St, Manchester, NH 03103

603.624.6444

Project: City of Manchester, DPW Staff Support and Asset Management Program

Jeanette Janiczek, Urban Construction Initiative Program Manager

City of Charlottesville

305 4th Street NW, Charlottesville, VA 22902

janiczek@charlottesville.org

434.970.3309

Project: Belmont Bridge Replacement

Stan Newcomb, Principal Engineer

City of Chesterfield

9901 Lori Road, Chesterfield, VA 23832

NewcombS@chesterfield.gov

804.748.1037

Project: I-95 at Route 10 Interchange Improvements Phase 1

6. Appendix - Resumes



Wing Wong, P.E., PTOE
Project Manager, Highway Design Lead

Wing brings 20 years of experience working with state municipal and DOT clients including Rhode Island Department of Transportation (RIDOT), Massachusetts Department of Transportation (MassDOT), VTrans, and numerous others. Specializing in multidiscipline transportation projects, Wing has a wide breadth of technical capabilities to lead many transportation engineering topics such as traffic studies/evaluations, Complete Streets, intersection and corridor improvements, traffic signals, roundabouts, ramp terminals, utility coordination, and complex traffic management plans.

Relevant Experience

Town of Sherborn, Washington-Maple Intersection Roundabout, Sherborn, MA — Highway Design Lead

***Route 126 Reconstruction, Ashland, MA** — Project Manager

Town of Reading, Walkers Brook Drive Design, Reading, MA — Project Manager

Virginia DOT (VDOT), Limited Term Contract for On-Call Statewide Professional Traffic Engineering Consultant Services (TOD), Statewide, VA — Project Engineer

**Project completed prior to joining Kimley-Horn*



Kathy Keegan, P.E.
Prinicpal-in-Charge

Kathy has 29 years of civil engineering experience with 14 of those years working in Massachusetts and the past 5 years focused on serving a key Rhode Island client on a large infrastructure project. She excels at managing teams on on-call contracts and has delivered high quality deliverables on time and budget. Kathy's background is pavement management and design across many transportation sectors including medium- and large-hub airports, smaller general aviation facilities, Department of Defense installations including the U.S. Air Force and National Guard Bureau, state departments of transportation, municipalities, and automotive and intermodal sites for Class 1 freight rail clients. This diversity in experience and perspective has allowed for creative and collaborative solutions that integrate the needs of other disciplines such as planning and traffic. Kathy also is a member of Kimley-Horn's New Ventures Technology Solutions team and has helped develop many ITS and traffic-focused products including KITS, Kadence, Tredlite, and Traction.

Relevant Experience

City of Manchester, Pavement and Sidewalk Condition Assessment (FY20-500-24), Manchester, NH — Project Manager

Rhode Island Airport Corporation, Quonset State Airport Runway 16/34 Reconstruction, Contract No. 31740, North Kingstown, RI — Deputy Project

Professional Credentials

- Bachelor of Science, Civil Engineering Technology, Wentworth Institute of Technology, 2003
- Professional Engineer in New Hampshire, Massachusetts, Vermont, Connecticut, and Rhode Island

Professional Credentials

- Master of Engineering, Civil and Environmental Engineering, Carleton University, Ontario, 1998
- Bachelor of Engineering, Civil and Environmental Engineering, Carleton University, Ontario, 1994



Seth A. Denney, P.E.
Bridge Design Lead

Seth has 19 years of structural engineering experience, including design and production of plans and specifications. He has designed and managed projects across the U.S. that include roadway, railroad, and pedestrian bridges; culverts; retaining walls; and parking structures. These projects have been both hard bid and design-build. Seth's work has focused primarily on bridges, specifically prestressed. His experience also includes spliced bulb tee girder bridges and vessel collision applications.

Relevant Experience

City of Charlottesville, Belmont Bridge Replacement (aka 9th Street/Belmont Bridge Replacement and Complete Street Revitalization), Charlottesville, VA — Structure/Bridge Engineer

I-95 at Route 10 Interchange Improvements Phase 1, Chesterfield County, VA — Structure/Bridge Engineer Virginia DOT STARS, Route 288 Corridor Improvement Study, Richmond, VA — Project Engineer

Virginia DOT Mega Projects Office ESS, 495 NEXT Project (I-495 Northern Extension of Express Lanes to GW Parkway), Fairfax County, VA — Structure/Bridge Engineer



Lisa Juan, P.E.
Traffic Lead

Lisa brings 9 years of experience with transportation projects, including traffic engineering studies and transportation planning studies. Her experience includes multimodal master planning, safety studies, travel demand analysis, bicycle corridor studies, bicycle network plans, and geographic information systems (GIS) mapping. Lisa is a native of Boston, MA, and is passionate about providing a connected multimodal transportation system to provide accessibility to destinations.

Relevant Experience

Town of Weymouth, Jackson Square Transportation Plan, Weymouth, MA — Project Engineer

PD&E Study for Jupiter Bascule Bridge Replacement, SR 5/US 1/Federal Highway from CR A1A to Beach Road, FDOT District Four, West Palm Beach, FL — Project Analyst

Districtwide Traffic Operations Safety Studies, FDOT District Four, FL — Project Analyst

Town of Shrewsbury, Comprehensive Transportation and Multimodal Study, MA — Project Engineer

Professional Credentials

- Master of Civil Engineering, North Carolina State University, 2006
- Bachelor of Science, Civil Engineering, North Carolina State University, 2003
- Professional Engineer in NJ, VA, NC, SC, GA, MN, TX, TN, MI, OH

Professional Credentials

- Bachelor of Science, Civil Engineering, University of Massachusetts Lowell, 2013
- Master of Science, Transportation Engineering, University of Massachusetts Lowell, 2014
- Professional Engineer in Massachusetts



Jonathan Oliver, P.E.

Hydrology/Hydraulics Lead

Jonathan has 13 years of experience designing roadway, sidewalk, pedestrian, and bicycle infrastructures for localities across the East Coast. His resume includes experience on roundabouts, streetscapes, urban roadway reconstruction, sidewalks, roadway widening, stormwater utility improvements, multi-use paths, and arterial improvements for a bus rapid transit guideway, among other projects. He provides expertise in hydraulic and hydrologic engineering including the design of water quality best management practices (BMPs), traditional and innovative above- and below-ground storm detention, storm sewers, channels, culverts, and erosion control measures.

Relevant Experience

Virginia DOT L&D, Hopkins and Kingsland Roundabout, Richmond, VA — Project Manager

Virginia DOT, Staples Mill Amtrak Parking Lot Expansion, Henrico County, VA — Project Manager

Chesterfield County, Otterdale Road and Old Hundred Road Intersection Improvements, Midlothian, VA — Project Engineer

Chesterfield County, Route 288 Southbound to Route 360 Westbound Off-Ramp Improvement, Midlothian, VA — Project Engineer

Professional Credentials

- Master of Science, Civil Engineering, Georgia Institute of Technology, 2011
- Bachelor of Science, Civil Engineering, Clemson University, 2009
- Professional Engineer in Virginia
- Advanced Work Zone Traffic Control Training, VA



Vickie Karandrikas, CMP

Public Involvement Lead

With 28 years of experience in communications, Vickie specializes in public involvement, social media strategy, and graphic design services. As a Certified Meeting Professional, she is well-versed in planning, managing, and executing successful meetings and events of all sizes. As a creative and savvy communicator, Vickie can strategically utilize new technologies and pair them with messages and artwork for projects and events. She provides support for development and implementation of public involvement plans to maximize the engagement of local communities in new infrastructure project development, and supports opportunities to educate stakeholders, press, and public on project activities and milestones. She specializes in work for public sector and DOT clients.

Relevant Experience

Pennsylvania DOT (PennDOT), Transportation Authority Transit Development Plan (TDP) (E05155 WO#8), Luzerne County, PA — Public Involvement Specialist

Pennsylvania Department of Transportation (PennDOT), TSMO Summit (E05135 WO#7), Harrisburg, PA — Public Involvement Specialist

Professional Credentials

- Bachelor of Arts, Corporate Communications, Elizabethtown College, 2015
- Diploma, Graphic Design, Pennsylvania College of Art & Design, 1996
- Certified Meeting Professional
- IAP2 Public Participation



Teresa R. Gresham, P.E.
Environmental Lead

Teresa has 22 years of experience in environmental documentation, transportation engineering, and transportation planning. Her primary role is leading projects through the environmental documentation phase as an environmental lead or project manager. Teresa is skilled at managing multidisciplinary teams, balancing traditional and creative solutions, and incorporating community and staff input with data-driven findings. She has led projects ranging from new sidewalks and bridge replacements to urban road widening and new location projects. Teresa is a national resource within Kimley-Horn; in the past three years, she has led projects across the country with various municipalities, states, and federal agencies.

Relevant Experience

UDOT, Foothill Boulevard Improvements; 2300 East to Kensington Avenue, Salt Lake City, UT — Environmental Scientist

UDOT, SR-266 (4500 S); I-15 to 700 E, Murray, UT — Environmental Analyst

NCDOT U-6004, Lewisville-Clemmons Road Widening, Clemmons, NC — Project Manager

North Carolina DOT, U-5760 Big Mill Farm Road and Hopkins Road Improvement Project, Kernersville, NC — Project Manager

Professional Credentials

- Master of Science, Civil Engineering, University of Texas, Austin, 2001
- Bachelor of Science, Civil Engineering, Michigan Technological University, 2000
- Professional Engineer in North Carolina, South Carolina, Utah, Virginia, and Idaho



Christopher O. Clement, PhD, RPA
Environmental

Christopher has been a professional archaeologist for more than 25 years, and he has directed projects ranging from Phase I surveys to Phase III data recoveries. Dr. Clement is on the list of SHPO-approved archaeologists for both precontact and postcontact archaeology in New Hampshire and Maine. His professional background includes academic settings as faculty at several universities, and cultural resource management as an archaeologist and Principal Investigator across the US and in the Caribbean. Prior to joining SEARCH, Dr. Clement was a Principal Investigator with the South Carolina Institute of Archaeology and Anthropology's Cultural Resources Consulting Division for 15 years. Dr. Clement has directed projects for the US Forest Service, the US Navy, the US Army, the US Air Force, the South Carolina National Guard, the National Park Service, and many private clients, as well as for various international clients in the Caribbean. Dr. Clement has 30+ refereed publications or professional presentations to his credit, and since joining SEARCH he has authored or co-authored more than 100 technical reports.

Relevant Experience

Principal Investigator— Cultural Resource Survey in Support for the Utility Structure Replacement Located at 243 Daniel Webster Highway in Nashua, Hillsborough County, New Hampshire.

SEARCH

Professional Credentials

- Bachelor of Arts, Anthropology, Colorado College, 1982
- Master of Anthropology, University of Florida, 1988
- PhD, Anthropology, University of Florida, 1995
- Professional Archaeologist



Anant Panwalkar, P.E.
Geotechnical

Anant is a highly experienced geotechnical engineer with experience throughout New England, the Rocky Mountains, British Columbia, and India. He has an impressive track record with strong technical and business qualifications and more than 25 years of hands-on experience in field investigations, geotechnical analysis for shallow footings, pile foundations, drilled shaft foundations, mechanically stabilized earth (MSE) walls, ground improvement, and pavement design. Anant has managed the geotechnical portions of several highway projects throughout the New England region. He was responsible for the design of shallow foundations, pile foundations, and drilled shaft foundations, as well as assessment of existing foundations. He is familiar with various software programs, including Lpile, Group, Slide, Settle3D, and GINT, which were used during completion of these projects.

Relevant Experience

New Hampshire DOT/McFarland Johnson Inc., Manchester Airport Access Road, Manchester, New Hampshire — Project Engineer

Multiple Rail Trail Projects, City of Manchester, New Hampshire — Geotechnical Project Manager

Birchdale Road Bridge over Bela Brook, Concord, New Hampshire — Geotechnical Project Engineer



Joshua Burke
Survey/Right-of-Way

Relevant Experience

Joshua has been a Photogrammetrist with Eastern Topographics since 1995. He has 27 years of experience Photogrammetry Experience and 22 years of experience as a Photogrammetric Mapping Manager.

He is proficient in the use of all of Eastern Topographics' DSP softcopy workstations which are configured with KLT/Atlas software for digital collection of mapping. He is also experienced in aerotriangulation when required to expand ground control.

Joshua's specialty is solving difficult client ground control problems and creating digital orthophotos utilizing Eastern Topographics' DSP softcopy stations.

Haley & Aldrich

Professional Credentials

- Master of Science, Civil Engineering/Geotechnical Concentration, University of British Columbia
- Bachelor of Engineering, Civil Engineering, University of Bombay
- Professional Engineer in New Hampshire, Vermont, and Connecticut

Eastern Topographics

Professional Credentials

- Associates, Architectural Drafting, Brigham Young University Idaho, 1994
- Bachelor of Science, Geography, University of New Hampshire, 2010

6. Appendix – Previous Applicable Work Experience

City of Charlottesville, Belmont Bridge Replacement

Kimley-Horn provided professional design and engineering services to the City of Charlottesville for an urban design plan for replacement of both the City’s Belmont Bridge and all approaches. This project was funded by a combination of local, state, and federal sources, and administered by the City of Charlottesville. Kimley-Horn’s services include the elements of conceptual urban design planning, public meeting and stakeholder engagement, roadway design, bridge design, preparation of construction documents, right-of-way acquisition and coordination, and inspection/construction management services for a new bridge. The City approved Kimley-Horn’s design of the bridge after council-approved guidelines and input from the community during several public meetings as well as a week-long design charrette.

The design also calls for the creation of a pedestrian plaza to replace Old Avon Street, improved safety features at the intersection of 9th Street and Levy Avenue, a pedestrian underpass below 9th Street, and multiple new stairways that would be accessible from Old Avon and Water Streets.

Through our engineering expertise and extensive public outreach efforts, Kimley-Horn helped the City of Charlottesville find a solution to a series of perplexing challenges—a bridge in need of replacement, limited corridor rights-of-way, aspirations for a more complete street, and opportunities for enhanced placemaking—all in a heavily traveled corridor leading into the historic downtown. The process required a conflict resolution approach after a previous attempt by a different consultant to develop a concept plan for the replacement of the Belmont Bridge.

To achieve a successful plan, Kimley-Horn conducted a first phase that included an unprecedented level of public engagement and a strategic approach to corridor planning, which relied on comprehensive community vibrancy indicators to evaluate choices and focus on desired outcomes during development of this controversial project. Our approach allowed

community members to express themselves on an individual level, fostered group decision-making, and blended placemaking, traffic engineering, urban design, active transportation, parking, and transportation engineering.

Moving forward with a consensus-based design, Kimley-Horn is currently completing construction documents that integrate all of the project elements while addressing bridge design requirements, roadway design criteria, ADA access, drainage, and stormwater management improvements. Construction of the bridge replacement began in Summer 2020, and the final phase is expected to be completed in 2024.



I-95 at Route 10 Interchange Improvements Phase 1, Chesterfield County, VA

Kimley-Horn provided final design and construction documents for this SMART SCALE project. The Virginia DOT SMART SCALE program identifies important locally-administered projects to fund with state tax dollars. This is Phase I of a multiphase improvement plan for Exit 61. Phase I of the improvements totaled 5,500 linear feet (LF) and involved improvements to the interchange to address safety and congestion. Improvements consisted of widening the Route 10 westbound to I-95 northbound on ramp from one lane to two lanes, conversion of the I-95 northbound to Route 10 eastbound off-ramp from stop control to free flow, widening of Route 10 from four lanes to six lanes between I-95 and

Old Stage Road, and construction of a 1,000 LF acceleration lane on I-95 northbound. The original SMART SCALE concept envisioned widening and realignment of the Route 10 westbound to I-95 northbound on-ramp that would have required construction of a 60+-foot-deep fill over soft soils and extension of an existing box culvert. Kimley-Horn engineered a new design that widened Route 10 to the median to eliminate the long-term settlement potential and reduce earthwork costs. Kimley-Horn provided the following services on the project:

Planning

- Drafted and obtained approval and signatures on an IMR for I-95 Exit 61

Roadway Design

- Developed the horizontal alignment, vertical alignment, and Open Roads model for 2,700 LF of interstate ramp widening and realignment, 1,000 LF of interstate widening, and 1,800 LF of urban principal arterial widening from four lanes to eight lanes
- Submitted and obtained CTB approval for a LACC request
- Developed two design waivers documented on LD-448 for reduced right shoulder widths on I-95 and reduced lane widths

H&H Design, Erosion and Sediment Control, and Permanent Stormwater Management

- Conducted existing and proposed conditions H&H analysis for drainage elements affected by the plan
- Developed storm sewer and culvert design for both the interstate and urban arterial facilities
- Developed phased erosion and sediment control plans
- Eliminated on-site stormwater management by use of 1% rule and redirecting run-off away from inadequate outfalls
- Designed 300 LF of natural channel improvements consisting of log cross vanes, log rock, and roll constructed riffle

Structure and Bridge Design

- Designed a 150-LF and 8-foot-tall MSE retaining wall with lightweight cementitious fill

Traffic Engineering

- Designed signing (use of GuideSign), pavement markers, and marking plans including two overhead sign structures
- Developed a multiphase maintenance of traffic (MOT)/sequence of construction (SOC) plan to keep interchange ramps open
- Developed an innovative overhead sign design for I-95 that will allow the soon to be advertised I-95 Route 10 (Exit 61) to Route 288 (Exit 62) auxiliary lane project to overlay proposed sign versus fully replace newly constructed sign structure

Intelligent Transportation Systems (ITS)

- Developed ITS relocation plans for VDOT 96 strand fiber including cutover plan to minimize downtime of operations asset
- In-Plan Utility Design
- Developed water main relocation plans for 1,200 LF of 12-inch ductile iron water main including a 105 LF of jack and bore

National Environmental Policy Act (NEPA) and Water Quality Permitting

- Conducted wetland delineation and obtained US Army Corps of Engineers (USACE) Jurisdictional Determination (JD)
- Drafted and obtained VDOT and Federal Highway Administration (FHWA) approval on a Categorical Exclusion (CE)
- Obtained coverage under the USACE NW Permit 23 for 357 linear feet of stream and 0.02 acres of PFO wetlands

City of Manchester Asset Management Program, Manchester, NH

Kimley-Horn implemented an asset management program for both roadways and sidewalks, including condition assessments and master plan development. For roadways, the project included a

PCI update and pavement management program implementation for the City's 420-centerline-mile roadway network. The effort also included the development of a pavement management program/software tool (DRIVE™) to manage and assess pavement data and develop projects for the annual resurfacing program.



For sidewalks, Kimley-Horn performed a condition assessment and capital improvement plan recommendation for the City's 250-mile sidewalk network. This included a manual assessment to report general sidewalk conditions and potential ADA improvements. Additionally, Kimley-Horn performed an in-depth assessment of the City's downtown core area sidewalks and prepared a prioritization work plan that would help the City spend the State's Community Project Funding grant to perform the downtown sidewalk improvements.

City of Manchester DPW Staff Support, Manchester, NH

Kimley-Horn provided extensive staff augmentation support to the City of Manchester Department of Public Works, performing duties of a City civil engineer. At times, this support included staff augmentation at DPW offices nearly full-time. Kimley-Horn created automated spreadsheet tools to enhance DPW processes, trained DPW staff, communicated DPW policies on behalf of the City, coordinated with residents, coordinated with contractors, managed schedules, executed contracts and change orders, managed CIP budgets, completed grant applications, and led coordination meetings with multiple DPW departments, among other tasks. Currently, Kimley-Horn is managing the execution of the City's Roadway and Sidewalk programs, representing over \$5 million of City spending.



City of Richmond, HSIP Pedestrian Improvements at Signalized Intersections and CMAQ Signal Retiming, Richmond, VA

Kimley-Horn recently completed the fourth consecutive phase of traffic signal optimization support program for the City of Richmond Department of Public Works Transportation Engineering Division. The purpose of the HSIP Pedestrian Improvements at Signalized Intersections project is to improve safety for pedestrians as well as other street users within the City of Richmond by implementing guidance included within the City's Healthy Streets Manual from March 2017. By inventorying signalized intersections across the City and making safety improvement recommendations, Kimley-Horn is providing the City with data that will guide and prioritize intersection infrastructure development and pedestrian improvements. As part of this project and its sister CMAQ Signal Retiming project, Kimley-Horn developed and field implemented coordinated signal timings as an immediate betterment to the City's intersection operations. We worked hand-in-hand with City staff to develop and implement coordinated signal timings for over 400 signalized intersections throughout the city running on Econolite Cobalt and ASC/3 controllers. Optimized timing plans were developed using a Synchro Professional traffic network built on the City's GIS data files with the intent to minimize stops and delays, thereby lowering vehicle emissions and reducing fuel consumption. The project is federally funded through the HSIP and CMAQ programs.

Chesterfield County, Route 288 Southbound to Route 360 Westbound Off-Ramp Improvement, VA

Kimley-Horn provided preliminary, final design, and construction documents for this locally administered, federally funded SMART SCALE project. Roadway improvements totaled 4,750 LF and consisted of widening of Route 288 southbound to include an auxiliary lane and widening of the Route 288 SB to Route 360 WB ramp. The auxiliary lane was originally shown in the SMART SCALE application to be installed adjacent to the existing outside lane. However, it was determined during the conceptual design that installing the auxiliary lane at this location would result in the extension of an existing quad cell 12-foot by 10-foot box culvert, floodplain impacts, need for a 500-foot-long retaining wall adjacent to the floodplain, and ground improvements that would exceed the fixed SMART SCALE project budget by approximately \$3.5 million. Kimley-Horn developed a revised design that would include widening to the median of Route 288 that would ensure the project remained on budget without precluding the ability to widen Route 288 to six lanes. Construction is estimated to be completed in 2024.

Kimley-Horn provided the following services on the project:

Planning

- Conducted existing, no-build, and build traffic analysis using HCS and VISSIM traffic analysis and existing safety analysis
- Analyzed multiple off-ramp and deceleration lane designs in VISSIM to determine effectiveness of each design

Roadway Design

- Developed the horizontal alignment, vertical alignment, and cross sections for 1,200 LF of interchange ramp widening, 4,750 LF of freeway widening, and 800 LF of urban principal arterial widening; developed Open Roads model
- Submitted and obtained CTB approval for a

LACC request

- Developed an access management waiver for commercial entrance proximity to the end of the limited access
- H&H Design, Erosion and Sediment Control, and Post Construction Stormwater Management
- Conducted existing and proposed conditions H&H analysis for drainage elements. Developed storm sewer and culvert design for both the interstate and urban arterial.
- Developed phased erosion and sediment control plans for the improvements including sediment traps and basins
- Developed stormwater management design at each outfall to ensure the project remains under the 10-pound purchase of nutrient credits

Traffic Engineering

- Designed roadway signing, pavement markers and marking plans including three overhead sign structures using GuideSign
- Developed a multiphase MOT/SOC plan designed keep interchange ramps
- ITS Design
- Developed ITS design for the closed-circuit television (CCTV) camera installation within the interchange area
- Public Engagement
- Branded the multiyear suite of improvements that included a webpage at www.streamlinechesterfield.com
- Facilitated a formal public hearing with graphics of interchange improvements on aerial displays
- Developed the public hearing transcript and submitted and coordinated for design approval
- Supported multiple meetings with property owners to resolve complex access issues
- NEPA and Water Quality Permitting
- Conducted wetland delineation and obtained USACE JD
- Drafted and obtained VDOT and FHWA approval on a CE including air and noise analysis



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