



PLANNING AND DESIGN SERVICES FOR THE JUNIPER/TRINITIE TRAIL BRIDGE REPLACEMENT PROJECT



Statement of Qualifications

November 4, 2022

SEPI

A Division Of TranSystems

CHAPTER I LETTER OF INTEREST

November 4, 2022

David Bradley, Public Works Director

Town of Southern Shores

5375 N. Virginia Dare Trail, Southern Shores, NC 27949 | skane@southernshores-nc.gov

Re: Request for Qualifications (RFQ) - Planning and Design Services for the Juniper/Trinitie Trail Bridge Replacement Project

Dear Mr. David Bradley + Selection Committee Members,

SEPI Engineering & Construction, Inc. (SEPI), a Division of TranSystems, has assembled a highly qualified, multi-disciplined Team that possesses the knowledge and experience to perform all necessary engineering services for the Juniper/Trinitie Trail Bridge Replacement Project.

EXPRESSION OF INTEREST SEPI, a Division of TranSystems, is very pleased to submit our Statement of Qualifications to the Town of Southern Shores (Town) for the Planning and Design Services for the Bridge Replacement Project. TranSystems is ranked #9 on the ENR Top Design Firms for Structures. SEPI offers an exceptional team of engineers, planners, technicians, and support staff to deliver this project based upon our understanding and familiarity with the community having been selected for the Town of Southern Shores Pavement Condition Survey for Maintenance and Repair Treatment Recommendations.

DEPTH OF EXPERTISE SEPI offers a distinct Team of project focused experts that provide a comprehensive approach to project delivery. We have the capability to provide additional resources to meet future needs and the flexibility to adapt quickly. We enhanced our Team by adding Richard Catlin and Associates Inc. (**CATLIN**) for Geotechnical services.

PROJECT LEADERSHIP I will serve as Principal-in-Charge, allocating our depth of resources to appropriately staff this contract. Phil Harris PE, CPM, who is located in our Raleigh office, will serve as Project Manager and will be the primary point of contact for the Town during the course of the project. Phil has over 30 years of experience with both the natural and human environment, coastal engineering studies, planning, permitting and mitigation, and recently joined SEPI after his retirement from the NCDOT as the EAU Unit Head.

CONFLICT OF INTEREST The SEPI Team has no known conflict of interest with the Town for this contract. We are poised to deliver the requested services upon Notice-to-Proceed and maintain project schedules with the availability and depth of resources of our Team. Thank you for the opportunity to share our qualifications and we would be honored to collaborate with you.

SUMMATION SEPI acknowledges receipt of Addendum 1. Should you have any questions regarding our Team's submittal, please do not hesitate to contact me by phone at 252.394.4052 or via email at aroper@sepiinc.com. We look forward to this opportunity to continue our relationship with the Town of Southern Shores and ask for your strong consideration as you make your selection.

Sincerely,



Anthony Roper, PE, CPM | Vice President | Principal-in-Charge

**SEPI is a Team
of planners,
designers, engineers,
environmental
scientists, landscape
architects, and more.**

SEPI TEAM REGISTRATIONS

SEPI

- Secretary of State (#0325524)
- NC Engineers/Land Surveyors (#F-0453)
- NC Landscape Architects (#C-685)
- NCDOT Prequalified through 8/31/2023

CATLIN

- **SPSF Firm**
- Secretary of State (#0175745)
- NC Engineers/Land Surveyors (#C-0585)
- NCDOT Prequalification through 11/30/2022

PRIMARY POINT-OF-CONTACT

PHIL HARRIS PE, CPM



- ✓ Project Manager
- ✓ 30+ Years of Experience
- ✓ Former NCDOT EAU Unit Head

1 Glenwood Avenue, Suite 600
Raleigh, NC 27603

📞 919.637.8784
✉️ pharris@sepiinc.com

RELEVANT PROJECT EXPERIENCE

1



Anderson County, Minor Street Bridge Replacement, SC

TranSystems was part of the Bunnell Lammons Engineering (BLE/J. Bragg Consulting) team that was selected for a two-year On-Call contract with the Anderson CTC. Under this contract, TranSystems provided hydrology/hydraulic and bridge design services for all bridge related task orders, provided roadway engineering support as requested, and provided inspectors to facilitate any construction inspection needs.

The bridge consisted of a 30' cored slab structure founded on R/C caps and steel piles. Multiple utilities ran in line with the roadway under the bridge and had to be designed around, including a gas line, abandoned terracotta water line, and multiple water/sewer lines.

RELEVANCE

- ✓ Municipal Client
- ✓ Cored Slab Structure
- ✓ Structural
- ✓ Hydraulic/Erosion Control Design
- ✓ Roadway Design
- ✓ Construction Inspection
- ✓ Utility Coordination/Relocation

PROJECT DATES

2018- 2019

CONTACT

Jennifer Bragg, PE, Anderson County
803.513.3777
jbragg@jbraggconsulting.com



RELEVANT PROJECT EXPERIENCE

2



City of Raleigh, Shelley Road Bridge Replacement

SEPI was selected as part of a multi-disciplinary team to provide design services for the Shelley Road Bridge over Mine Creek in Raleigh, North Carolina. The bridge provides the only connectivity across Mine Creek and the Mine Creek Greenway for the Ridgeloach neighborhood. The site is in a FEMA regulated floodplain and is located downstream from an earthen dam with multiple insurable structures located downstream. As part of this project, SEPI staff is providing survey, SUE, roadway design, environmental investigation, hydraulic design (“No-Rise” certification), drainage design, landscape architecture, permitting, traffic control, public involvement, bid documents, and bid support. MI Engineering is providing structure design, F&H is providing geotechnical services, and Hinde is providing utility coordination and design.

RELEVANCE

- ✓ Municipal Client
- ✓ Residential Setting
- ✓ FEMA Regulated Floodplain
- ✓ Hydraulic/Erosion Control Design
- ✓ Roadway Design
- ✓ Survey/SUE
- ✓ Environmental/Permitting
- ✓ Landscape Architecture
- ✓ Bid Documents/Bid Support

PROJECT DATES

3/2021 - TBD

CONTACT

Cordis Thompson, City of Raleigh
919.996.4055
cordis.yates-thompson@raleighnc.gov



RELEVANT PROJECT EXPERIENCE

3



NCDOT Division 2, B-4926 Bridge Replacement #20 & #34 over Neuse River

SEPI was selected by the NCDOT to provide planning and design services for the replacement of two bridges carrying NC Hwy 55 over the Neuse River floodplain in Lenoir County, NC. This crossing of the Neuse River is very close to Kinston and is the only crossing of the Neuse 20 miles upstream of US 258 in Kinston. The selected alternative was a new location crossing just downstream of the existing crossing. In addition to replacing the main bridge over the Neuse, an overflow structure east of the main bridge is being replaced. The replacement structures are both multi-span concrete girder bridges 540' and 215' long respectively.

SEPI was responsible for Project Management, SEPA document, environmental investigations, road design, hydraulic design, erosion control, permitting, utility coordination, traffic management, pavement marking, signing, and public involvement. SEPI also managed the structural, geotechnical, and SUE subconsultants.

The river crossing has a drainage area of 2,800 square miles, an effective 100-year floodplain over 9,000 feet wide, is located within an expansive freshwater wetland network, and is designated as critical habitat for the Atlantic Sturgeon. The project area has been impacted multiple times by major flood events including Hurricane Floyd in 1999 and Hurricane Matthew in 2016. SEPI staff also successfully designed replacement structures for both the primary river crossing and one overflow bridge in accordance with NCDOT hydraulic design standards and in compliance with Federal Emergency Management Agency (FEMA) regulations. The hydraulic modeling demonstrated an improvement in the highway level of service, “No-Rise” in Base Flood Elevations (BFEs), and “No-Impact” to any of the multiple insurable structures identified within the floodplain.

SEPI evaluated two roadway alignments to avoid and minimize wetland and floodplain impacts. Through an extensive agency coordination process, a preferred alternative on new location was chosen by the agencies. The project required an individual permit (IP) from the US Army Corps of Engineers (USACE), water quality certification from North Carolina Department of Water Quality (NCDEQ), and the Atlantic Sturgeon coordination from NMFS.

RELEVANCE

- ✓ Two Bridge Replacements with Multi-Span Concrete Girder
- ✓ SEPA Document
- ✓ Environmental/Permitting
- ✓ Hydraulic/Erosion Control Design
- ✓ Utility Coordination
- ✓ Traffic Management/Pavement Markings/Signing
- ✓ Public Involvement

PROJECT DATES

2018 - 2022

CONTACT

Casey Whitley, PE, NCDOT,
252.791.0295, ckwhitley@ncdot.gov

RELEVANT PROJECT EXPERIENCE

4



NCDOT, Division 4, Express Design-Build Year 6

SEPI was the hydraulic design consultant for Vaughn & Melton the Design-Build team selected by Division 4 to replace nine bridges in Johnston and Wayne Counties, NC. Eight bridges were replaced in place with new precast concrete bridge structures, and one bridge was replaced with a reinforced concrete box culvert. SEPI was responsible for drainage and hydraulic design for eight of the nine project sites. All sites are within the Neuse River Basin and are subject to Statewide Buffer Rules. SEPI completed final hydraulic design, FEMA coordination, drainage design, and permit drawing preparation in accordance with the NCDOT Guidelines for Drainage Studies and Hydraulic Design and the requirements of the NCDOT Post-Construction Stormwater Program.

- **B-4562, Bridge #216, Johnston County.** Replace Bridge #216 on SR 2143 over Little Buffalo Creek.
- **B-5656, Bridge #133, Wayne County.** Replace Bridge #133 on SR 1127 over Yellow Marsh Branch.
- **B-5659, Bridge #432, Johnston County.** Replace Bridge #432 on SR 1738 over Cattail Creek.
- **B-5661, Bridge #243, Johnston County.** Replace Bridge #243 on SR 2123 over Little River.
- **B-5663, Bridge #46, Johnston County.** Replace Bridge #46 on SR 1124 over Mill Creek.
- **B-5664, Bridge #145, Johnston County.** Replace Bridge #145 on SR 1555 over Swift Creek.
- **B-5667, Bridge #231, Johnston County.** Replace Bridge #231 on SR 2159 over Little Buffalo Creek.
- **SF-950132, Bridge #132, Wayne County.** Replace Bridge #132 on SR 1127 over Edwards Branch. This project involved the replacement of an existing bridge with a reinforced concrete box culvert.

RELEVANCE

- ✓ Eight Bridges Replaced with New Precast Concrete Bridge Structures, and One Bridge Replaced with a Reinforced Concrete Box Culvert
- ✓ Hydraulic/Erosion Control Design
- ✓ FEMA Coordination
- ✓ Permit Drawing Preparation

PROJECT DATES

2017 - 2019

CONTACT

Paul Garrett, PE, Vaughn & Melton
919.977.9455
tpgarrett@vaughnmelton.com

RELEVANT PROJECT EXPERIENCE

5



NCDOT, Division 9, Express Design-Build Year 4

SEPI was responsible for the replacement of 10 aging bridges throughout NCDOT Highway Division 9 with concrete box culverts using the NCDOT Low-Impact Bridge Replacement process. All sites are located within FEMA regulated floodplains and were designed and approved in accordance with NCDOT guidelines for drainage studies and hydraulic design.

FEMA coordination and final project acceptance was completed in accordance with the policies and procedures documented in a Memorandum of Agreement (MOA) between NCDOT and the North Carolina Floodplain Mapping Program with designated authority from FEMA. SEPI was responsible for roadway design, hydraulic design, traffic design, environmental permitting, and project management services. Projects included:

- **Bridge #95, Davidson County.** Replace Bridge #95, SR 1838 (Lake Leonard Road) over Leonard Creek.
- **Bridge #149, Rowan County.** Replace Bridge #149, SR 2132 (Union Church Rd) over Church Creek Tributary 1A.
- **Bridge #315, Rowan County.** Replace Bridge #315, SR 1225 (Patterson Street) over Grants Creek.
- **Bridge #86, Davidson County.** Replace Bridge #86, SR 1158 (Wilson Road) over Unnamed Tributary to South Potts Creek with a new reinforced concrete box culvert.
- **Bridge #471, Davidson County.** Replace Bridge 471, SR 2416 (Old Highway 109) over West Branch Lick Creek with a new reinforced concrete box culvert.
- **Bridge #184, Rowan County.** Replace Bridge 184, SR 2333 (Cannon Street) over Unnamed Tributary to Second Creek with a new reinforced concrete box culvert.
- **Bridge #188, Rowan County.** Replace Bridge 188, SR 2564 (Shive Road) over Second Creek with a new reinforced concrete box culvert.
- **Bridge #236, Rowan County.** Replace Bridge 236, SR 1221 (Bostian Road) over Unnamed Tributary to Cold Water Creek with a new reinforced concrete box culvert.
- **Bridge #260, Rowan County.** Replace Bridge 260, SR 1535 (Weaver Road) over Little Creek with a new reinforced concrete box culvert.
- **Bridge #353, Rowan County.** Replace Bridge 353, SR 1349 (Turkey Road) over Unnamed Tributary to Cold Water Creek with a new reinforced concrete box culvert.

RELEVANCE

- ✓ 10 Bridge Replacements with Concrete Box Culverts
- ✓ Hydraulic Design/Erosion Control
- ✓ Roadway Design
- ✓ Environmental/Permitting
- ✓ Traffic Design

PROJECT DATES

2015 -2017

CONTACT

Eileen Fuchs, NCDOT
919.707.6613
eafuchs@ncdot.gov

RELEVANT PROJECT EXPERIENCE

6



NCDOT, Division 11, Express Design-Build Year 6

The project consisted of the replacement of five bridges in Watauga and Avery Counties. SEPI provided environmental permitting for five sites; traffic control and pavement marking plans for four sites; hydraulic modeling, drainage and erosion control for two sites; and roadway design for two sites.

SEPI was the hydraulic design consultant for a Design-Build team selected by Division 11 to replace five bridges in Avery and Watauga Counties, NC. SEPI was responsible for drainage and hydraulic design for two of the five project sites. SEPI completed final hydraulic design, FEMA coordination, drainage design, and permit drawing preparation in accordance with the NCDOT Guidelines for Drainage Studies and Hydraulic Design and the requirements of the NCDOT Post-Construction Stormwater Program.

- **Bridge #22, Watauga County.** Replace Bridge #22, SR 1209 (Rush Branch Road) over Beaver Dam Creek.
- **Bridge #36, Watauga County.** Replace Bridge #36, SR 1533 (Aho Road) over Middle Fork South Fork River.
- **Bridge #53, Watauga County.** Replace Bridge #53, SR 1508 (Elk Creek Road) over Elk Creek.
- **Bridge #56, Avery County.** Replace Bridge #58, SR 1321 (Curtis Creek Road) over Curtis Creek.
- **Bridge #83, Watauga County.** Replace Bridge #83, SR 1340 (Meat Camp Road) over North Fork New River.

RELEVANCE

- ✓ Replaced Five Bridges with Prestressed Concrete Cored Slab Replacement Structures
- ✓ Project Management
- ✓ Hydraulic/Erosion Control Design
- ✓ Roadway Design
- ✓ Environmental/Permitting
- ✓ Traffic Control/PMP
- ✓ FEMA Coordination
- ✓ Permit Drawing Preparation

PROJECT DATES

2017 - 2020

CONTACT

Hardy Willis, PE, Vaughn & Melton
828.253.2796
hlwillis@vaughnmelton.com

RELEVANT PROJECT EXPERIENCE

7



NCDOT, Division 8, Low Impact Bridge Replacements

SEPI was selected for the replacement of five aging bridges throughout NCDOT Highway Division 8 with structures of various types using the NCDOT Low-Impact Bridge Replacement process. SEPI was responsible for project management, roadway design, traffic management, hydraulic design, erosion control, utility design, utility coordination, and permitting. Each of these bridges was replaced in place while detouring traffic off-site.

All sites are located within FEMA regulated floodplains and were designed and approved in accordance with NCDOT guidelines for drainage studies and hydraulic design. FEMA coordination and final project acceptance were completed in accordance with the policies and procedures documented in a Memorandum of Agreement (MOA) between NCDOT and the North Carolina Floodplain Mapping Program with designated authority from FEMA.

Projects included:

- **B-5739, Bridge #170, Randolph County.** Replace Bridge #170, SR 2621 (Foushee Road) over Reed Creek.
- **B-5747, Bridge #157, Chatham County.** Replace Bridge #157, SR 2145 (R. Jordan Road) over Cedar Creek.
- **B-5758, Bridge #13, Moore County.** Replace Bridge #13, SR 1102 (Addor Road) over Aberdeen Creek.
- **B-5763, Bridge #129, Randolph County.** Replace Bridge #129, SR 2407 (Starmount Road) over Sandy Creek Tributary 3.
- **B-5760, Bridge #79, Richmond County.** Replace Bridge #79, SR 1424 (Jones Spring Church Road) over Naked Creek.

RELEVANCE

- ✓ Replaced Five Bridges
- ✓ Project Management
- ✓ Hydraulic/Erosion Control Design
- ✓ Traffic Management
- ✓ Utility Coordination/Design
- ✓ Permitting

PROJECT DATES

2016 - 2018

CONTACT

Hardy Willis, PE, Vaughn & Melton
828.253.2796
hlwillis@vaughnmelton.com

RELEVANT PROJECT EXPERIENCE

8



NCDOT, Division 14, Express Design-Build Bridges B-5554, B-5555

Project Overview

SEPI was responsible for the replacement of 2 aging bridges in NCDOT Highway Division 14 using the NCDOT Low-Impact Bridge Replacement process. Both sites were located on NC 215 in Transylvania County. In addition to the severe existing horizontal alignments, the US Forest Service owns all of the surrounding property and required several specialized practices. Both projects were designed and approved in accordance with NCDOT guidelines for drainage studies and hydraulic design. Prestressed Concrete Cored Slab replacement structures were selected, designed to result in no impact to insurable structures. SEPI was responsible for roadway design, hydraulic design, traffic design, environmental permitting, and project management services. Projects included:

- **B-5554, Bridge #73.** NCDOT Low Impact Bridge project to replace Bridge 73 on NC 215 over Beetree Fork.
- **B-5555, Bridge #46.** NCDOT Low Impact Bridge project to replace Bridge 46 on NC 215 over North Fork French Broad River.



RELEVANCE

- ✓ Two Bridge Replacements with Prestressed Concrete Cored Slab Replacement Structures
- ✓ Project Management
- ✓ Hydraulic/Erosion Control Design
- ✓ Roadway Design
- ✓ Environmental/Permitting
- ✓ Traffic Design

PROJECT DATES

2015- 2017

CONTACT

Russell Rockett, Mountain Creek Contractors, Inc.
828.241.2047
rockett@mtcreekinc.com

STRUCTURAL INDUSTRY LEADER

PROFESSIONAL REFERENCES

Client Name	Project Name	Contact Name, Phone Number, and Email
Anderson County	Minor Street Bridge Replacement, SC	Jennifer Bragg, PE, 803.513.3777, jbragg@jbraggconsulting.com
NCDOT, Division 2	B-4926 Bridge Replacement #20 & #34 over Neuse River	Casey Whitley, PE, 252.791.0295, ckwhitley@ncdot.gov
NCDOT, Division 2	B-4595/B-4596 Bridge Replacement #14 and #28, Pamlico	Michael Aman, PE, 252.439.2812, mcaman@ncdot.gov

INSURANCE REQUIREMENTS

SEPI meets the insurance requirements to deliver this project.

LEGAL JUDGMENTS

SEPI does not have any legal judgments against our firm within the last 5 years associated with project performance or professional liability.

REQUIRED STATEMENT

The SEPI Team acknowledges that the Town is the proprietor of all work product developed for or on behalf of the Town by the selected firm or person, regardless of location, type, and format of the work product – and acknowledges that all work product will be retained and submitted to the Town, or a specified agent or contract consultant of the Town at the Town’s direction, upon request, regardless of whether the work product is considered a “trade secret”.

CHAPTER 3 TEAM EXPERIENCE

ORGANIZATIONAL CHART

The SEPI Team provides a staff of highly qualified professionals consisting of individuals with the specialized experience required for this project. **We have sufficient available staff capacity required to provide timely and responsive service to the Town of Southern Shores.** In the event that our Team encounters personnel changes or any other changes of significance, the Town will be notified immediately.

TEAM KEY

- SEPI (Prime)
- CATLIN (Subconsultant) SPSF
- KEY INDIVIDUAL

LOCATION KEY

- C - CHARLESTON, SC
- R - RALEIGH, NC
- W - WILMINGTON, NC
- WA - WASHINGTON, NC



KEY TEAM MEMBER QUALIFICATIONS



ANTHONY ROPER, PE, CPM

Principal-in-Charge

Education: BS, Civil Engineering

Registrations: PE, NC (#021141); CPM

BIOGRAPHY

Anthony has over 31 years of experience in project administration, project management, and leadership in the public sector. As the Asset Management + Maintenance Director, he is responsible for overseeing SEPI's asset inventory and asset management services, maintenance operations, contract administration, and life-cycle cost analysis procedures for large-scale transportation projects across North Carolina.

Anthony currently manages a staff of more than 70 technicians and administrative staff. His expertise spans State Transportation Improvement Program (STIP) projects, bridge replacements, construction administration, Federally-funded projects, municipal projects, and disaster/emergency response efforts.

Prior to joining SEPI, Anthony served as the Deputy Secretary for the NCDOT. He managed and directed activities for the Office of Civil Rights, Division of Business Opportunity and Workforce Development, Division of Safety and Risk Management, Facilities Management Division, Support Services Division, and the Historically Black College and University Program.

RELEVANT PROJECTS

- **Town of Southern Shores, Pavement Condition Survey.** Principal
- **NCDOT, Division 1, CEI On Call Advance Tech (Bridge Maintenance Support).** Principal
- **NCDOT, Division 9, Bridge Maintenance Support.** Principal
- **NCDOT, Statewide Asset Management Pipe Inventory + GIS.** Principal



PHIL HARRIS, PE, CPM

Project Manager

Education: Master, Coastal Environmental; BS, Civil Engineering

Registrations: PE, NC (#021086); CPM

BIOGRAPHY

Phil has over 30 years of environmental planning, mitigation, permitting, and preservation of wetlands and streams. Phil has completed numerous reviews of Nationwide permit applications/ Individual Permit applications, NC Division of Water Resources Buffer and Variance applications including extensive coordination with agency representatives.

Phil also has experience in public involvement and is proficient in state and federal policies and procedures. Phil's other expertise include developing scopes and cost estimates and proposal development. He has also worked previously as a coastal engineering where he focused on inlet dynamics and near shore beach mechanics.

Phil is presently focused on scope and fee for existing environmental project work, internal QA/QC and developing proposals for potential clients. He is involved with NCDOT Ferry Division project work and his assistance extends across all of the eastern NCDOT Division Offices. Phil often is coordinating with existing clients and recruiting new talent to the company.

RELEVANT PROJECTS

- **NCDOT, Division 2, B-4926 Bridge Replacement Project, Permitting & QA/QC.** Environmental Practice Lead
- **NCDOT, Division 11, Daniel Boone Parkway, Feasibility Study.** Environmental Practice Lead
- **NCDOT, Division 1, Bonner Bridge, Permitting, Mitigation, & QA/QC.** Former NCDOT Environmental Analysis Unit Head

KEY TEAM MEMBER QUALIFICATIONS



DAVIDIAN BYRD

QA/QC Manager

Education: AAS, Architectural Technology

BIOGRAPHY

Davidian has more than 43 years of work experience in both the public and private sectors, including design and management of preconstruction highway projects and utility and relocation coordination. He has extensive coordination with internal and external clients, including the Federal Highway Administration, Triangle Transit Authority, local municipalities, counties, units within NCDOT, private engineering firms, and NC citizens. Prior to joining SEPI, Davidian worked for 37 years with the NCDOT. At NCDOT he was a Transportation Engineering Supervisor where he supervised a design squad to coordinate contract preparation and execution with private engineering firms along with plan review and technical assistance to ensure quality control while meeting project schedules for consultant and in-house roadway design projects including bridge replacements. He also has extensive experience in utility coordination serving as a liaison to private power, telephone, telecom, and gas companies to evaluate impacts to existing facilities and to identify relocation options.

RELEVANT PROJECTS

- **NCDOT, Division 2, B-4926 Bridge Replacement #20 & #34 over Neuse River.** QA/QC Manager
- **NCDOT, Division 8, Low Impact Bridge Replacements.** QA/QC Manager
- **NCDOT, Division 11, Express Design-Build Year 6.** QA/QC Manager



ANDY HOWELL, PLS

**Hydrologic & Hydraulic Design/
Erosion Control Plan Lead**

Education: BS, Environmental Engineering

Registrations: PE, NC (#035621), CFM (#NC-09-0355)

BIOGRAPHY

Andy is a Professional Engineer and Certified Floodplain Manager in North Carolina with over 18 years of specialized experience in hydraulic and water resources engineering.

Specialized experience includes hydrology/hydraulic analysis and design of major hydraulic roadway structures and urban and rural roadway facilities; sedimentation and erosion control design and permitting; flood modeling and FEMA compliance coordination for floodplain development projects; and stormwater design and permitting of industrial facilities under the NPDES program.

Additionally, Andy has extensive experience in planning level hydraulic design. His recent experience includes reviewing preliminary alignments for hydraulic controlled grades; developing alternatives analysis and structure recommendations for major stream crossings; identifying potential project impacts and required mitigation measures; and production of various hydraulic planning reports.

RELEVANT PROJECTS

- **NCDOT, Division 3, Bridge Replacement of 20 & 34, NC 55, Lenoir County.** Senior Hydraulics Engineer
- **NCDOT, Division 4B Express Design-Build Year 6, Johnston/Wayne Counties.** Senior Hydraulics Engineer
- **NCDOT, Division 8, Low Impact Bridge Replacement Group, Randolph, Chatham, Moore & Richmond Counties.** Senior Hydraulics Engineer

KEY TEAM MEMBER QUALIFICATIONS



FABIEN LUKEBA, PLS

Location & Surveys Lead

Education: AS, Civil Engineering; AS, Surveying Technology

Registrations: PLS, NC (#L-5448)

BIOGRAPHY

Fabien is an experienced Manager with over 24 years of surveying experience having managed design and construction projects for municipalities, NCDOT, federal, and private sector clients. He has worked for the past 21 years in collaboration with the NCDOT on various projects.

Fabien's experience includes MicroStation/Geopak, High Definition Surveying, 3D Laser Scanning, Land Development, Construction Engineering, Transportation Engineering, and Highways. Fabien is a strong program and project management professional in the Geomatics field. He has stayed on the front of new technologies, from the latest surveying equipment and software, 3D terrestrial scanners, Mobile laser scanners, to the latest software in Laser Scanning.

RELEVANT PROJECTS

- **City of Raleigh, Shelley Ridge Road Bridge Replacement.** Survey Manager
- **NCDOT, 97-0091 Bridge #91 over Tributary of Town Creek on SR 1339.** Survey Manager
- **NCDOT, 97-0092 for Bridge #92 over Town Swamp on SR 1339.** Survey Manager
- **NCDOT, 2021-2022 Location & Survey LSC On-Call, Statewide.** Survey Manager



DANNY GARDNER, PE

Roadway Design Lead/ Construction Contract/ Estimates Lead

Education: AAS, Civil Engineering

Registrations: PE, NC (#033871)

BIOGRAPHY

Danny has over 38 years of experience as a transportation engineer for a wide variety of interstate, roadway, bridge, and civil engineering projects. His skills encompass highway design, transportation plan development, noise analysis, intersection/roundabout design, and bicycle/pedestrian neighborhood connectivity improvement. Prior to joining SEPI, he worked with the NCDOT for 29 years.

Danny is experienced in producing bid advertisements, run pre-bid meetings, issue addenda, and conduct bid openings for the client. After the bids are received, Danny reviews the bids, prepares the certified bid tabulations, and provides a recommendation of award to the Town.

RELEVANT PROJECTS

- **NCDOT, Division 3, Bridge Replacement of 20 & 34, NC 55, Lenoir County.** Roadway Engineer
- **NCDOT, Division 8, Low Impact Bridge Replacements, Randolph and Moore County.** Roadway Engineer
- **NCDOT, Division 9B, Express Design-Build Year 4, Rowan and Davidson County.** Roadway Engineer
- **NCDOT, Division 14, Express Design-Build Bridges B-5554, B-5555, Transylvania County.** Roadway Engineer

KEY TEAM MEMBER QUALIFICATIONS



MATT REKERS, PE

Structures Lead

Education: MS, Civil Engineering; BS, Civil & Environmental Engineering

Registrations: PE, NC (#050087)

BIOGRAPHY

Matt has eight years of structural and civil engineering design experience in bridge design and design-build projects. His experience includes finite element modeling, staged construction analysis, including construction stage and final stage analysis, superstructure design including: curved steel plate girder, bolted splice design, cross frame / diaphragm design, prestressed concrete design, elastomeric bearing design and deck design, steel plate girder design, AASHTO girder design, semi integral abutment design, substructure design including: jointless philosophy abutment design, multi-column and wall piers, pile and drilled shaft design and spread footing design, and bridge load ratings under the LRFR and LFR methodologies.

RELEVANT PROJECTS

- **Anderson County, Minor Street Bridge Replacement, SC.** Structural Engineer
- **SCDOT, SC 34 Bridge Replacements over Wilson Creek, Greenwood County.** Structural Engineer
- **SCDOT, I-85 Rehabilitation/Improvements to MM77 to MM84, Spartanburg.** Structural Engineer
- **Greenwood County, Dillard Road Bridge Replacement, SC.** Structural Engineer
- **VDOT, I-64 over Route 156 Bridge Replacement Project, Richmond.** Bridge Designer



ANNA REUSCHE, PWS

Environmental/Permitting

Education: BS, Natural Resources Management, Water Resources Management

Registrations: PWS, NC (#2242)

BIOGRAPHY

Anna has over 17 years of environmental and technical experience. She has considerable knowledge of scientific principles related to the preservation, restoration, and mitigation of wetlands and streams as well as the function and importance of these systems in the ecosystem.

She is experienced in the completion of wetland and stream delineation, stream identification, 404/401 Nationwide permit applications/Individual Permit applications, NC Division of Water Resources Buffer and Variance applications, vegetative monitoring, endangered species surveys, and critical habitat assessments.

In addition, she has experience with AutoCAD, MicroStation, GPS data collection, and GIS analysis mapping.

RELEVANT PROJECTS

- **City of Raleigh, Shelley Ridge Road Bridge Replacement.** Senior Environmental Project Manager
- **NCDOT, Division 2, Bridge Replacement #14.** Senior Environmental Project Manager
- **NCDOT, Division 2, Bridge Replacement #28.** Senior Environmental Project Manager
- **NCDOT, Division 2, Bridge Replacement #66.** Senior Environmental Project Manager

KEY TEAM MEMBER QUALIFICATIONS



RAJIT RAMKUMAR, PE, LEED AP

Preparation of Planning Document Lead

Education: Bachelor of Technology Civil Engineering; Master of Civil Engineering

Registrations: PE, NC (#036810); LEED AP (#10454341)

BIOGRAPHY

Rajit has 18 years of transportation planning and engineering experience and has managed more than 100 projects of varying complexity for clients statewide. He is proficient in state and federal policies and procedures and has completed numerous projects involving Complete Streets, multimodal design, streetscapes, and bicycle and pedestrian improvements utilizing AASHTO and NACTO guidelines.

Additionally, Rajit's expertise spans greenway facilities, feasibility studies, cost estimates, public engagement, SEPA/NEPA, urban planning, environmental screening, permitting, parking, traffic noise analysis, and grant assistance. A proven project engineer, he leads multi-disciplinary teams with a focus on planning, collaboration, and engaging project stakeholders effectively.

RELEVANT PROJECTS

- **City of Raleigh, Shelley Ridge Road Bridge Replacement.** Planning Lead
- **NCDOT, Division 3, Bridge Replacement of 20 & 34, NC 55, Lenoir County.** Planning Lead
- **NCDOT, Division 8, Low Impact Bridge Replacements, Randolph and Moore County.** Planning Lead
- **NCDOT, Division 14, Express Design-Build Bridges B-5554, B-5555, Transylvania County.** Planning Lead



LAUREN DICKSON, PLA, ASLA

Streetscape/Landscape Lead

Education: Bachelor of Landscape Architecture

Registrations: PLA, NC (#1816)

BIOGRAPHY

Lauren has over 14 years of landscape architecture experience. She recently joined SEPI, bringing with her experience on various types of projects including park master plans, site analysis, greenways, streetscapes, libraries, and various public facilities. Her experience includes taking a leading role in site analysis, design, preparation of master plans, construction documents, and construction administration. She has a passion for public spaces and promoting environmental awareness and stewardship. She works closely with municipalities to gain valuable perspective and insight to create meaningful designs that are rooted in the communities within which she works.

RELEVANT PROJECTS

- **City of Raleigh, Lake Lynn Greenway Feasibility Study/Trail Design.** Landscape Architecture
- **City of Raleigh, Raleigh Streetscapes - Hillsborough/Morgan Street Round About.** Landscape Architecture
- **City of Raleigh, Raleigh Streetscapes - Wilmington Street.** Landscape Architecture
- **City of Raleigh, Raleigh Streetscapes – Fayetteville Road.** Landscape Architecture
- **City of Greenville, West Fifth Street Gateway.** Landscape Architecture

KEY TEAM MEMBER QUALIFICATIONS



AL EDGERTON

Utility Coordination Lead

Education: BA, Geology

BIOGRAPHY

Al has 31 years of experience managing the funding and construction of bridges; approving plans and proposals; coordinating the planning, design, and construction of Division projects; and supervising contractors and inspectors.

As a Project Manager in the NCDOT Division 3 Office, responsibilities included the management of the TIP, Local Administered, Safety funded, Contingency funded and Enhancement funded projects. The responsibilities in the management of the local administered projects were as follows: assist with the creation and maintenance of the reimbursable agreements; track and address questions concerning funding; process monthly invoices; assist in determining project feasibility; submit and assist in the review/approval of plans; coordinate right-of-way acquisition issues with Division 3 right-of-way representatives; assist in the advertisement and letting of projects; provide contract administration oversight.

RELEVANT PROJECTS

- **NCDOT, Division 3.** Division Bridge Program Manager responsibilities included replacement of low impact bridges and the management of funding, design, and construction of approximately 38 bridges. Replacement prioritization included the maintenance of the bridge maintenance improvement plan (BMIP) in AMS. Pre-construction responsibilities included the selection of design firms, field scoping meetings, review and approval of man-day estimates, review and approval of plans and proposals, processing invoices and monitoring project milestones. Construction responsibilities included those as a Resident Engineer.
***While employed at NCDOT Division 3*



BEN LACKEY, JR., PE

Geotechnical Lead

Education: BS, Civil Engineering

Registrations: PE, NC (#011292)

BIOGRAPHY

Ben joined CATLIN upon his retirement from the USACE Wilmington District Office. He has 40+ years of experience working on civil works projects including design of embankments, retaining walls, pavements, excavations, settlement, and deep and shallow structure foundations.

His experience includes layout of subsurface investigation, analysis of the soil test results, design of retaining/sheetpile walls, shallow foundations for buildings, roadway design/recommendations, preparation of the geotechnical design report, and inspection of the construction of the geotechnical aspects of the project. Additionally, he inspects the construction of structure foundations and other geotechnical aspects of civil engineering.

RELEVANT PROJECTS

- **NCDOT, Division 2, NC 211 from West of NC 906 to East of NC 87 Bridge, Southport/Brunswick County.** Geotechnical Engineer for Investigation of a Single Span Bridge
- **NCDOT, Division 2, Replace Bridge #25 over Tyson Marsh on SR1149, Greene County.** Geotechnical Engineer
- **NCDOT, Division 1, R-5809, Three Sisters Bridge Embankment Investigation, Bertie County.** Geotechnical Engineer
- **NCDOT, Division 4, Bridge #75 on NC 42 over the Neuse River, Clayton NC, Johnston County.** Geotechnical Engineer

KEY TEAM MEMBERS CURRENT WORKLOAD & CAPACITY

All key individuals on the SEPI Team are 100% committed to fill their role in the Juniper/Trinitie Trail Bridge Replacement Project, regardless of the percentages that may be listed below.

NAME	ACTIVE PROJECTS	PERCENTAGE AVAILABILITY
Anthony Roper, PE, CPM Principal-in-Charge	Town of Southern Shores, Pavement Condition Study; NCDOT, Statewide Asset Management Pipe Inventory; NCDOT, Manns Harbor Water Tower Replacement	40%
Phil Harris, PE, CPM Project Manager	NCDOT, R-5915-Daniel Boone Parkway, Watauga County; Nine-Foot Channel, Dare County	85%
Andy Howell, PE, CFM Hydrologic & Hydraulic Design/Erosion Control	Conservation Commission Bridge Replacement; NCDOT R-2561CA, R-5858, U-4709, U-4726HO, U-5757, U-5770, U-5875, U-3400, B-4926 R, B-4595, B-4596	60%
Fabien Lukeba, PLS Location & Surveys	NCSU Centennial Plaza, NCDOT I-95, South Park Heritage Walk and Strollway	80%
Danny Gardner, PE Roadway Design// Preparation of Construction Contract Proposal and Estimates	COR Shelley Road Bridge Replacement, B-4926 Bridge Replacement of 20 & 34 on NC 55, Replace Pamlico Bridge 14, Replace Pamlico Bridge NC, NCDOT U-5875, R-5858, U-4709, R-5766, U-3400, U-5757	55%
Matt Rekers, PE Structures	NCDOT I-95 Bridge Replacements over Lake Marion Design-Build Support; SCDOT Load Rating and Evaluation Engineering Services; SCDOT Bridge Asset Management; SCDOT Statewide Scour Assessment; SCDOT Statewide Bridge Inspection and Evaluation Engineering Services	65%
Anna Reusche, PWS Environmental Permitting	Downing Creek Lift Station Replacement, NCDOT B-4926 Bridge Replacement of 20 & 34 on NC 55, SCDOT JD and Permitting, SCDOT S-23 (Bridge Replacement), Morgan Creek Sanitary Sewer Replacement, Replace Pamlico 28 on SR1005 Cedar Gut, Replace Bridge 66 over SR1232 (Cicero Riggs Road)	60%
Rajit Ramkumar, PE, LEED AP Preparation of Planning Document Lead	City of Raleigh, Shelley Ridge Road Bridge Replacement; NCDOT, Manns Harbor Water Tower Replacement; Town of Garner On-Call; City of Raleigh MSA	35%
Lauren Dickson, PLA, ASLA Streetscape/Landscape	Paseo/College Road Mixed Use, Turner Creek ES Master Plan, Oakview ES Master Plan, Michael Jordan Clinic Greenfield Site, Highway 70 Mixed Use Development	65%
Al Edgerton Utility Coordination	NCDOT, U-5729 US 421 Carolina, Beach Road Improvements; NCDOT, U-5734 Front Street Widening; NCDOT, U-5741, NC 24 Access Management Improvements; New Hanover County, Middle Sound Loop Road and North College Road	50%
Ben Lackey Jr, PE Geotechnical	MCB Camp Lejeune Task Force Florence Package 4 (3 Bridges); Monck Radio Tower Foundation; NCSA Port of Morehead City Gate Design; UNCW Resurfacing	65%

CHAPTER 4 TECHNICAL APPROACH



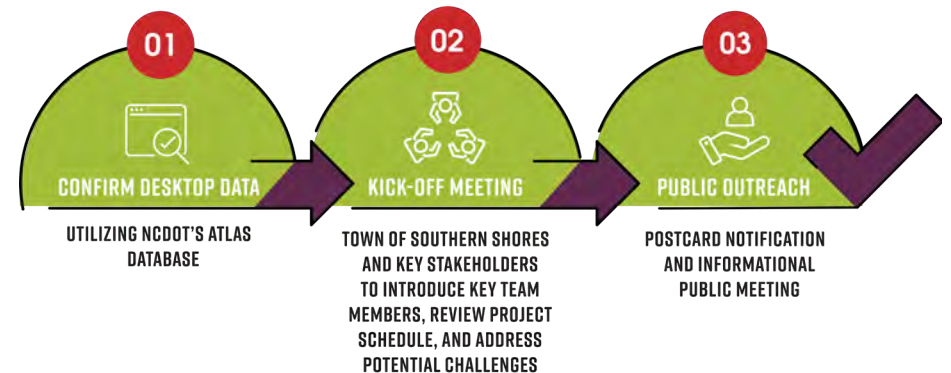
PROJECT UNDERSTANDING & APPROACH

The SEPI Team approach in delivering this project will be to provide a quality product, at a competitive cost, with internal and external partners feeling heard, while critically focused on meeting project deadlines and the overall project schedule. We will lean on the many years of experience within the Team in planning, design, and permitting aspects. Having been involved with other projects in the Southern Shores area in the past, this will serve beneficial in coordination efforts and anticipating next steps. The Team will establish a consistent and regular communication plan with the Town of Southern Shores and will also establish a detailed outreach plan for the public including a managed and maintained project website. We will have a robust customer service plan and will be very responsive to all questions, comments, and concerns. Quality Assurance and Quality Control will also be a top priority and minimizing revisions and edits will be the focus – we will strive to provide things correctly the first time. It will be the intent of the Team to deliver a completed Categorical Exclusion within a 1-year period from NTP issuance.

During project initiation, we will confirm all the available desktop data for the project area and utilize NCDOT's ATLAS database to identify both natural and human resources within the project area. We will have a kickoff meeting where we engage the Town of Southern Shores and other key stakeholders. In this meeting, we will introduce key members of our Team and review our project schedule. As part of the schedule, we will have identified key deliverables, confirm responsibilities, and identify potential challenges that should be addressed.

We will also begin the public outreach process by engaging the public through a postcard notification and an informational public meeting. The SEPI Team is proposing an early notification to all property owners within ½ mile of the site early in the development phase so that the Town may control the public narrative. We will develop a mailing list for the project using the project study area plus a ½-mile buffer. Property owner residents and non-resident names and addresses will be derived from Dare County tax parcel data (GIS). It is estimated this list will contain no more than 300 separate names/addresses.

The SEPI Team will develop a 5.5" x 8.5" postcard to notify property owners of the project, logistical information for a forthcoming public meeting, and provide a SEPI email address to send responses. A draft will be submitted to the Town of Southern Shores for review before reproduction. The postcard will be printed, stamped, and mailed to appropriate property owners. Following anticipated receipt of these postcards by the public, the SEPI Team will coordinate with the Town in holding an informational public meeting. During this same time, we will also design and maintain a project website that will include project updates.



THREATENED & ENDANGERED SPECIES INVESTIGATIONS



We will initiate the Threatened & Endangered species investigations. Our wholistic approach is detailed as follows:

Based on a review of the US Fish and Wildlife Service database, “bald eagle (*Haliaeetus leucocephalus*), red cockaded woodpecker (*Picoides borealis*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), eastern black rail (*Laterallus jamaicensis*), northern long-eared bat (*Myotis septentrionalis*), west Indian manatee (*Trichechus manatus*), green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), kemp’s ridley sea turtle (*Lepidochelys kempii*) leatherback sea turtle (*Dermochelys coriacea*), Loggerhead sea turtle (*Caretta caretta*), seabeach amaranth (*Amaranthus pumilus*) have known habitat in the project area.

SEPI’s unique Team of biological survey experts, led by our in-house aquatic biologist Chris Sheats, PWS (Permit # 19-ES00558), will oversee all surveys and documentation of any critical habitat assessments, microbenthic surveys, and specific species surveys. Concurrently, we begin the wetland and stream delineations. An explanation and the process steps are as follows: SEPI’s Team of licensed Professional Wetland Scientists (PWS), led by Ms. Anna Reusche, PWS, will traverse the project area, including all access routes, on foot to conduct a field evaluation that will include stream and wetland delineations, and an inventory of natural communities.

Identified streams and linear drainages will be evaluated using the current approved North Carolina Division of Environmental Quality (NCDEQ) and US Army Corps of Engineers (USACE) methodologies. Concurrent with the stream delineation, SEPI will assess areas within the project boundaries for the presence of wetlands. Areas will be evaluated using the regional supplement to the USACE’s 1987 Wetland Delineation Manual. To assess the quality of each jurisdictional feature, wetlands will be classified and rated using the NC Wetland Assessment Method (NCWAM) classification system and streams will be assessed and rated using the NC Stream Assessment Method (NCSAM).

SURVEY SITE MAP OF FINDINGS



Working closely with SEPI’s Geomatics Team, SEPI will prepare a detailed site map of our findings. Utilizing data collected during field reconnaissance, SEPI will prepare a Draft Preliminary Jurisdictional Determination (PJD) package and buffer determination for submittal to the appropriate federal, state and local agency stakeholders including the US Army Corps of Engineers and the NC Division of Environmental Quality. The package will include all required forms, mapping, and site photos.

Through our staff’s extensive experience with this process, SEPI’s Team is adept at completing tasks concurrently and expediting delivery. Our Team will be examining mitigation options for any unavoidable impacts and will coordinate this through the appropriate environmental resource agencies.

GEOTECHNICAL EXPERTISE IN BRIDGE PROJECTS



Geotechnical | The SEPI Team, which includes subconsultant CATLIN, will impart our geotechnical expertise to establish, refine, and conclude the subsurface condition such that a stable and long-lasting foundation will be established. The Team will use the previous analysis and couple that with a field-testing program prior to construction to determine and confirm the subsurface conditions. This will include compaction testing and subgrade proofrolling.

During construction, all applicable testing, inspections, and evaluations will be performed as referenced in the North Carolina State Building Code and indicated in the NCDOT Standard Specifications for Roads and Structures. In confirming the seismic site classification, it may be necessary to bore a 100-foot deep SPT or CPT and/or soil shear wave velocity testing.

CATLIN’s In-House Geotechnical Laboratory supports engineering services for the evaluation of soil integrity. Their laboratory is located in Wilmington, NC and is certified by the NCDOT.

LABORATORY CERTIFICATIONS

- Certified Soil Laboratory - AASHTO, USACE, NCDOT
- NCDEQ Division of Water Resources Field Parameters Certification

ENGINEERING SOLUTIONS FOR ROADWAY DESIGN



Utilities | Utilities can create major impacts to schedule and cost, so including them soon after project award is vital to the success of this assignment. Utilities in the project area are all underground and appears that all utilities will need to be relocated. To accomplish this, it takes constant communication and partnership. These key tools will continue through final resolution, package collections, and construction oversight. SEPI will work to identify utility owners in the area based on NC811 inquiry and field observations. The following utilities have been detected:

- Dare County Water Department – Potable Water
- Dominion Energy – Electric
- Charter/Spectrum – Telecommunications

UTILITY COORDINATION & RELOCATION



Roadway Design | We will use the NCDOT Complete Streets Guidelines and Context Sensitive Solution (CSS) process to identify solutions and achieve buy-in throughout the project development and design. The design Team members have a thorough understanding of the best practices to tackle any issues that may arise during the final design phase, including ADA accessibility standards. The Team's design approach will be consistent with the recently completed concepts and other ongoing Town plans that incorporate future transportation needs for the area.

The plans emphasize that while striving to enhance the quality of life for residents of the area, a balance must be maintained between fostering growth and development and preserving the natural and cultural resources of the Town, while also respecting the rights of individuals, including private property rights.

The following general approach applies to the advertised Bridge Replacement Project. Design project development will begin by reviewing and coordinating as noted above to identify design concerns and commitments requiring final plan incorporation. We will submit design assumptions in accordance with Town/NCDOT criteria for approval before performing any design. Surveys and subsurface utility engineering (SUE) will be initiated. We will assemble electronic data files of provided survey data and develop base plan sheets.

Preliminary plans (25%) will be prepared and submitted for review. Before 25% plans, the controlling structure grades will be modeled, analyzed, and approved for hydraulic opening size and clearances. Hydraulic analysis is required to determine the required conveyance area necessary to provide a No-Rise and no adverse impact certifications.

Careful coordination between hydraulic design, roadway vertical profile and structure type establishment is crucial to project success. A Bridge Survey Report (BSR) will be submitted for approval by the Town and NCDOT. After approval of the 25% plans and hydraulic grade control analysis, the roadway hydraulic design and preliminary right-of-way plans (65%) will be designed. Utility coordination, geotechnical investigation and recommendations, and the FEMA FIS CLOMR design and application process (if required) will be initiated.

Structure design will be initiated once geotechnical structural foundation and roadway design recommendations are received, and the roadway drainage system and design will be completed. Stormwater management and erosion/sediment control design will follow roadway hydraulic design completion. Public and private utility relocation design will also occur between 25% and 65% plan development.

Before finalizing the pre-right-of-way 65% plans, preliminary traffic control design will be completed to identify use of on-site traffic control staging or of-site detour to assess impact to right-of-way. All services/design impacting right-of-way will be finalized and approved before completing 75% right-of-way plans. Final right-of-way plats will be prepared for recordation of right-of-way. MicroStation and GEOPAK software will be used to facilitate plan preparation and maintain files consistency with NCDOT guidelines. MicroStation files will be converted to AutoCAD files for the Town's use. The 2018 Standard Specifications for Roads and Structures and the Standard Special Provisions issued by the Division of Highways will be used for materials and construction methods on all work.



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innovation, and
safety in performing
our services

Structure Design | The structural design will be in accordance with the AASHTO LRFD Bridge Design Specifications, the NCDOT Structure Design Manual and policy memos. The SEPI Team will incorporate all previous bridge and foundation analysis and confirm original findings and recommendations.

As regards to structure type, we will move forward with design of a precast prestressed cored slab unit superstructure. The SEPI Team understands that construction cost is a primary concern for the Town and is prepared to develop a cost effective, context sensitive solution. The anticipated first step would be to submit preliminary structure plans indicating the type, size, and location of the proposed structure to the Town of Southern Shores and NCDOT for review. Upon receiving approval of the preliminary plans, we will begin the geotechnical investigation while final structure design is in progress.

The geotechnical and structural discipline leaders are poised to coordinate and create an economical substructure for the bridge. The structure foundation recommendations will be submitted for approval prior to completion of the structure plans, and final structure plans will also be submitted upon completion to the Town for review. The SEPI Team has the experience and qualifications to deliver a quality bridge design to the Town within schedule and budgetary requirements.

Hydraulic Design | Our Team of engineers has extensive experience in developing bridge replacement plans in accordance with NCDOT hydraulic design guidelines and have completed projects of similar scope and scale over the past decade in multiple CAMA counties. We are well-versed in working within FEMA regulated floodplains and have demonstrated success with No-Rise Flood Studies reviewed at the state and local level. Our track record has earned us a place as a trusted partner in the transportation and floodplain management industries in North Carolina, and our experience informs our design decisions to produce results appropriate to each unique project location and owner.

In addition to hydraulic design and FEMA compliance, SEPI has the practical experience to understand how projects get constructed. We have developed construction sequences for countless similar project sites which ensure the protection of environmental resources from offsite sedimentation.

MAINTENANCE OF TRAFFIC IS KEY TO SAFETY



Traffic Control | Maintenance of Traffic (MOT) will be important for the success of this project. Proper analysis and selection of MOT methods is key to ensuring a safe, efficient, and cost effective project. SEPI staff will design traffic management, signing, and pavement marking plans. SEPI approaches each project by developing a detailed project scope taking into consideration constructability, safety, mobility, user cost, time restrictions, moratoriums, environmental considerations, and coordination. We have completed traffic control plans for projects of various sizes across North Carolina, ranging from small bridge replacement projects to large complex design build projects.

Our Team will utilize the most current MUTCD, NC Supplement to the MUTCD, and NCDOT WZTC Design Manual for developing traffic control/transportation management plans. In addition to our TMP expertise, our Traffic Design engineers are also proficient with signing, pavement marking, and signal designs.

Permitting | With the public outreach completed and the human and natural impacts collected, we will complete the Categorical Exclusion. Having previously had conversations with the permitting agencies concerning the development of the permit application, we will expedite the permitting process. Any proposed improvements for the project are anticipated to be permitted under a Nationwide 14 (Linear transportation projects) from the USACE, associated General Water Quality Certification (No. 4246).

SEPI is thoroughly experienced at preparing permit applications and securing these permits. Our Team is well-versed in completing federal and state permitting in the USACE Wilmington District. SEPI's industry leading regulatory Team includes Phil Harris, retired NCDOT Environmental Analysis Unit Department Head, Bill Biddlecome, retired USACE Wilmington District Chief, and Ms. Anna Reusche, with over 18 years of direct experience with the regulatory process. Our Team has a thorough understanding of federal, state and local regulations and understands what is needed to be successful. The Section 404/401 permit process is as follows:

- Secure plan sheets and review plan sheets, environmental documentation and meeting minutes prior to site visit
- Visit project site, ensuring that the project avoids and minimizes wetland, stream and/or buffer impacts Preparation/Review of permit drawings – showing project location, impact site locations, impact site drawings, summary sheet and a property owner
- Hold pre-application consultation with the regulatory resource agencies
- Prepare pre-construction application packet: cover letter, standard forms, roadway & bridge designs, permit drawings, utility plans, erosion control plans, application fee, and property owner notification
- Revise permit application based on comments from the applicant
- Review approved permit associated conditions

Our Team's proactive coordination and strong, positive working relationship with the regulatory agencies has proven beneficial to our clients in procuring project permits in a timely manner. We are able to prepare a complete application by anticipating agency project specific requests. Thereby eliminate potential permitting delays.

Contract Proposal and Estimates Approach | SEPI will produce bid advertisements, run pre-bid meetings, issue addenda, and conduct bid openings for the Town. After the bids are received, SEPI will review the bids, prepare the certified bid tabulations, and provide a recommendation of award to the Town.

The SEPI Team is keenly aware of the current construction climate, and client concerns about cost, as this issue is the most widely discussed topic for design projects. We have a number of strategies that we typically employ to control costs, including:

- Production of clear, understandable construction documents
- Design projects that promote cost reductions (including design innovations)
- Minimization of construction risk by the contractors to minimize opportunities for change orders
- Maximization of competition during bids (both materials and construction)

SEPI has been designing and bidding projects across North Carolina since 2010 and can pull on this historical data to help refine costs associated with bid items. Our Team is comprised of engineers that have worked for NCDOT, as well as contractors bidding on projects. We pull from this knowledge to provide cost estimates that are accurate and reflect the current state of the market. Our Team routinely delivers estimates that are less than 10% off from the construction cost.

Post Bid Support | The SEPI Team can provide construction administration and inspection services during the construction phase of work. At the completion of construction, SEPI will review the contractor's red-line drawings and provide final record drawings.



WHY SEPI?

- SEPI has an **understanding of the specific needs and expectations from our clients** from our years of experience with similar contracts, for municipal clients and NCDOT.
- Relevant **engineering, planning, and design experience** for similar bridge and roadway projects.
- **Ability to respond quickly, manage multiple tasks, and meet schedules** while providing an excellent level of service.
- View each new project as a unique **opportunity to enhance the quality of life for our community.**

CONCEPT TO COMPLETION
 The SEPI Team is proud to offer industry-leading expertise and full project delivery capabilities.

PROJECT MANAGEMENT + QA/QC

PROJECT MANAGEMENT

Phil Harris, PE, CPM will serve as the Project Manager and the primary Point-of-Contact with the Town. He will be responsible for all aspects of contract negotiation and performance, including the technical content of deliverables, cost control and efficiency, schedule control and variance reporting, and project management.

QUALITY ASSURANCE/CONTROL PROCEDURES + PROCESSES

Our systematic approach to quality control is more effective and less costly than an undefined approach. Initial accuracy and attention to detail creates a smoother process for all involved thereby producing a superior product.

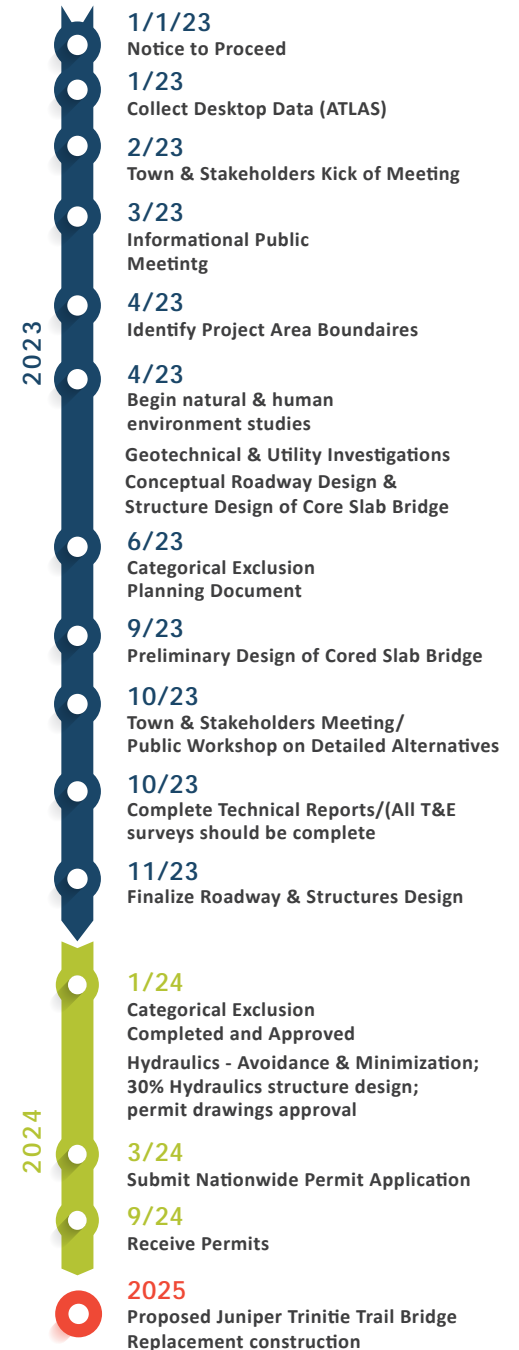
SEPI's QA/QC program is designed to:

- Include all levels of project management in the program.
- Help ensure that QA and QC are an integral part of the project and not just an end of job review.
- Provide documents that are technically reviewed and within budgetary and scheduling guidelines.
- Review adequacy of budgets and schedules for performing the work.
- Commit the resources necessary to achieve the project objectives.
- Promote frequent communication on progress of work, problems, and accomplishments.
- Provide periodic review of project performance related to the planned schedule and budget goals.

PROJECT MANAGEMENT + COMMUNICATION PLAN IMPLEMENTATION



SCHEDULE

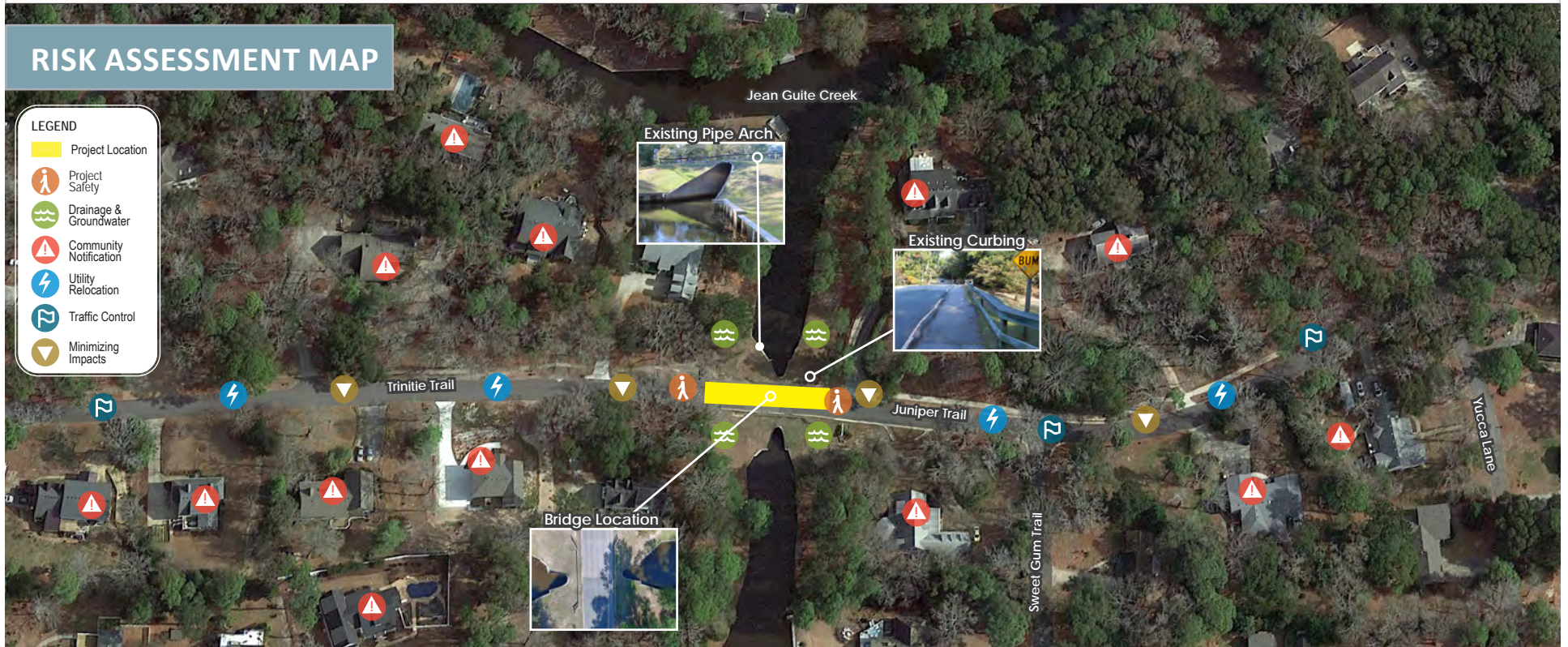


JUNIPER/TRINITIE TRAIL BRIDGE

IDENTIFICATION & MANAGEMENT OF PROJECT RISKS

All projects are susceptible to risks and they should be identified early in the project development process to properly manage them. The SEPI Team will proactively identify, analyze, respond to, monitor and control risks. Project risk will be effectively managed by understanding the potential risks, the likelihood of any particular risk occurring, and an action plan to deal with them if they do occur. While not all risks can be identified at this conceptual stage, several have been summarized below along with a risk level and management strategy.

RISK ASSESSMENT MAP



JUNIPER/TRINITIE TRAIL BRIDGE



RISK IDENTIFICATION & MANAGEMENT			
	RISK	DESCRIPTION	MANAGEMENT STRATEGY
	SAFETY	Safety is our #1 priority! This project is in a heavily populated area. With structure demolition and construction of a new cored slab bridge, there will be safety challenges.	The SEPI Team will maintain the project website and keep the local homeowners and traveling public aware of the current project status and upcoming steps, and how both may affect them individually. Safety tape and construction delineation will be established well before work begins. These construction limits will be monitored throughout the project timeline as to not be trespassed and put the public in danger.
	COMMUNITY NOTIFICATION	This project is in a heavily populated area with much vehicular and pedestrian through traffic. During the planning and construction of the project, it will be critical that the public is kept informed and updated of schedules and next steps.	As part of our project website, we will include an updated planning and construction schedule. We will also have a project hotline open for real time communication via phone. We will also make every effort to keep the adjacent property owners aware of current and future steps on the project.
	DRAINAGE & GROUNDWATER	During construction, it is anticipated that excavation will extend near or below the existing groundwater table.	For this reason, de-watering may be required. To combat an influx of water, we will design for all building and site drainage away from the foundation. We will also slope all ground surfaces away from the foundation. It will be our intent to construct fill areas early in the construction phase and employ temporary drainage ditches to accentuate drainage during construction.
	MINIMIZING IMPACTS	Due to the location of the bridge replacement project in a heavily populated neighborhood, construction noise may be an issue.	The SEPI Team will maintain the project website and keep the local homeowners aware of the current project status and upcoming steps. Construction noise dampening techniques will be implemented and there will be specific daily moratorium on when loud construction may occur.
	UTILITY RELOCATION	The existing stream crossing is a key utility corridor so temporary relocation without service stoppage will be critical.	Prior to construction beginning, a qualified inspector will identify utilities that need to be temporarily relocated. Coordination will occur with the private companies who own these services, and a schedule will be developed. This inspector will also verify that the bearing soils. If unstable, these soils will be stabilized through additional bedding material. The new utility trench may also need to be de-watered during utility re-installation.
	TRAFFIC CONTROL	During project construction, existing traffic patterns will be modified to the closest location that can hold increased traffic volumes including emergency vehicles.	This on-site detour will be clearly identified throughout the route. Emergency Response Units and local school systems (Fire, Police, Hospital) will be coordinated with directly to insure they are aware and updated. With a new traffic pattern, those effected homeowners will be notified of this temporary inconvenience and will be encouraged to monitor the project via the project website.