



ENGINEERING SERVICES FOR VARIOUS PROJECTS AND ON CALL SERVICES

MUNICIPAL ASSOCIATION OF SOUTH CAROLINA

OCTOBER 17, 2022



October 17, 2022

Jake Broom
Chief Operating Officer
Municipal Association of South Carolina
PO Box 12109
Columbia, SC 29211

RE: ENGINEERING SERVICES FOR VARIOUS PROJECTS AND ON CALL SERVICES

Dear Mr. Broom and Selection Committee:

The Municipal Association of South Carolina (the Association) needs a trusted partner to provide engineering services necessary to implement projects related to water and sewer projects for local governments around the state. KCI and its employees have decades of experience partnering with local municipalities and providing engineering services for water and sewer projects for the Association members. In addition, we have vast experience with State and Federal funding sources, such as CDBG, SC Rural Infrastructure Authority (RIA), SC State Revolving Fund (SRF) loan, RD, and FEMA, to name a few, that will aid the Association and its members when we begin to navigate the American Rescue Plan Act (ARPA) funding requirements.

As will be demonstrated in our Statement of Qualifications, we have assisted municipalities with the design, construction, and funding assistance for hundreds of miles of water lines and sewer lines, over 50 wastewater pump stations, numerous water treatment plant projects, and wastewater treatment facility projects, overall water/sewer system and treatment facility evaluations. We have also provided engineering services for all the project types listed in the RFQ:

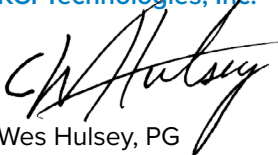
- Water Line Extension
- Water Line Replacement
- Sewer Line Rehabilitation
- Sewer Line Replacement
- Sewer Line Extensions
- Wastewater Lift/Pump Station
- Force Main Repairs/Replacement
- Water Treatment Facility Improvements
- Wastewater Treatment Facility Improvements
- Water and Sewer System Evaluations

Because of our focused experience with municipalities that own and operate water and sewer systems and our experience navigating state and federal funding agencies, we feel that KCI is exceptionally well qualified to assist the Association and its members with any engineering and funding needs related to ARPA-funded projects.

Please feel free to contact our existing clients for their testimony of our performance and ability to deliver high-quality engineering services. We appreciate this opportunity to provide you with our proposal for this project. If you have any questions, please contact David DePratter, PE, your client manager, at (864) 714-1298 or David.Depratter@kci.com.

Sincerely,

KCI Technologies, Inc.



Wes Hulseley, PG
Vice President, South Atlantic Regional Practice Leader - Water/Wastewater



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TECHNICAL APPROACH & UNDERSTANDING

UNDERSTANDING OF SCOPE

KCI understands how to scope water and sewer projects of all sizes and types. For our technical approach, we will describe how we would typically handle a conveyance (water line) type project.

Our proven, systematic project approach includes a framework to provide innovative, cost-effective, high-quality solutions. Through comprehensive data review, careful analysis, creative thinking, and clear direction, KCI will deliver value-enhancing and cost-saving designs and features.

PROJECT TECHNICAL APPROACH

KCI utilizes a multi-phased approach to completing the design, permitting, and construction of a conveyance type project. The proposed phases would be as follows:

PHASE 1 - PROJECT GOAL DEFINITION

A successful project requires engineering efforts to be aligned with the needs and desires of the client. During Phase 1, KCI will hold a kick-off meeting with the client's staff, the Association, and the funding agency (RIA) to confirm the goals and expectations for the project. The kick-off meeting will provide a forum to discuss the client's preferred options for street closures, line shutdowns, or any additional site constraints or challenges not defined in the RFP. Additionally, it will allow the Association and RIA representatives to discuss the grant requirements associated with this project.



PHASE 2 - DATA REVIEW AND EQUIPMENT EVALUATION

The goal of Phase 2 is to review any existing studies, design drawings, previous preliminary engineering reports (PERs), and any other data available to assist in providing a complete analysis of what the client would like to have incorporated into the waterline replacement project. The following detailed tasks will be included in this Phase:



Data Collection

- Review data presented in the RFP, previous studies/designs, client water usage data, record drawings, and maps.
- Interview client staff to ascertain if specific issues with the distribution system need to be addressed.
- Contact both the Association and RIA to obtain all the required documents and forms that will be needed for the execution of the project.

Field Review and Surveying

KCI will visit the client and walk the route with our surveyor to point out key features that need to be included in the survey to ensure that our design is as efficient and cost-effective as possible. Additionally, KCI will contact 811 location services to have the existing utilities in the project area located.

PHASE 3 - CONCEPTUAL DESIGN

The goal of Phase 3 would be to take the information gathered in Phase 2 and begin conceptual design for the proposed water line and to confirm feasibility and design assumptions.

Conceptual Design

- Confirm the conceptual drawing included in the RFP and develop maps and preliminary calculations, and confirm the preliminary construction cost estimate



INFORMATION

Collecting and documenting data for critical aspects

EVALUATION

Analyzing data, client objectives, and alternatives analysis

INNOVATION

Finding creative solutions that bring value

IMPLEMENTATION

Transforming concepts into construction docs and following through to project commissioning

included in the RFP.

- Summarize conceptual design in a tech memo providing a summary of findings suitable for presentation to the client's staff and other necessary stakeholders.
- Meet with the client staff, the Association, RIA, and other stakeholders to confirm the design assumptions for the project and funding agency requirements.
- Once we have addressed all the issues discussed above, KCI will deliver a brief technical memorandum summarizing all decisions made for the client's consideration before initiating formal design.

PHASE 4 - DETAILED DESIGN

Once the concepts in Phase 3 are reviewed, and the technical memorandum is approved, we will move into the detailed design of the waterlines. KCI will develop the construction plan documents incorporating any existing client standards and preferred equipment. The following detailed tasks will be included in this Phase:

Preliminary Design (60%)

- Prepare preliminary plan and profiles utilizing survey data
- Prepare draft technical specifications
- Deliver three sets of preliminary plans and specifications (two sets to the client and one set to the Association) at 60% design for the client's review
- Deliver preliminary cost estimate of 60% of design and anticipated construction schedule
- Schedule a 60% design review meeting with the client and the Association

Final Design (95%-100%)

- Incorporate design review comments into the plan set
- Develop and finalize items listed in the preliminary design phase further
- Finalize specifications
- Coordinate with the client's staff, the Association, and RIA to prepare Front End Contract Documents, including Notice of Instructions to Bidder, Bid Form, Contract Agreement, General and Supplemental Conditions, and any forms required from RIA
- Deliver 95% of design drawings, specifications, and bidding documents and prepared permit applications with required supporting documentation for all jurisdictional agencies for final review by the client, the Association, and RIA
- Provide the appropriate exhibits and documents necessary to obtain any right-of-way and/or easements if they are necessary
- Incorporate final review comments into drawings, bidding documents, specifications, and permit applications
- Deliver three full-sized stamped and signed final drawings, specifications, bidding documents, and permit applications (two sets to the client and one set to the Association) and one electronic copy (pdf format)
- Provide final cost estimate
- Revise drawings, specifications, and permitting documentation as necessary per permitting agency review comments
- Finalize contract documents and plans for bidding after SCDHEC approval
- Meet with local officials, clients, the Association, and RIA to review plans and cost estimates. Attend public meetings and conferences with the client as required
- Take pictures and/or videos of the project area before construction

PHASE 5 - PERMITTING

- Upon completion of the design phase, plans and specifications will be submitted to the client for final review and approval. All other necessary completed permitting packages will be submitted to the client. KCI will submit all permit packages to regulatory agencies for approval. This will include the SCDHEC Construction Permit, SCDHEC Stormwater Permit, SCDOT Encroachment Permit, US Army Corps of Engineers (if required), and any other regulatory



agency permits and encroachment approvals, as needed.

- If necessary, a PER in the specific format required by SCDHEC RIA will be submitted for approval before the Authorization to Construct Package submission.
- A SCDHEC Authorization to Construct (ATC) package will be prepared and submitted to the client for review, signature, and submittal to SCDHEC upon approval of the ER (if required) or once plans and specifications are completed.

PHASE 6 - BIDDING AND CONSTRUCTION

KCI is experienced in bidding on projects of all sizes. We will provide an organized approach to managing the procurement process, including tracking all Requests for Information (RFIs) and pre-qualification submittals. KCI will coordinate and participate in any required pre-bid meetings, respond to bidder questions, prepare necessary addenda, and conduct and attend the bid opening.

We will work closely with the client, the Association, and RIA to advertise the project for bids according to any procurement requirements from the client, the Association, and RIA. This will include assisting the client in advertising the project in SCBO. A unique service provided by KCI is our ability to post project bids on our website www.kci.com electronically. Our site links to a nationally recognized bid management system (www.questcdn.com) that provides broad project exposure to regional and national contractors and suppliers. If desired by the client, we can utilize this service for advertising any project.



During the bidding phase, KCI will provide the following assistance:

- Conduct a pre-bid meeting, if one is deemed necessary, and develop of agenda and summary
- Respond to contractors' questions and assist with the preparation of addenda, if necessary
- Conduct bid opening, prepare, and certify bid tabulation and provide recommendations for the award of construction contract
- Issue Notice of Award and Notice to Proceed after client, SC Department of Commerce, and RIA approval
- Assist the client with the collection of bonds and insurance documents and preparation of final contract documents

During the construction phase, KCI's experienced team, led by Kin Chandler, will act as the liaison between the contractor and the client. KCI will attend and lead the pre-construction conference along with the client and the selected contractor. After the pre-construction conference, we will provide an organized approach to managing the construction process.

KCI can provide the following construction administration services for this project:

- Conduct a preconstruction meeting with the selected general contractor, the Association, RIA, and client staff
- Prepare contract documents and coordinate execution by the contractor and the client. This will also include all the documents required by RIA
- Issue Notice to Proceed
- Provide necessary copies of construction documents to the general contractor and the client
- Review and approve appropriate actions with respect to shop drawings, samples, and other data which the general contractor is required to submit
- Review contractor's insurance coverage, schedules, subcontractors, material suppliers, and other submittals
- Determine the amount owed to the general contractor based on observations and inspections and the data comprising the application for payment
- Make recommendations to the client concerning the disapproval or rejection of the general contractor's work while it is in progress
- Clarify and interpret construction plans and specifications
- Recommend change orders and work change directives

KCI's team of experienced construction observation staff can provide full-time or part-time resident project representation

(RPR).

KCI can provide the following construction observation services for this project:

- Visit the construction site once per month during active construction to attend monthly construction progress meetings to ensure full communication among all parties and compliance with the construction schedule
- Assign a representative to the project to provide construction observation services during the construction period. This will include a minimum of one site visit per week during the construction period
- Take pictures, take observation notes, and deliver weekly observation reports to the client
- Observe the construction of the project to confirm that it is being constructed according to the approved plans and specifications
- Prepare and present permanent easements and construction easements, if necessary
- Witness waterline pressure tests
- Coordinate and review the bacteriological testing and acceptance of the new water lines
- Meet with SCDOT personnel as required to obtain final acceptance of patching and pavement resurfacing
- Coordinate and conduct a final walk-through and inspection with the client staff, the Association, RIA, and contractor, and we will prepare a final punch list for the contractor
- Perform final inspection to ensure that all punch list items have been completed per the contract documents
- Coordinate delivery of any training and O&M manuals for the installed equipment
- Coordinate inspections with any necessary regulatory agencies
- Assist in project closeout and establishment of warranties and guarantees

Once construction activities are complete, KCI will attend a public meeting to discuss the project and respond to any questions. Also, we will work with the contractor to complete a set of record drawings and deliver record drawings to the client and any additional stakeholders.

PROJECT MANAGEMENT

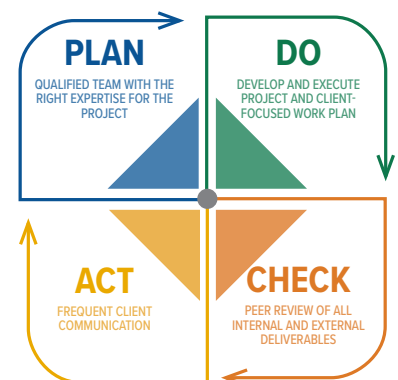
David DePratter, PE will serve as the client manager and primary point of contact and will work closely with Clay Helms, PE and Tom Vollmar, PE, who will coordinate the activities of the project team members and maintain open lines of communication. The KCI team will conduct periodic teleconferences or on-site meetings. Routine topics will include progress reports, budgetary updates, and discussion of problems and issues encountered during the previous week. Following each meeting, an action items list, including responsibilities and deadlines, will be forwarded to participants.



These action items will be reviewed at future meetings to provide accountability.

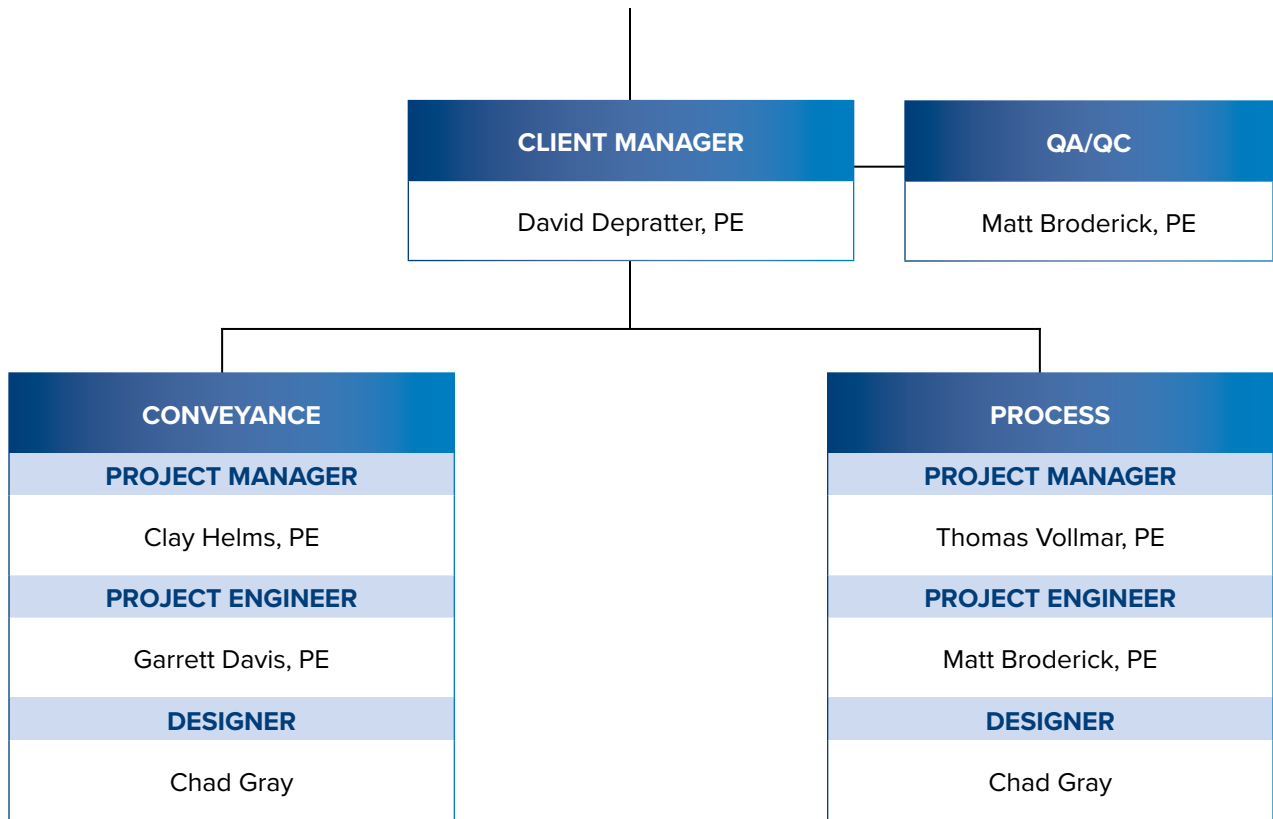
QUALITY MANAGEMENT

The KCI team systematized project approach includes a methodical quality control review process to deliver clear and accurate project documents. Our three-tier quality control review ensures that reports, drawings, cost estimates, and other deliverables are reviewed by multiple team members, thus minimizing errors and enhancing completeness, compatibility, and precision. Our three-tier review occurs at the production staff, project management, and principal level. Matt Broderick, PE, will serve as the lead QA/QC manager and will perform the final review of all documents prior to release to the client, bidders, or contractors.



WORK MANAGEMENT PLAN & EXPERIENCE OF PROPOSED PERSONNEL

ORGANIZATION CHART & TEAM RESUMES



SUPPORT STAFF				
Elise Harris, EIT <i>Project Engineer</i>	Cole Garnett, EIT <i>Project Engineer</i>	Warren Trutwin <i>Designer</i>	Kin Chandler <i>Construction Manager</i>	Kara Hrkach <i>Administration</i>



DAVID DEPRATTER, PE

CLIENT MANAGER

26 YEARS
TOTAL EXPERIENCE

5 YEARS
WITH KCI



EDUCATION

BS / Civil Engineering / Georgia
Institute of Technology / 1995



CERTIFICATIONS & REGISTRATIONS

PE / SC 20919

PE / NC 027259



OFFICE LOCATION

Spartanburg, SC

QUALIFICATIONS OVERVIEW

As a project manager and engineer, David specializes in design and project management of water and wastewater conveyance projects as well as wastewater treatment plant design. He has served as a project manager on a design-build project for \$28M in upgrades to a water treatment plant. He has performed water system modeling, analysis and troubleshooting, for various sized utilities in North and South Carolina. He has led numerous design efforts related to sewer collection and pumping to accommodate large and small clients' needs. Additionally, David has been involved in several wastewater treatment plant designs ranging from a small industrial bioreactor plant to a 9 MGD BNR activated sludge process.

PROJECT EXPERIENCE

SJWD Water District, Wellford Area Waterline Replacement & SC RIA

Application - Wellford, SC. Program Manager. KCI provided designing, permitting, bidding, and construction services for the replacement of 20,700 LF of new 2", 4", and 6" water mains.

SJWD Water District, Hwy 29 – 20" Waterline Replacement - King, NC.

Program Manager. Project included writing a PER to replace 1,000 LF of 20" waterline that is adjacent to the existing Hwy 29 bridge that crosses the North Tyger River. This bridge is going to be replaced and the existing 20" waterline will need to be moved to avoid the new bridge foundation. The project is currently in the design phase.

City of Hickory, NC Hwy 127 Bridge Waterline - Hickory, NC. Senior Project Manager. Project included design, permitting, and construction phase services for the design of 1,100 LF of 12" ductile iron waterline and bridge attachments for the replacement of waterline along NC Hwy 127 attached to the bridge over Lake Hickory (Catawba River).

Spartanburg Water System, Battleground Road Area Water System

Improvements - Spartanburg, SC. Project Engineer. Responsible for the design, permitting, contract administration, and construction administration for the installation of a 1 MG elevated water tank, a booster pump station and water mains (18,000' of 16" pipe and 6,000' of 20" pipe).

Town of Lockhart, Town of Lockhart Infrastructure Improvements - Lockhart, SC. Project Manager & Design. Scope of work included the design, permitting, contract administration, construction administration and project management of the rehabilitation project which included the replacement of aged and leading water lines with new water lines (21,000' of 2" – 8" pipe), dilapidated sewer lines (3,000' of 8" pipe) and collapsed storm drains (6,500' of 15" – 36" pipe).



CLAY HELMS, PE

CONVEYANCE PROJECT MANAGER

26 YEARS
TOTAL EXPERIENCE

3 YEARS
WITH KCI



EDUCATION

BS / Civil Engineering / Clemson University / 1995



CERTIFICATIONS & REGISTRATIONS

PE / SC 20228

PE / NC 034009



OFFICE LOCATION

Spartanburg, SC

QUALIFICATIONS OVERVIEW

Clay is a senior design engineer with training in water distribution systems, wastewater collection and systems, wastewater treatment, site design, construction administration, and hydraulic systems. Clay's technical expertise includes pumping system design, linear infrastructure design, water & wastewater treatment facility design, stormwater/erosion control design, permitting, and construction administration. He also has experience acquiring and administering project funding from numerous state and federal agencies.

PROJECT EXPERIENCE

Town of Lockhart, Lockhart Drive Waterline Replacement - Lockhart, SC.

Project Manager, Proposal Leader. The project consisted of the installation of approximately 2,250 LF of 8", 690 LF of 6", and 240 LF of 4" water line to replace the existing 8" cast iron water line on Lockhart Drive including approximately 24 arterial/branch water line reconnections. The project was funded by grants from both CDBG and SC RIA. KCI provided design, permitting, bidding assistance, and construction administration/observation.

City of Union, Carlisle Union Regional Sewer Extension - Carlisle, SC. Project Manager, Proposal Leader. KCI is providing design, permitting, bidding, and construction services for the regional sewer extension to pump wastewater from the Town of Carlisle to the City of Union, SC. The project includes approximately 60,000 LF of force main, two new pump stations, and one pump station upgrade.

Easley Combined Utilities, Alice Mill Sewer and Water Upgrade - Easley, SC. Senior Project Manager. Project included the installation of approximately 7,100 LF of 8" gravity sewer line, 39 manholes, 80 sewer service reconnections, 6,000 LF of 2.5" and 2" water lines, and 80 water service reconnections. Responsible for planning, design, bidding, and construction phase services.

Laurens County Water & Sewer Authority, Bethany Tank Water Improvements - Laurens, SC. Project Manager. The project included updating and calibrating the system's existing GIS enabled model to assist in efficient design for water main improvements. The existing distribution system was limited in capacity between the water source and Bethany Tank.

Town of Central, Church Street Water Line Replacement - Pickens County, SC. Project Manager. The project will consist of the portions of the Town of Central's water distribution system that is to be replaced on Church Street. The proposed engineering services provided by KCI will consist of engineering design, regulatory permitting, bidding, funding assistance, construction administration, and construction observation.

SJWD Water District, Wellford Area Waterline Replacement & SC RIA Application - Wellford, SC. Senior Project Manager. KCI provided designing, permitting, bidding, and construction services for the replacement of 20,700 LF of new 2", 4", and 6" water mains.



GARRETT DAVIS, PE

CONVEYANCE PROJECT ENGINEER

7 YEARS
TOTAL EXPERIENCE

3 YEARS
WITH KCI



EDUCATION

BS / Environmental Engineering /
Clemson University / 2014



CERTIFICATIONS & REGISTRATIONS

PE / SC 36699

PE / NC 050854



OFFICE LOCATION

Piedmont, SC

QUALIFICATIONS OVERVIEW

Garrett is a civil engineer with a focus in water and wastewater design. His professional experience includes leading design teams on water distribution, wastewater conveyance, pump stations, and hydraulic modeling projects. Garrett also excels in regulatory permitting, bidding, and construction administration. His diverse skillset and organizational skills make Garrett an integral part of the KCI water/wastewater design team.

PROJECT EXPERIENCE

Town of Lockhart, Lockhart Drive Waterline Replacement - Lockhart, SC. Project Engineer. The project consisted of the installation of approximately 2,250 LF of 8", 690 LF of 6", and 240 LF of 4" water line to replace the existing 8" cast iron water line on Lockhart Drive including approximately 24 arterial/branch water line reconnections. The project was funded by grants from both CDBG and SC RIA. KCI provided design, permitting, bidding assistance, and construction administration/observation. Mr. Davis was the project engineer responsible for the utility design.

City of Union, Carlisle Union Regional Sewer Extension - Carlisle, SC. Project Engineer. KCI is providing design, permitting, bidding, and construction services for the regional sewer extension to pump wastewater from the Town of Carlisle to the City of Union, SC. The project includes approximately 60,000 LF of force main, two new pump stations, and one pump station upgrade.

Easley Combined Utilities, Alice Mill Sewer and Water Upgrade Phase 1 - Easley, SC. Project Engineer. Project included the installation of approximately 7,100 LF of 8" gravity sewer line, 39 manholes, 80 sewer service reconnections, 6,000 LF of 2.5" and 2" water lines, and 80 water service reconnections.

Laurens County Water & Sewer Authority, Bethany Tank Water Improvements - Laurens, SC. Project Engineer. The project included updating and calibrating the system's existing GIS enabled model to assist in efficient design for water main improvements. The existing distribution system was limited in capacity between the water source and Bethany Tank.

Town of Central, Church Street Water Line Replacement - Pickens County, SC. Project Engineer. The project will consist of the portions of the Town of Central's water distribution system that is to be replaced on Church Street. The proposed engineering services provided by KCI will consist of engineering design, regulatory permitting, bidding, funding assistance, construction administration, and construction observation. Mr. Davis modeled the distribution system and designed the replacement.

SJWD Water District, Wellford Area Waterline Replacement & SC RIA Application - Wellford, SC. Project Engineer. KCI provided designing, permitting, bidding, and construction services for the replacement of 20,700 LF of new 2", 4", and 6" water mains. Mr. Davis was responsible for the design of the new water mains.



THOMAS VOLLMAR, PE

PROCESS PROJECT MANAGER

28 YEARS
TOTAL EXPERIENCE

16 YEARS
WITH KCI



EDUCATION

MEng / Environmental Systems
Engineering / 1993

BS / Aerospace Engineering /
1989



CERTIFICATIONS & REGISTRATIONS

PE / SC / 17656

PE / NC / 033467

PE / GA / 032322

PE / TN / 124989



OFFICE LOCATION

Piedmont, SC

QUALIFICATIONS OVERVIEW

Tom has 28 years of experience and has been the technical leader for over \$50M in capital projects and \$60M in loan/grant applications. His strengths include development and coordination of multidisciplinary project teams, energy efficient process design, value engineering, and evaluation and deployment of emerging technologies.

PROJECT EXPERIENCE

City of King, Wastewater Treatment Facility including Gravity Sewer Line - City of King, NC. Staff Team. Project includes design for a new 1.5 MGD wastewater treatment facility (WWTF) along with a new 4.1-mile 24" gravity trunk line conveying wastewater from an existing force main discharge to the new WWTF. The project is currently in the design phase.

Franklin County, I-85 Corridor Sewer Collection System and New WWTF - Franklin County, GA. Principal-in-Charge. Project included design and permitting for new wastewater treatment facility that consolidated two local WWTF and provided influent pumping, screening and grit removal, modified SBR process, chemical feed, UV disinfection, and sludge digestion and dewatering. Process equipment selection, overall design guidance and technical review, preparation of the Antidegradation Report & Environmental Report, and development of projected costs of service and revenue in support of USDA-RD funding application. Three-year revenue and expense model was created for the County's wastewater enterprise.

City of Abbeville, Long Cane Creek WWTF Upgrades - Abbeville, SC. Project Manager. Project included design, permitting, and construction management for a new aeration basin and two aerobic digesters for the 1.7 MGD facility as well as install a digester pump station and 400 feet of 6" force main.

Pickens County, Central North Wastewater Treatment Facility Upgrade & Expansion - Pickens, SC. Project Manager. Project included an upgrade and expansion of the 0.15 MGD wastewater treatment plant to 0.3 MGD. Performed design, permitting, and construction administration for the project.



MATT BRODERICK, PE

PROCESS PROJECT ENGINEER & QA/QC

17 YEARS
TOTAL EXPERIENCE

8 YEARS
WITH KCI



EDUCATION

BS / Civil Engineering / Clemson University / 2005



CERTIFICATIONS & REGISTRATIONS

PE / SC 28173

PE / NC 037597

PE / GA 040314



MEMBERSHIPS

American Society of Civil Engineers - Member

Water Environment Association of South Carolina - Member

Water Environment Federation - Member



OFFICE LOCATION

Piedmont, SC

QUALIFICATIONS OVERVIEW

Matt is a design engineer with training in water and wastewater distribution systems, wastewater treatment, site design, environmental engineering, construction administration, hydrology, and hydraulic systems. His notable design experience includes upgrades of multiple wastewater treatment facilities with capacities ranging from 0.3 – 99 MGD, and several drinking water facilities with capacities ranging from 3 MGD to 64 MGD. Matt's technical expertise includes pumping system design, linear infrastructure design, water & wastewater treatment facility design, stormwater/erosion control design, permitting, and construction administration. Previous employment with a large international design mega-firm provided him with valuable experience managing multi-discipline teams for large projects and small projects across varying geographies.

PROJECT EXPERIENCE

Renewable Water Resources, Blossom Branch Pump Station and Gravity Sewer - Anderson, SC. Senior Project Manager. Project included engineering design, permitting and bidding services for a new gravity sewer collection system, pump station and force main. The project generally included 600 LF of 8" gravity sewer, 3,900 LF of 12" gravity sewer, 2,900 LF of 10" gravity sewer, 5,800 LF of 15" gravity sewer, 1,300 gpm modular suction-lift pump station, and 6,500 LF of 10" force main.

MetroConnects, Brushy Creek Gravity Sewer Line - Greer, SC. Project Manager. KCI provided a proposal for the design, permitting, and construction oversight for a project including approximately 350 LF of existing 8" Vitrified Clay Pipe (VCP) gravity line that will be abandoned and replaced with a new 8" gravity line. The new gravity line will include an aerial crossing section that is to be installed around a new SCDOT bridge, which has yet to be constructed.

Pickens County, Central North Wastewater Treatment Facility Upgrade & Expansion - Pickens, SC. Project Engineer. Project included an upgrade and expansion of the 0.15 MGD wastewater treatment plant to 0.3 MGD. Performed design, permitting, and construction administration for the project.

Seneca Light & Water, Lake Keowee Water Treatment Plant Improvements - Seneca, SC. Project Engineer. Project included installation of on-site hypochlorite generation system and upgrade chemical feed and sludge handling at the water treatment plant and allow expansion from 14 MGD to 20 MGD. Managed multi-disciplinary team of seven consultants through design, bid, and contract administration.

Franklin County, I-85 Corridor Sewer Collection System and New WWTF - Franklin County, GA. Project Manager. Project included design and permitting for new wastewater treatment facility that consolidated two local WWTF and provided influent pumping, screening and grit removal, modified SBR process, chemical feed, UV disinfection, and sludge digestion and dewatering. Matt was responsible for the design and permitting for consolidation and expansion of two local wastewater treatment facilities.



CHAD GRAY

CONVEYANCE & PROCESS DESIGNER

9 YEARS
TOTAL EXPERIENCE

3 YEARS
WITH KCI



EDUCATION

AA / ITT Technical Institute / 2012



OFFICE LOCATION

Piedmont, SC

QUALIFICATIONS OVERVIEW

Chad is an AutoCAD designer with a focus in water and wastewater conveyance and processes. His project experience includes assistance with both industrial and utility clients. In addition to design, He is also an experienced inspector and geotechnical project manager, that was responsible for coordinating and performing field work such as drilling, ReMi, field resistivity, infiltration testing, site layout and clearing, as well as drafting proposals and retaining wall design drawings.

PROJECT EXPERIENCE

Easley Combined Utilities, Alice Mill Sewer and Water Upgrade - Easley, SC. Designer. Project included the installation of approximately 7,100 LF of 8" gravity sewer line, 39 manholes, 80 sewer service reconnections, 6,000 LF of 2.5" and 2" water lines, and 80 water service reconnections.

Town of Central, Church Street Water Line Replacement - Central, SC. Designer. The project will consist of the portions of the Town of Central's water distribution system that is to be replaced on Church Street. The proposed engineering services provided by KCI will consist of engineering design, regulatory permitting, bidding, funding assistance, construction administration, and construction observation.

City of Anderson, Evergreen Area Waterline Improvements - Anderson, SC. Designer. The project consisted of portions of the client's water distribution system to be replaced in the Evergreen Street area. The proposed Engineering Services provided by KCI consisted of engineering design, regulatory permitting, bidding, construction administration, and construction observation.

Milliken & Company, Magnolia Plant Water Treatment Plant Expansion - Greenville, SC. Designer. The project consists of a 2 MGD expansion to the current 3.5 MGD water treatment plant situated between the Magnolia Finishing Plant and the Allen Chemical Plant which is operated by Milliken's Blacksburg Utility Co-Op Division.

City of King, Wastewater Treatment Facility including Gravity Sewer Line - King, NC. Designer. Project includes design for a new 1.5 MGD WWTF along with a new 4.1-mile 24" gravity trunk line conveying wastewater from an existing force main discharge to the new WWTF. The project is currently in the design phase.

City of Union, Tosch Creek Wastewater Treatment Plant Sodium Hypochlorite Project - Union, SC. Designer. Involved the installation of 21,965 LF of 8" water line, 16,045 LF of 6" water line, 2,470 LF of 4" water line, 550 LF of 3" and 2" water line, installation of 10 fire hydrant assemblies, service reconnections, and pavement replacement. Also, upgrades/improvements of the existing chlorination system by replacing existing chlorine gas system with a new sodium hypochlorite bulk system including two bulk tanks, day tank, and transfer/feed pumps.

EXPERIENCE OF THE FIRM

Our team has assisted municipalities with the design, construction, and funding assistance for hundreds of miles of water lines and sewer lines, over 50 wastewater pump stations, numerous water treatment plant projects, and wastewater treatment facility projects, overall water/sewer system and treatment facility evaluations. Below are a few project examples of and references for our experience for the last three years.

LOCKHART DRIVE WATERLINE REPLACEMENT LOCKHART, SC



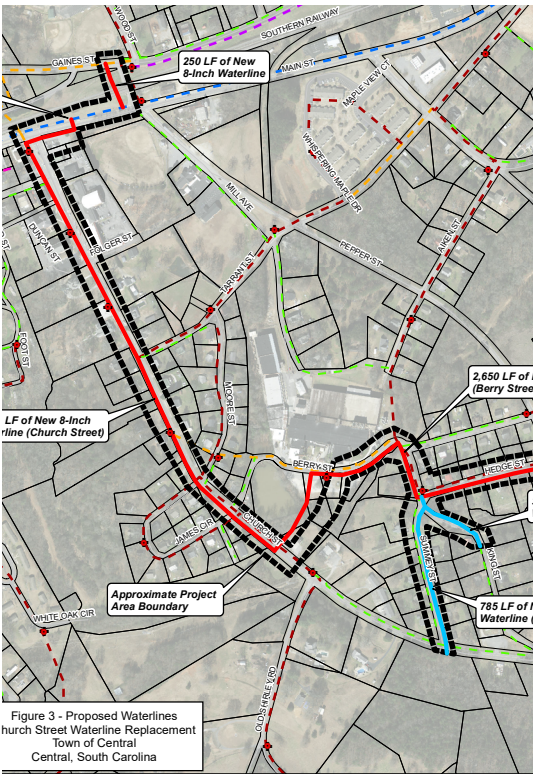
During Construction

CLIENT: TOWN OF LOCKHART

Mayor Connie Porter // 864.545.2103 // lockhart118@hotmail.com

The project consisted of the installation of approximately 2,250 LF of 8", 690 LF of 6", and 240 LF of 4" water line to replace the existing 8" cast iron water line on Lockhart Drive including approximately 24 arterial/branch water line reconnections. The project is funded by grants from both CDBG and SC RIA. KCI provided the design, permitting, bidding assistance, and construction administration/observation services for this project.

CHURCH STREET WATER LINE REPLACEMENT CENTRAL, SC



CLIENT: TOWN OF CENTRAL

Phillip Mishoe // 864.639.5528 // pmishoe@cityofcentral.org

The project consists of the portions of the Town of Central's water distribution system that is to be replaced on Church Street and the surrounding areas. The existing Church Street waterline is an 8" cast iron waterline that was installed in the 1930's. However, the existing 8" waterline along Church Street has not been upgraded since its installation in the 1930's and has reached the end of its useful life. A new 8" waterline is proposed to replace the existing 8" waterline along Church Street, Berry Street, and Hedge Street. A new 8" connection is also proposed between Highway 93 and Gaines Street to replace the existing 8" connection to the Gaines Street waterline. The total length of new 8" waterline installation is approximately 5,600 LF. New 2" waterlines are also proposed along Summey Street and King Street to replace the existing galvanized waterlines in the area. The total length of new 2" waterline installation is approximately 1,140 LF. Also included with these waterline installations will be three fire hydrants, 30 valves, 18 branch/arterial connections, and 47 service re-connections. The project is funded by grants from both CDBG and SRF, which KCI helped the Town obtain. KCI provided the design, permitting, bidding assistance, and construction administration/observation services for this project.

ALICE MILL SEWER AND WATER UPGRADE EASLEY, SC



CLIENT: EASLEY COMBINED UTILITIES (ECU)

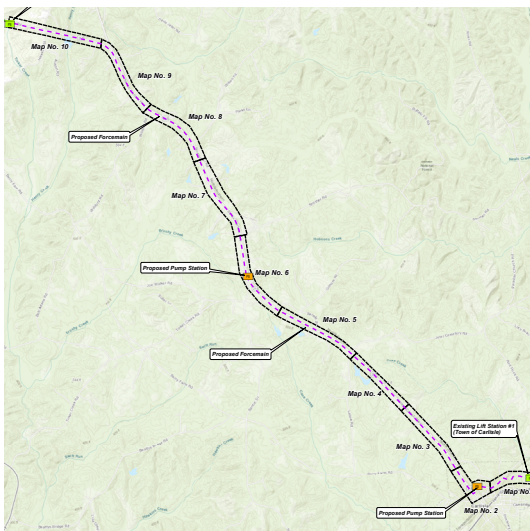
Joel Ledbetter // jledbetter@easleyutilities.com

Easley Combined Utilities (ECU) tasked KCI with designing, permitting, bidding, and construction services for the replacement of the existing sewer lines and water lines in the Alice Mill – Phase 1 project area. The existing sewer lines were originally installed by the Mill in the 1920's. In addition to the existing sewer lines being deteriorated and past their useful life, most of the existing lines were installed behind the residences and in back alleyways. As a result, over time, the sewer lines became inaccessible due to buildings, fences, and other structures being constructed over the sewer lines.

The new sewer lines have been relocated into the roadways in front of the houses which will make the operation and maintenance of these lines much easier and less expensive. The existing water lines were installed around the same time as the sewer lines. The existing water lines in the project area are a mixture of 1.5" and 1.25" galvanized steel lines. Much like the sewer lines, these water lines have outlived their useful service lives. Additionally, the water quality and reliability of these lines are poor due to their age and the tuberculation inside the waterlines.

The existing water lines were replaced with new 2.5" and 2" PVC water lines. KCI assisted ECU with the acquisition and the administration of both the CDBG grant (Appalachian COG) and SC RIA grant. The low bid for the project came in under the estimated budget by approximately \$180,000. KCI assisted ECU with the construction administration and the construction observation for this project.

CARLISLE - UNION REGIONAL SEWER EXTENSION CARLISLE, SC



CLIENT: CITY OF UNION

Joe Nichols // [864.429.1721](tel:864.429.1721) // jnichols@cityofunion.org

The project consists of the expansion of the City of Union's sewer collection system to receive the wastewater flows from the Town of Carlisle. Pump stations and forcemains will be installed from the Town of Carlisle's No. 1 pump station to the City of Union's Beltline pump station. KCI is providing design, permitting, bidding, and construction services for the regional sewer extension to pump wastewater from the Town of Carlisle to the City of Union. The project includes approximately 60,000 LF of force main, two new pump stations, odor control systems, and one pump station upgrade. The project is funded by grants from CDBG, SC RIA, and SRF.

MAIN STREET WATERLINE REPLACEMENT **NEWBERRY, SC**

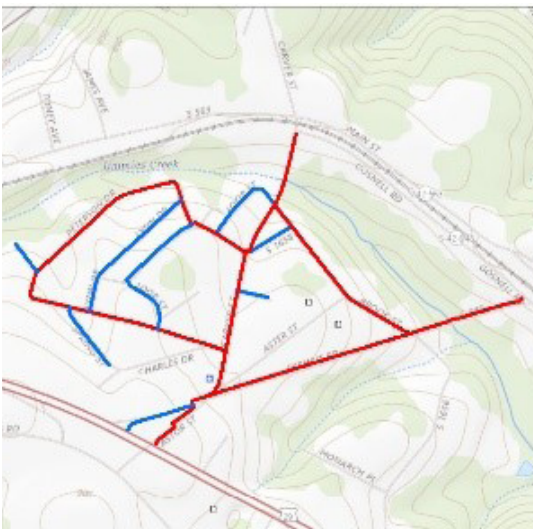


CLIENT: CITY OF NEWBERRY

Tim Baker // 803.321.1018 // tbaker@cityofnewberry.com

The existing Main Street waterline is a 4" cast iron waterline that was installed in the 1950s. However, the existing waterline has not been upgraded since it's installation, reached the end of its useful life, and needed to be replaced with a new 8" DIP waterline. The project consisted of the installation of approximately 2,160 LF of 8", 360 LF of 6", and 150 LF of 2" water line to replace the existing 4" cast iron water line on Main St. in the City of Newberry. Also, included with this waterline installation were 12 fire hydrants, 21 valves, three blow-offs, 19 branch/arterial connections, and 45 service re-connections. KCI provided the design, permitting, bidding assistance, and construction administration/observation services for this project.

WELLFORD AREA WATERLINE REPLACEMENT & SC RIA APPLICATION **WELLFORD, SC**



CLIENT: SJWD WATER DISTRICT

Kim Fortner // 864.949.2819 // kfortner@sjwd.com

The SJWD Water District tasked KCI with designing, permitting, bidding, and construction services for replacing existing water lines in the City of Wellford. The existing water lines in the City of Wellford were installed in the late 1950's and are a mixture of old cast iron and galvanized steel lines. The water quality and reliability of these lines were poor due to their age and the tuberculation inside the waterlines. The goal of the project was to fix the issues with the existing water lines and provide safe and reliable drinking water for residents. Additionally, new fire hydrants were installed to increase the fire protection for the residences. The existing water lines were replaced with new 6" ductile iron and 2" HDPE water lines. KCI assisted SJWD with the acquisition and the administration of the SC RIA grant (\$500,000 grant). KCI also assisted SJWD with the construction administration and construction observation for this project.

PUMP STATION & GRAVITY SEWER REHABILITATION **SENECA, SC**



CLIENT: CITY OF SENECA

Robert Faires // 864.885.2723 // rfaires@seneca.sc.us

KCI provided condition assessment, engineering design, contract administration, and resident project representative services to upgrade seven existing sewer pump stations and three gravity sewer segments. Each pumping system was evaluated to determine if existing infrastructure could be re-used or replaced. Receiving sewers were evaluated to ensure adequate capacity. Self-priming centrifugal pumps were evaluated against vacuum-primed pumps and selected for four of the seven stations. A unique design feature was a submerged underwater force main, which diverted flow from a deteriorating receiving manhole and gravity sewer segment to an underloaded pump station in an adjacent sewer basin. The gravity sewer segments were inspected by CCTV and slated for open-cut replacement or point repairs, CIPP, or pipe bursting based on the results. Significant I/I reduction was accomplished in the rehabilitated segments.

LAKE KEOWEE WTP IMPROVEMENTS **SENECA, SC**



CLIENT: SENECA LIGHT & WATER

Robert Faires // 864.885.2723 // rfaires@seneca.sc.us

Seneca Light & Water constructed a new control/operations building with a water education center, upgrading the WTP to include MicroClor Onsite Chlorine Generation, a new chemical feed, and sludge handling. KCI developed rigorous equipment selection protocols for operation and maintenance costs savings for the completed project. The project included installing an on-site hypochlorite generation system, upgrading chemical feed and sludge handling at the water treatment plant, and expanding from 14 MGD to 20 MGD. KCI managed a multidisciplinary team of seven consultants through design, bid, and contract administration. KCI performed a head-to-head evaluation of OSHG eqpt from four major manufacturers, including footprint, hydrogen venting, O&M costs, major maintenance, and other factors. Also, KCI performed pilot testing of alum sludge dewatering equipment, including screw and hydraulic piston presses (which yielded dewatered cake above 35% solids). KCI implemented a screw press for sludge dewatering and a large bubble mixing system to overcome poor mixing characteristics in the sludge holding tanks. KCI provided engineering design, contract administration, and RPR services for this SRF project.



CENTRAL NORTH WWTF UPGRADE & EXPANSION PICKENS, SC



CLIENT: PICKENS COUNTY

Ken Roper // 864.898.5844 // kenr@co.pickens.sc.us

Pickens County closed the aging Central North WWTF and expanded treatment capacity with a new 0.3 MGD Aqua-Aerobic Systems Sequencing Batch Reactor (SBR) WWTF. The new WWTF uses chemical and biological phosphorus removal and UV disinfection. The limited available site made the proposed layout and constructability review critical components of the design. The new plant included influent screening; AquaAerobic SBR; influent and effluent flow equalization; chemical feed; tertiary cloth media filters for phosphorus removal; closed chamber UV disinfection; and non-mechanical post aeration tray. KCI included biological and chemical phosphorus removal in the project design to aid in meeting low effluent limits. KCI also successfully negotiated a 12-month rolling mass average for Phosphorus in the NDPES permit application.

LONG CANE CREEK WWTF UPGRADES ABBEVILLE, SC



CLIENT: CITY OF ABBEVILLE

Tim Hall // 864.366.4518 // thall@abbevillecitysc.com

The City of Abbeville operates a lagoon-based 1.7-MGD extended air-activated sludge WWTF. The plant experienced sludge deposition due to poor mixing patterns in the oversized aeration basin, which caused unpredictable mixed liquor swings and compromised nitrification. Inadequate sludge dewatering and disposal facilities exacerbated the problem by preventing adequate removal of biomass from the system.

KCI performed an alternatives analysis to select cost-effective upgrades that addressed the underlying operational issues. KCI prepared a PER and assisted the City with applications to multiple funding agencies. Project funding was received from US EDA, SC SRF, and SC RIA. KCI performed design and construction services, including RPR, for the upgrade project. The design minimized excavation by partitioning the single large AB into a smaller AB and two digesters. Retrievable fine-bubble aeration arrays were installed in the HPDE-lined AB to permit diffuser replacement without draining the AB. A decommissioned lagoon on-site was used for temporary treatment when the AB was taken off-line for construction.

FAMILIARITY WITH FEDERAL FUNDING REQUIREMENTS

PROJECTS FUNDED THROUGH CDBG AND SRF

Our team has decades of experience in designing and overseeing the construction of waterline upgrade and improvements projects. This includes many projects funded by CDBG grants from the SC Department of Commerce, SC RIA grants across the state, SRF loan, and many projects administered by the Catawba Regional Council of Governments.

KCI and staff have completed over 28 CDBG-funded and 12 SC RIA-funded projects. A table highlighting some of these projects in Lockhart and the surrounding areas of Union County is included with this proposal. KCI has extensive experience working with local governments and various state and administrative services. For example, KCI and staff have performed work for over 30 municipalities in the State of SC and four such entities in Union County (City of Union, Town of Lockhart, Town of Carlisle, and Town of Jonesville). KCI and staff have not only worked extensively with the Catawba Regional COG but also worked with the Appalachian COG, Upper Savannah COG, Central Midlands COG, and SC RIA. Additionally, KCI has worked on numerous SRF and USDA (RD) funded projects.

PROJECT MANAGER	PROJECT	CLIENT	FUNDING ADMINISTRATOR	TYPE
Clay Helms	Lockhart Highways 9 & 49 Sewer Project	Town of Lockhart	CRCOG	Sewer Upgrade
Clay Helms	Lockhart Water and Sewer Upgrade	Town of Lockhart	CRCOG	Water & Sewer Upgrade
Clay Helms	Lockhart Sewer Upgrade	Town of Lockhart	CRCOG	Sewer Upgrade
Clay Helms	Meansville Road Pump Station Upgrade and Forcemain Project	City of Union, SC	SC RIA	Sewer Upgrade
Clay Helms	Foster St. Sewer Rehabilitation	City of Union, SC	CRCOG	Sewer Upgrade
Clay Helms	Medical Science Trunk Sewer Replacement	City of Union, SC	SC RIA / EDA	Sewer Upgrade
Clay Helms	Lockhart School Sewer Line Replacements	Town of Lockhart	SC RIA	Sewer Upgrade
Clay Helms	Lockhart Drive Water Upgrade Project	Town of Lockhart	CRCOG	Water Upgrade
Clay Helms	Pump Stations Upgrade	Town of Carlisle	CRCOG / SC RIA	Sewer Pump Station Upgrade
Clay Helms	Carlisle/Union Regional Sewer Extension	Town of Carlisle	CRCOG / SC RIA / SRF	Sewer Upgrade
Clay Helms	City of Union Regional Water and Wastewater Feasibility Study	City of Union	SC RIA	Feasibility Study
Clay Helms	MycoWorks Sewer Extension	City of Union	CRCOG	Sewer Extension
Clay Helms	Church St. Waterline Replacement	Town of Central	CRCOG / SRF	Water Upgrade
Clay Helms	Bethany Tank Water Supply Improvements	LCWSC	SC RIA	Water Upgrade
David DePratter	Lockhart Water Project	Town of Lockhart	CRCOG	Water Tank, Water Lines
David DePratter	Infrastructure Project Phase I	Town of Lockhart	CRCOG	Water Lines, Sewer Lines, Stormwater

PROJECT MANAGER	PROJECT	CLIENT	FUNDING ADMINISTRATOR	TYPE
David DePratter	Infrastructure Project Phase II	Town of Lockhart	CRCOG	Water Lines
David DePratter	Infrastructure Project Phase III	Town of Lockhart	CRCOG	Sewer Lines, Stormwater
David DePratter	Infrastructure Project Phase IV	Town of Lockhart	CRCOG	Sewer Lines, Stormwater

EXPERIENCE WITH LOCAL GOVERNMENTS

As the engineering representative for our clients, it is paramount that we are well versed in, and that our work is completed in accordance, with federal state and local regulations. KCI has a long history (over 25 years) of working in South Carolina for various municipalities and SCDOT. This history includes coordination with many government agencies including a sampling below:

- Aiken County
- Anderson County
- Charleston County
- Greenville County
- Pickens County
- Spartanburg County
- Union County
- York County
- City of Abbeville
- City of Anderson
- City of Columbia
- City of Greer
- City of Greenville
- City of Mauldin
- City of Newberry
- City of Pickens
- City of Rock Hill
- City of Seneca
- City of Spartanburg
- City of Union
- City of Woodruff
- Town of Carlisle
- Town of Calhoun Falls
- Town of Central
- Town of Lockhart
- Town of Lyman
- Town of McCormick
- Town of Ware Shoals
- Appalachian COG
- Catawba COG
- Upper Savannah COG
- Charleston Water System
- Easley Combined Utilities
- Gaffney Board of Public Works
- Grand Strand Water & Sewer Authority
- Greenville Water
- Greer CPW
- Inman Campobello Water District
- Laurens County Water & Sewer Commission
- MetroConnects
- Ninety Six Commission of Public Works
- North Charleston Sewer District
- Oconee Joint Regional Sewer Authority
- Renewable Water Resources
- Richland County Utilities
- Saluda County Water & Sewer Authority
- Spartanburg Water
- Summerville CPW
- SC Department of Archives & History
- SC Department of Commerce (CDBG)
- SCDHEC
- SCDNR
- SCDOT
- SC State Historic Preservation Office (SHPO)
- SC RIA
- US Department of Commerce (DOC)
- USDA Rural Development
- FEMA
- FHWA
- NOAA
- US Coast Guard
- US EPA
- USFWS