

REQUEST FOR BOARD ACTION

HENDERSON COUNTY BOARD OF COMMISSIONERS

MEETING DATE: August 5, 2024

SUBJECT: Engineering Services Contract Approval
Jackson Park Feasibility and Engineering Study

PRESENTER: Betsy Gerwig, SWCD Conservation Engineer

ATTACHMENTS: Yes

1. Budget Amendment
2. Qualifications for Robinson Design Engineers
3. Contract with Robinson Design Engineers

SUMMARY OF REQUEST:

The Board is requested to approve the contract with Robinson Design Engineers for the Jackson Park Feasibility and Engineering Study for \$100,000. Selection of the engineering company for this project was approved at the December 4, 2023, meeting. The Board committed to acquire the additional \$50,000 in matching funds to the NC Department of Environmental Quality, Division of Water Resources: Water Resources Development Grant at the February 6, 2023 meeting. The approval of the grant and the budget amendment for Y24 was approved at the October 2, 2023 meeting. The current Budget Amendment moves the funding to Y25.

BOARD ACTION REQUESTED:

The Board is requested to accept the contract with Robinson Design Engineers for the Jackson Park Feasibility and Engineering Study for \$100,000, approve the budget amendment, and direct staff to proceed.

Suggested Motion:

I move the Henderson County Board of Commissioners to accept the contract with Robinson Design Engineers for the Jackson Park Feasibility and Engineering Study for \$100,000, approve the budget amendment, and direct staff to proceed.

Request for Proposals: Engineering Services for Engineering and Feasibility Study of Jackson Park

Prepared for
Henderson County
November 17, 2023

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Background image: construction of bank stabilization along the N.F. Pacolet River, 2018

Cover image: Laurel Green Park creek restoration and floodplain activation, 2023



November 17, 2023

Henderson County Finance Department
Attn: Doug Guffey
113 North Main Street, Hendersonville, NC 28792

**Statement of Qualifications:
Engineering Services for Engineering and Feasibility Study of Jackson Park**

Members of the Selection Committee:

As shown in the following statement of qualifications, our Team possesses the competence and qualifications required to perform this feasibility study. You will not find an equally qualified consultant that has our Team's level of investment into Henderson County. We live, work, and play here.

We are an intentionally small firm, and we have reclaimed the service oriented, professional practice model of engineering consulting. We are debt-free, and we practice rigorous financial protocols to ensure the stability and longevity of our firm.

Most of our Team lives in the county and our office is in downtown Hendersonville. We all use Jackson Park regularly through walking, biking, birding, disc-golfing, and I coach my kids' soccer teams on the frequently flooded fields adjacent to Bat Fork. Our familiarity with the park gives us an advantage, but our Team's record of community service to Henderson County sets us apart. We care deeply about this community and this park. Deceased community leader Luther Smith showed me his masterplan for Jackson Park that was developed and adopted in 1988, and since then bringing this land to its highest and best use for its stakeholders has been a longstanding goal of mine.

This is a hard-working park. Henderson County is already asking a lot of this piece of land, but we want the opportunity to make it better. We will develop pragmatic and efficacious solutions to meet the needs of stakeholders while enhancing the park's ecosystem services. Our Team has a proven record of delivering these types of projects and would be honored to work in our hometown, helping realize the full potential of Jackson Park.

Sincerely,

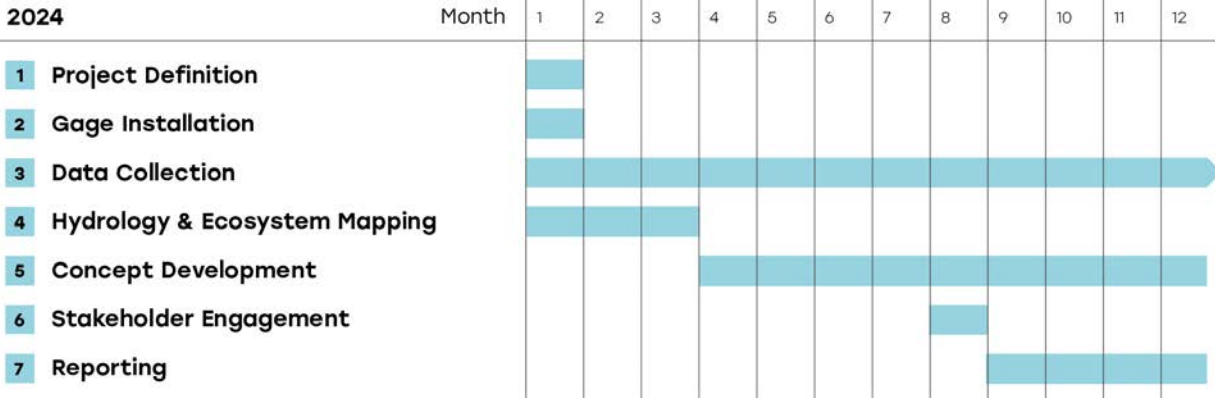
Robinson Design Engineers

A handwritten signature in black ink that reads "Philip Ellis".

Philip Ellis, MS, PE
Principal
pe@robinsondesignengineers.com
(864) 901-1611

Project Approach

Project Schedule



1. Project Definition

Our First Step will build upon our Team’s extensive relationships with County staff, stakeholders, and regulators to understand, jointly establish, and clearly define project goals, expectations, processes, and constraints. We will review project information and schedule a kick-off meeting with key County staf. During this meeting we will establish the project budget and schedule, and determine stakeholder engagement methods. Step One will conclude with a memorandum containing a project summary, targeted outcomes and processes, and a detailed schedule and budget for the data collection, concept development. We will also define the level of detail for the feasibility study final deliverables.

2. Gage Installation

The waterways that flow into and out of Jackson Park are not well understood. Correspondingly, the water levels in the park’s seasonal pools and wetlands are mysterious.

We propose installation of water level gages throughout the park. These gages will be sited and installed to monitor and better-understand how water flows through Jackson Park. We will also request data from the City of Hendersonville (Mike Huffman), USGS, and the National Weather Service, because each of those organizations have water level gages in the vicinity of Jackson Park. We will engage a professional land surveyor to install topographic monuments, tying the new gages and pre-existing gages together onto a single datum – this is the only way to see where water is flowing, and elucidate why it stays or leaves a particular pool.

Deliverables for this step will include a map to each of the gages with instructions for data download and management.

3. Data Collection

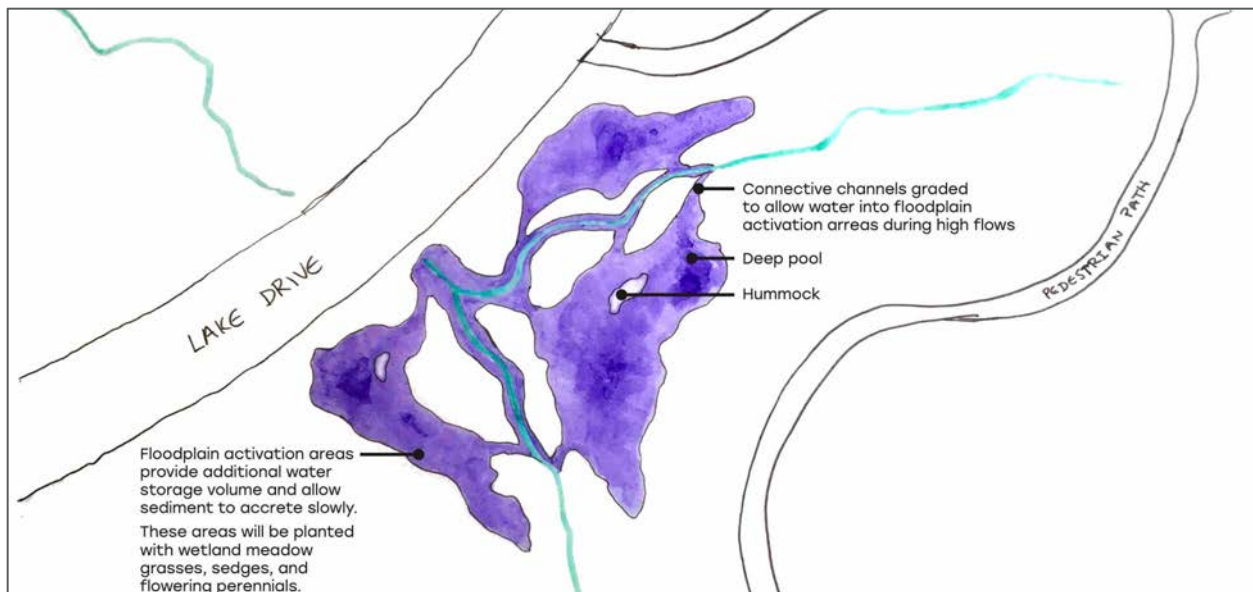
This step will include collection and synthesis of pertinent data sets. We expect these to include ongoing downloads of the water level gages mentioned above, and other information relating to hydrology, hydraulics, topography, ped. / bike / vehicular travel ways, vegetation communities, and land use programming.

We expect to perform multiple site visits and conduct several interviews with stakeholders, such as meeting with HCPR staff (Bruce G. and Jason K.) to understand their recreational programming conflicts.

4. Hydrology & Ecosystem Mapping

The information that we gather through steps two and three will help us parse-out the sources and sinks of the seasonal pools. Presently, it is unclear whether these pools are controlled by Bat Fork, Johnson Ditch, Mud Creek, ground water, or direct rainfall runoff. This kind of hydrology mapping will be the underlying information that we need to develop any concepts.

In addition to hydrology mapping, we will develop a patchwork map of landscape settings and existing ecosystem communities. This layer of information can be minimal, such as defining open water / streams / wetlands, or we can go into detail by interviewing local users (e.g. ecologists and birding groups).



Example Image: concept design for floodplain activation in Biltmore Lake, NC

5. Concept Development

The effort required for this step will be scaled to the budget and level of detail defined during the first step in this approach. This work may require hydraulic modeling to assess the effectiveness of flood reduction concepts – we want to show how each concept will impact park infrastructure, forested areas, and targeted recreational facilities. We will produce several concepts that address each of the problems identified in the RFQ, focusing on potential projects related to:

Stormwater Management Improvements

We can develop a series of maps with potential retrofit sites, their benefits and costs, reference imagery, and expected cost. We have done this for public and private communities, including Givens Estates, Crowfields Condominiums, Biltmore Lake, Seaside Farms, and the City of Hendersonville. Each with different opportunities and constraints.

Stream Restoration & Floodplain Activation

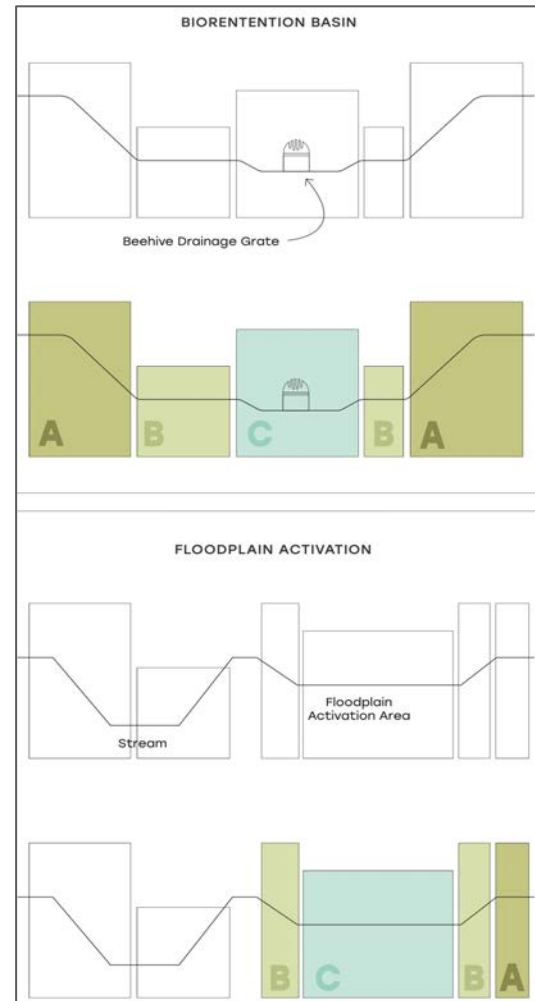
We have conceptualized and designed stream restoration and floodplain activation projects in several public parks in the Carolinas. Depending on the location and expected program of these efforts, trails and public access points could be incorporated into the currently inaccessible portions of the park; a perfect example of this is a recently completed construction site at Laurel Green Park which we conceptualized in a similar feasibility study for the Town of Laurel Park in 2018.

Recreation Opportunities

We know first-hand how difficult it can be to use and service the park amenities during wet seasons and after intense rainfall events. There may be opportunities to re-grade and re-configure some of the fields and trails so that they are serviceable more often. Our aim will be to create concepts that can provide a more resilient and predictable set of fields and trails.

Beaver Management (Water Depth Control):

We are aware of the longstanding and prolific beaver community near Jackson Park. This beaver community has caused nuisance ponding in the past and they are expected to return in the future. The beaver will find their way back to this ideal habitat in Jackson Park and will be an ongoing maintenance concern. Each of our concepts will consider how



Example Image: concept design for planting zones in stormwater retrofits and floodplain activation areas at Crowfields Condos in Asheville, NC

to manage beaver. For example, a water level control device can provide an auxiliary spillway for the areas that should not flood (e.g. soccer fields). Careful planning for the location and design of these devices is necessary, and this feasibility study is the perfect opportunity to perform this planning work. These water level control devices, so-called “beaver deceivers,” are a common flood-reduction-tool used to manage nuisance water levels of beaver impoundments. These devices can be incorporated on the peripheral of beaver-made dams or human-made structures to avoid unwanted flooding, but they must be carefully designed so that they are not immediately clogged by the eager beaver.

Most of RDE’s work intersects with beaver habitat, and sometimes we use this keystone ecological species to our advantage. We have designed and implemented several ecosystem enhancement projects using Beaver Dam Analogues (BDAs). In fact, RDE secured the first permit in North Carolina to build such features on a large scale with water level control devices. Our work with beaver and / or BDA enhancements has included clients from:

- Sunnybrook, Hendersonville, NC
- Givens Estates, Asheville, NC
- Biltmore Lake, Candler, NC
- Mulberry Gap, Madison County, NC
- Springbank Retreat, Kingstree, SC
- Hyatt Park, Columbia, SC



6. Stakeholder Engagement

We think this step is important because there are divergent user groups and land uses in Jackson Park. Using the initial stakeholder input gathered in step 3 (data gathering) and the concepts created in step 5 (concept development), we will meet with county officials to present and garner feedback. This step is to present concepts and their associated costs and benefits to a group of stakeholders. The purpose of these presentations will be to make decisions about which concepts are most desirable.

We have done this several different ways depending on the community: we have led large public meetings and we have led smaller-scale charettes where a designated working group of stakeholders are empowered to make decisions and provide program-related changes to the concepts. However you choose to proceed, we will help you set a list of agreed-upon goals and constraints to find consensus around a pragmatic solution.

7. Reporting

Reporting will include a detailed summary of our work and descriptions of the primary concepts selected by the stakeholders, including graphics of the desirable concepts. Final deliverables could also include pre-design modeling to hone-in on the expected outcomes, regulatory due-diligence, construction cost estimates, or graphics for fund raising campaigns and grant applications. The shape of these final deliverables will largely be decided during step 1 (project definition).

Our Team

Philip Ellis
Paddling the West Fork of the Pigeon River
Haywood County, NC

Team Members

RDE's team offers Henderson County the comprehensive knowledge and proven experience for the services needed along with long-term relationships with stakeholders, regulatory officials, and municipal staff.



Philip Ellis, MS, PE is a professional engineer and seasoned project manager with over 17 years of experience in stream restoration, complex permitting, and hydraulics engineering, especially within urban parks.



Joshua Robinson, MS, PE, is the firm principal with more than 20 years experience with nature-based planning and design projects across the southeast.



Holly Hall, PhD, PE is an ecological engineer and researcher. In addition to her recent PhD in stream restoration, Holly has a deep background in water resources.



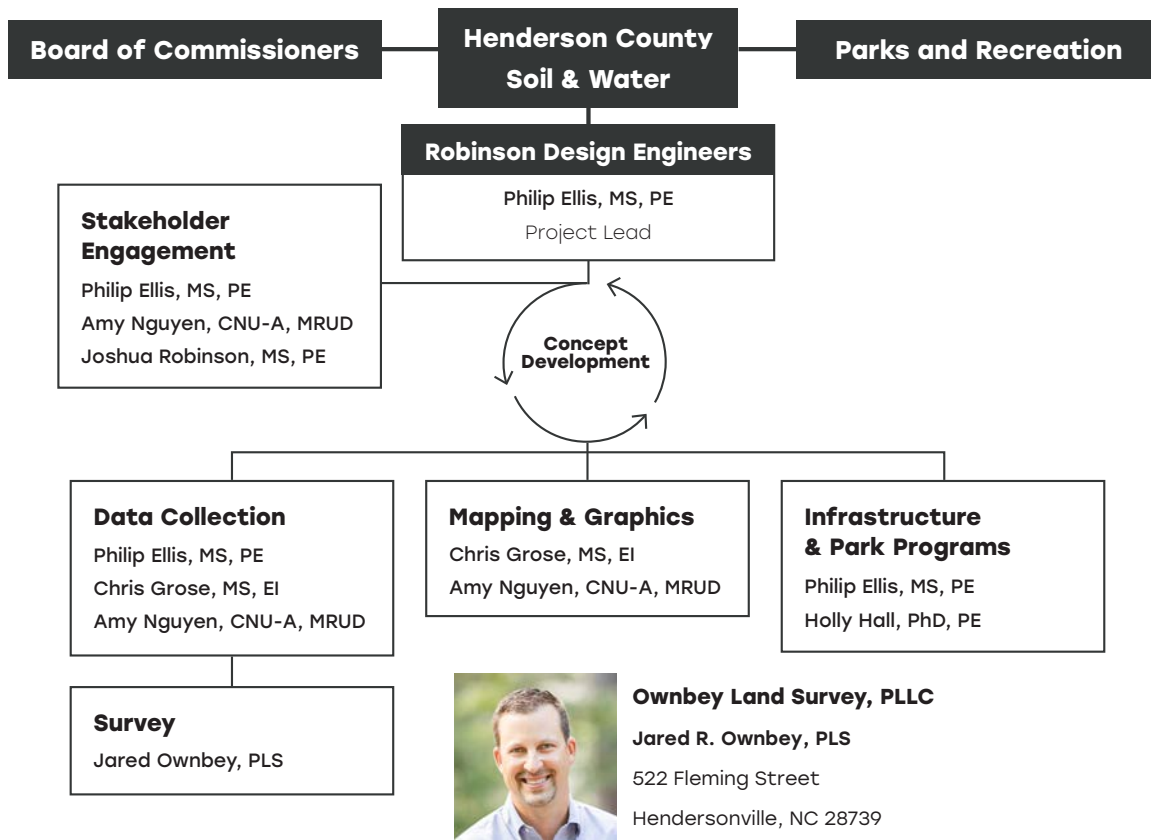
Amy Nguyen, CNU-A, MRUD is an environmental designer and graphic design expert. Amy will create visual aides and provide support for any public engagement activities.



Chris Grose, MS, EI is a biologist and engineer with more than 20 years of experience with restoration, permitting, and has received formal training in Natural Channel Design restoration techniques.



Nolan Williams, MS, PE, is a professional engineer and will provide quality assurance on all deliverables and modeling support.





Philip Ellis, MS, PE

Professional Engineer + Principal Engineer

Philip is a licensed professional engineer offering sixteen years of experience in urban and suburban stormwater assessment and design, watershed planning and modeling, river engineering, and project management. Philip joined Robinson Design Engineers in 2009 following a rigorous hydraulics engineering graduate research assistantship at IHR–Hydroscience & Engineering. Philip is also an accomplished whitewater paddler and has spent over 7,000 hours exploring waterways of the Southeast, fostering a deep and intuitive knowledge of flowing water and its power. These accomplishments make Philip especially adept at field-based assessments, possessing a rare combination of fundamental hydraulics knowledge, pragmatic fieldwork know-how, and modeling expertise.

Philip’s life experience and technical expertise make him uniquely qualified as a hydrology and hydraulics engineer. He is a seasoned modeler, having used a variety of rainfall-runoff software and multi-dimensional hydraulic models. In addition, he has comprehensive experience with field hydrology data collection and stream instrumentation, often in service to calibrating and validating engineering models. In addition to his deep understanding of hydrology, hydraulics, and geomorphology, Philip also offers depth of experience with permitting, bidding, and construction. He has overseen numerous stormwater and roadway construction projects and is especially skilled at keeping projects on-schedule and on-budget, even in the face of unexpected weather events and field changes.

Education

MS in Civil Engineering
(Environmental Hydraulics),
University of Iowa

BS in Civil & Environmental
Engineering, The Citadel

Licensure

Professional Engineer: NC
No. 39870

Professional Affiliations

American Society of Civil
Engineers

American Ecological
Engineering Society

ASCE Stream Restoration
Technical Committee

Community Service

Henderson County
Greenway Masterplanning
Committee

Henderson County Parks
and Recreation Advisory
Board

Henderson County
Environmental Advisory
Committee

City of Hendersonville
Alternate Design
Committee

City of Hendersonville Parks
and Greenspace Committee

Selected Project Experience

Biltmore Lake Watershed Masterplanning & Implementation – Asheville, NC

Hyatt Park Creek Daylighting, Columbia, SC

Laurel Green Floodplain Activation, Laurel Park, NC

Sunnybrook Bank Rehabilitation, Hendersonville, NC

Primrose Dr. Bank Rehabilitation, Laurel Park, NC

Rocky Fork Stream and Embankment Rehabilitation, Mills River, NC

Laurel Park Watershed Study, Laurel Park, NC

Givens Estates Stormwater Grants, Asheville, NC

Smith Branch Restoration, Columbia, SC

N.F. Pacolet River Restoration, Tryon, NC 2015–2019

Highlands Biological Station Lake Restoration, Highlands, NC



Joshua Robinson, MS, PE

Professional Engineer + Principal Engineer

Joshua is a licensed professional engineer with twenty years of experience in analyses, planning, design, and implementation of natural resources and living infrastructure engineering projects across the Southeast. After contributing to urban creek restoration efforts in Atlanta, Charlotte, and Knoxville, Joshua founded Robinson Design Engineers in 2008 to provide ecologically-based engineering analyses and design for low impact development projects and to integrate ecosystem restoration into urban and rural communities.

Joshua also serves as adjunct faculty at the College of Charleston's environmental geosciences department and marine biology department, where he teaches on watershed hydrology and advises graduate students on research projects involving tidal hydrology, rainfall hydrology, water quality, and ecosystem restoration. Joshua was recently an instructor in NOAA's "Nature-Based Infrastructure for Coastal Hazards" training workshop, and Clemson's Coastal Low Impact Development workshop series.

Education

MS in Civil Engineering
(Environmental Hydraulics),
Georgia Tech

BS in Civil & Environmental
Engineering, The Citadel

Licensure

Professional Engineer:
SC, NC

Professional Affiliations

American Society of Civil
Engineers

American Ecological
Engineering Society

Community Service

ASCE Stream Restoration
Technical Committee

Selected Trainings

River Course 101: Stream
Morphology Assessment, NC
State Univ.

River Course 201: Natural
Channel Design Principles,
NC State Univ.

River Course 401:
Construction Practices for
Stream Restoration, NC
State Univ.

Selected Project Experience

Angel Oak Preserve, Johns Island, SC

Ashleyville Marsh Restoration Project, Charleston, SC

Smith Branch Watershed Plan, Columbia, SC

Smith Branch Daylighting Project at Page Ellington Park, Columbia, SC

Hyatt Park Creek Daylighting Project, Columbia, SC

Chestnut Bay Park, Nature-Based Solutions to Flooding, Conway, SC

Turkey Creek Rehabilitation Project, Sumter, SC

Givens Estates Stormwater Master planning & Implementation, Asheville, NC

Third Creek Restoration, Knoxville, TN 2006

Kings Creek Restoration, Brevard, NC 2005

Highlands Biological Station Lake Restoration, Highlands, NC



Holly Yaryan Hall, PhD, PE Hydrologist + Engineer

Holly Yaryan Hall is a Senior Engineer with Robinson Design Engineers and an Assistant Research Scientist at the University of Georgia with 19 years of experience in civil, transportation, hydraulic, and water resources engineering in the public and private sectors. She holds degrees from the University of Georgia, Colorado State University, University of South Carolina, and Princeton University. Holly's consulting experience includes multifunctional natural infrastructure, ecological restoration, floodplain, transportation, and stormwater projects. She previously worked with the Ohio Department of Transportation, beginning with district in-house design and later joining the ODOT Office of Hydraulic Engineering, where her responsibilities included statewide policy, plan review, training, and research oversight. In addition, she has 5 years of experience as a classroom teacher. As a researcher, practitioner, and educator, Holly believes the science and practice of nature-based solutions can be advanced, and she wants to contribute both in developing better approaches and applying them in practical and equitable ways. Her primary research interests include fluvial geomorphology, aquatic ecosystem restoration, urban streams, and environmental equity in addition to practitioner partnerships and training.

Education

PhD in Engineering
(Environment & Water)
University of Georgia

ME in Civil Engineering
(Water Resources
Engineering) Colorado State
University

MAT in Elementary Education
University of South Carolina

BSE in Civil Engineering
& Operations Research
Princeton University

Licensure

Professional Engineer: OH

Professional Affiliations

American Society of Civil
Engineers

American Ecological
Engineering Society

Selected Project Experience

Dingle Creek Culvert Replacement Project, private client, Asheville, NC

Compound Flooding Functions Research Project, South Carolina Sea Grant

Ashleyville Marsh Restoration, NOAA NFWF project, Charleston, SC

Laundry Creek Stream Restoration, Fort Moore, GA

Design Tools for Channel Stability at Stream Crossings Workshop, NCHRP

Alternative Stream Channel Maintenance at Bridge Crossings, Ohio DOT

Yaryan Hall, H., and B. Bledsoe. Integrating Channel Design and Assessment Methods Based on Sediment Transport Capacity in Gravel Bed Streams. 2023. Journal of the American Water Resources Association.

Yaryan Hall, H. Innovative Approaches to Urban Riverscape Planning and Design. 2022. University of Georgia.



Amy Nguyen, CNU-A, MRUD **Hydrologist + Designer**

Amy is an urban designer and hydrologist with experience working at the intersection of planning, design, and environmental stewardship. As an urban designer, Amy offers skills in strategic planning, demographic research, and spatial analysis using geographic information systems (GIS). She also possesses a strong foundation in the study of geological and hydrological processes. Amy is especially skilled with data visualization and reporting, thoughtfully communicating site analysis, design concepts, and data analysis to a wide range of audiences.

Amy has demonstrated skill and knowledge in community-centered design processes, flood risk analysis, and nature-based infrastructure through her collaboration with the City of Charleston to study design alternatives to the proposed Army Corps flood wall. Amy began working with RDE as a result of this experience, and spends her time at RDE doing mapping, data analysis and visualization, concept design, and field work.

Education

Master of Resilient Urban Design, Clemson University, South Carolina

BS, Geology, Clemson University, South Carolina

Honors and Awards

Charleston AIA, Parklet Design Competition, Student HONOR Award Winner 2021

Designing Our History: An International Ideas Competition, HONOR Award Winner 2021

Professional Affiliations

Congress of New Urbanism

Professional Experience

Riley Mayors' Design Fellowship Intern, 2020-2021

Keeping History Above Water (KHAW) Intern, Spring-Summer 2021

Selected Project Experience

Laurel Green Park Stream Restoration - Laurel Park, NC

Crowfields Resiliency Projects - Asheville, NC

Nature-Based Exchange - Charleston, SC

Goose Pond Mitigation Bank - Conway, SC

Morrison Yard - Charleston, SC

Georgetown Living Shoreline - Georgetown, SC

Deweese Island Water Management Study - Charleston County, SC

Scanlonville Heritage Park Design - Mount Pleasant, SC

Parklet Design Guidelines for the City of Charleston - Charleston, SC



Chris Grose, MS, EIT

Hydrologist + Engineer-in-Training

Chris offers a diverse background in water resources management with over 20 years of experience in environmental consulting, engineering hydrology, and science education. Chris is trained as an environmental scientist, civil engineer, and educator, providing a wealth of knowledge in environmental permitting, ecological restoration, field data collection, monitoring, and reporting. In particular, Chris offers in-depth knowledge of cost-effective GIS mapping and he is well-versed in managing large data sets for a variety of clients.

In graduate school, Chris studied runoff-based nutrient loading due to land use/cover for calibration of the Watershed Analysis Risk Management Framework (WARMF) model to use in TMDL development in the Catawba River basin. Since then, he has worked in association with federal, state, and local government officials as well as representatives from the private sector. He has performed field assessments for jurisdictional wetland/waterway delineations, ecological site assessments for the presence of protected species and/or potential habitats, and assessments of stream and riparian systems for restoration design work. Chris is also experienced with stream restoration design, stream restoration construction administration, field work, and technical report writing for regulatory compliance.

Education

BS, Civil Engineering,
University of North Dakota

MS, Public Health in
Environmental Health
Sciences, University of
South Carolina

BS, Biology, Wofford
College, South Carolina

Licensure

NC Engineer-in-Training

Selected Trainings

Stream Restoration
Implementation and
Evaluation, NC State
University (2007)

Construction Practices for
Stream Restoration, NC
State University (2007)

Total Station Applications
for Stream Restoration, NC
State University (2008)

River Restoration and
Natural Channel Design,
Wildland Hydrology (2005)

Applied Fluvial
Geomorphology, Wildland
Hydrology (2004)

River Morphology and
Applications, Wildland
Hydrology (2004)

Selected Project Experience

Biltmore Lake Watershed Masterplanning & Implementation – Asheville, NC

Highlands Biological Station Lake Restoration – Highlands, NC

Laurel Park Watershed Study – Laurel Park, NC

Laurel Green Creek Restoration Plan – Laurel Park, NC

Givens Estates Stormwater Masterplanning, Implementation, and Long-term Assessment – Asheville, NC

Rhododendron Park Creek Restoration – Laurel Park, NC

Smith Branch Daylighting & Restoration – Columbia, SC

Martin Luther King, Jr. Park, Creek Restoration – Columbia, SC

Perez-Oceola Stream Bank Rehabilitation – Hendersonville, NC

Mulberry Gap Stream Restoration – Madison County, NC

Clemson Park Stormwater Design – Clemson, SC

Hyatt Park Creek Daylighting Project – Columbia, SC



Nolan Williams, MS, PE

Professional Engineer + Hydrologist

Nolan is a hydrologist and licensed professional engineer with over 7 years of experience in the fields of environmental hydrology, engineering design, computational modeling, and data science. Nolan began working with Robinson Design Engineers as an intern while studying civil and environmental engineering at Georgia Tech and joined RDE full-time in their Charleston, SC office after graduating in 2017. While continuing to work for RDE, Nolan also completed a master's degree in Data Analytics from Georgia Tech, where his graduate research focused on developing stochastic simulation methods for characterizing the mechanics of compound flooding in coastal watersheds.

In his role as a consulting hydrologist and engineer, Nolan has contributed to a variety of projects across the Carolinas and has performed large-scale hydrologic and hydraulic analyses, field data collection, hydrologic and geomorphic assessment, stormwater management and green infrastructure design, and engineering nature-based solutions for ecosystem restoration and flood mitigation. Nolan also has several years' experience performing construction administration and serving as a project manager in service to large property owners associations and municipalities in Coastal South Carolina.

Education

BS in Civil Engineering
(Water & Environmental
Systems), Georgia Tech

MS in Analytics (Analytical
Tools), Georgia Tech

Licensure

Professional Engineer: SC
No. 39429

Professional Affiliations

American Society of Civil
Engineers

American Ecological
Engineering Society

Selected Project Experience

Wakendaw Lake Study – Mt. Pleasant, SC

Moody's Plantation Study & Construction Cost Estimates – Summerville, SC

Dewees Island Water Management Study – Charleston County, SC

Nature-based Flood Mitigation – Conway, SC

Conway Hydrology & Hydraulics Study – Conway, SC

Halidon Hill Mitigation Bank – Berkeley County, SC

Smith Branch Daylighting & Restoration – Columbia, SC

City of Charleston Storm Surge Barrier – Charleston, SC

Cooper River Salt Marsh Restoration – Goose Creek, SC

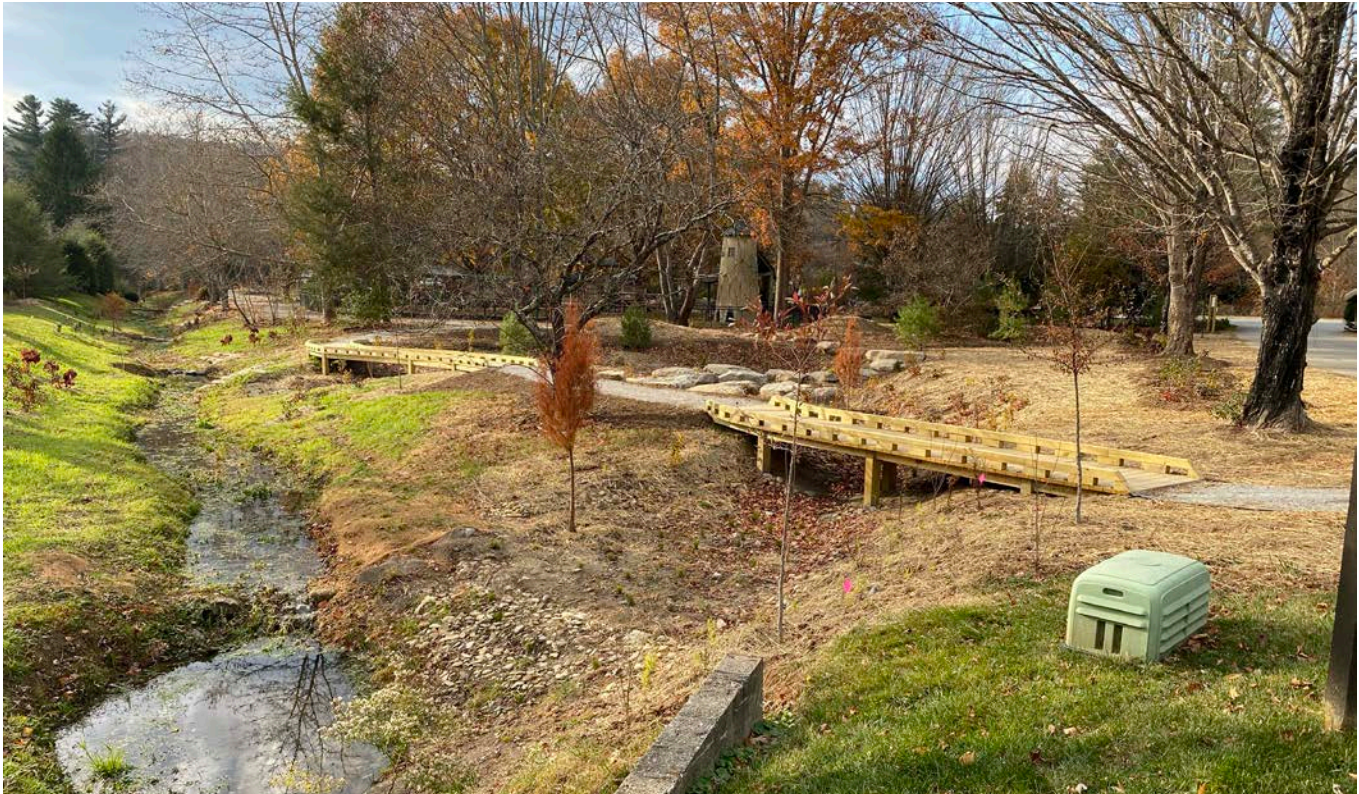
Crosstowne Christian Church Hydrology Study – Charleston, SC

Sunset Country Club Flooding Analysis – Sumter, SC

Carter Stillely Mitigation Bank Hydraulic Analyses – Longs, SC

Project Experience

Image: Mud Creek in Jackson Park



Project Highlights

Construction completed in 2023

800 feet of urban streambank stabilization

Urban hydrology modeling

Watershed Plan

RDE facilitated a Town Council workshop and stakeholder planning events

Reference

Alex Carmichael
Town Manager
Town of Laurel Park, NC
Phone: 828.693.4840

Laurel Green Park Creek & Floodplain Restoration

Town of Laurel Park, North Carolina

The Laurel Park Watershed Improvement Study provides the Town with recommendations for slowing and lengthening the flow of stormwater. These recommendations are broad, focusing on what proven solutions might look like in the Laurel Park context. Not only does this watershed study provide guidance for future planning; it also provides a vision and a road map that is useful for grant applications to fund individual projects. This document was designed to live “off the shelf” to inspire and cultivate the next generation of watershed stewards.

Most recently, RDE worked with the Town of Laurel Park to restore 800 linear feet of urban creek that flows through the central Town-owned park space. The step-pool creek was historically channelized and straightened to control flooding, and has been a constant maintenance concern for the Town. RDE has performed hydrologic and hydraulic analyses, in-stream flow measurements and model calibration, and conceptual design of creek restoration. The design includes floodplain activation areas, bank grading, in-channel structures, riparian vegetation, and designated areas for park users to interact with the creek directly. The cost-effective approach includes minimizing impacts to existing trees and limiting the use of heavy equipment in the creek—allowing the Town to accomplish much of the work in-house. The Watershed Plan thus seeks to repair hydromodification, whereas the instream work seeks to catalyze natural forces toward channel self-repair as the watershed heals.



LAUREL GREEN CREEK RESTORATION PROJECT OBJECTIVES INCLUDE:

- Channel stabilization
- Establish native riparian habitat
- Slow down water from rainfall runoff

RESTORATION FEATURES : ① IN-STREAM RESTORATION ② FLOODPLAIN ACTIVATION ③ STORMWATER GARDENS

NEW AMENITY FEATURES : ④ TRAILS AND PATHWAYS ⑤ BIKE INFRASTRUCTURE ⑥ CREEK ACCESS POINTS ⑦ PLAY MOUNDS ⑧ VIEW POINTS

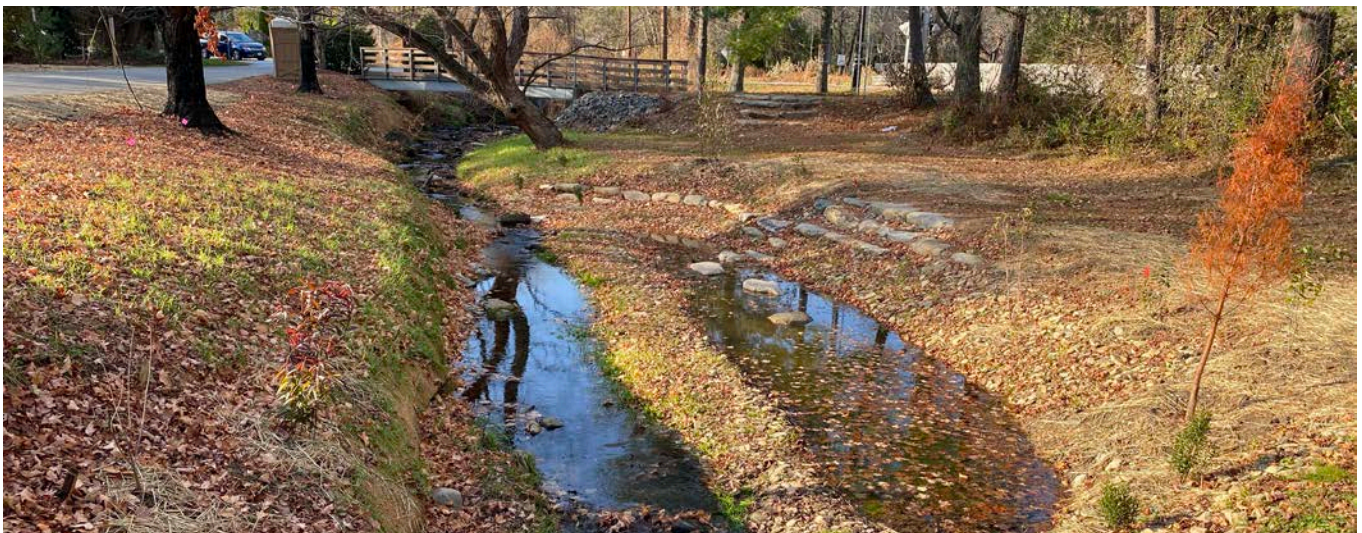


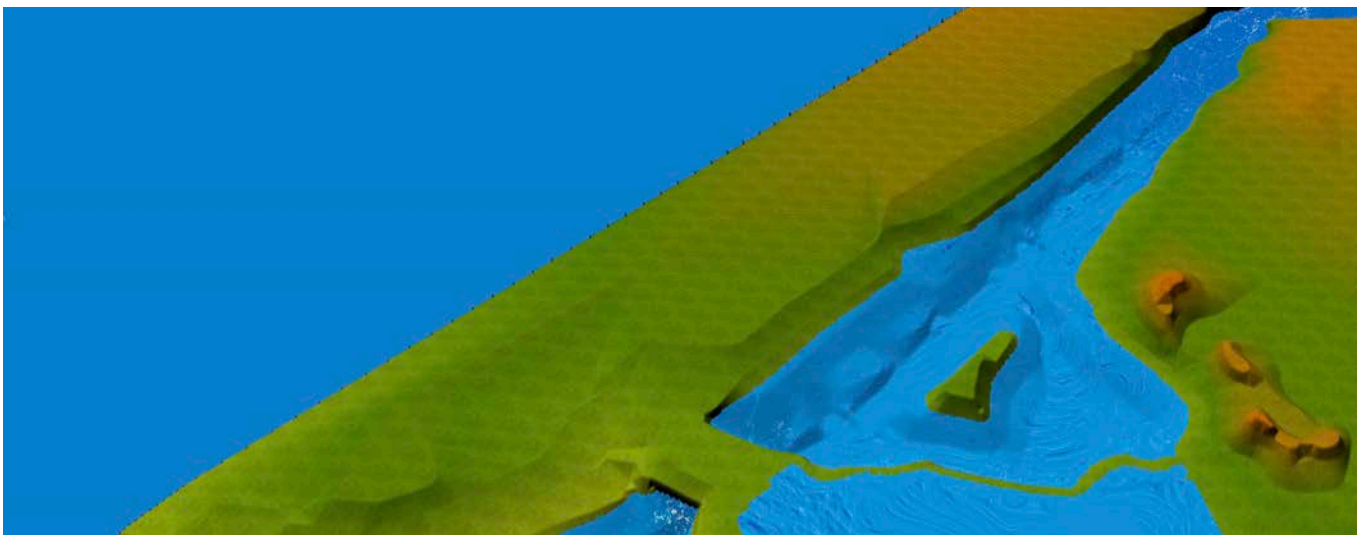
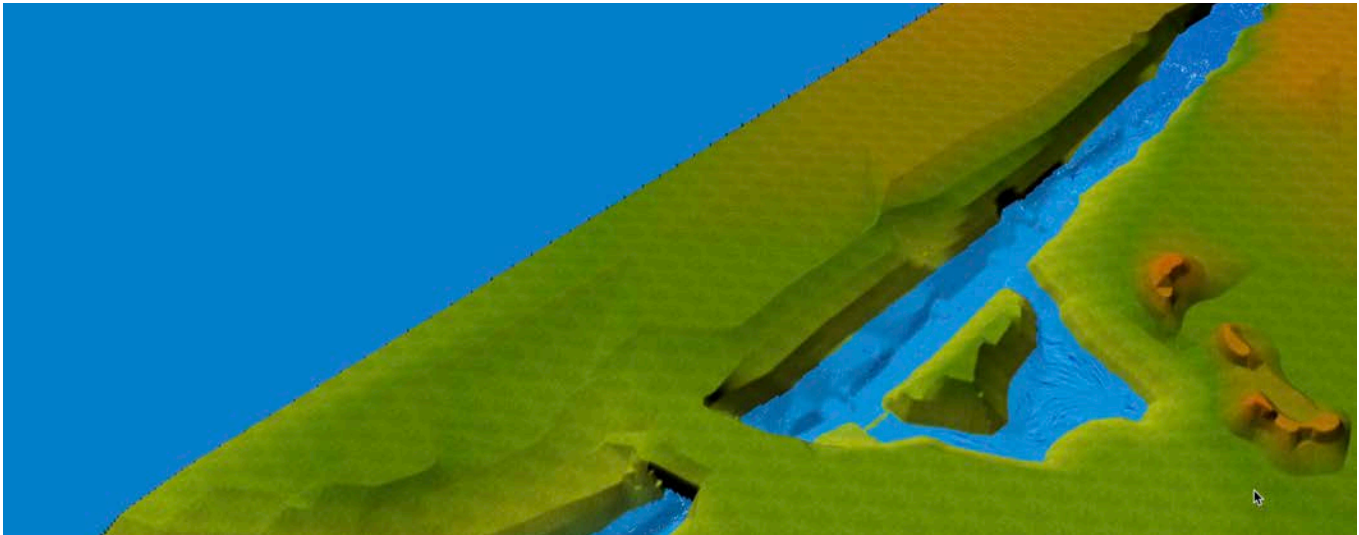
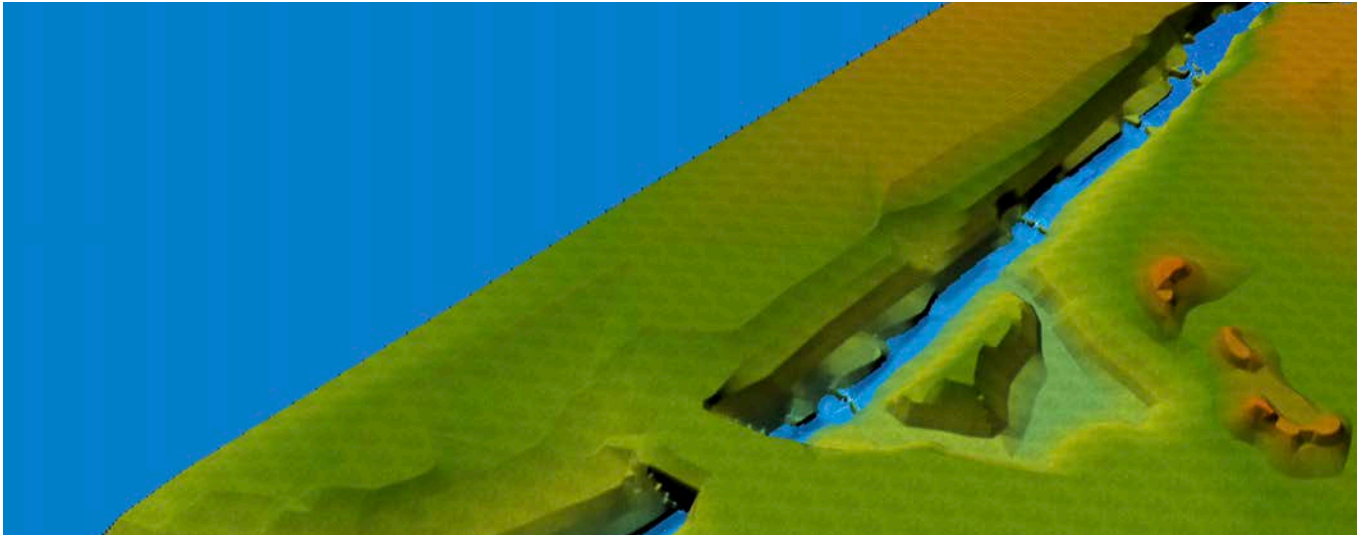
Cover image: Photo showcasing floodplain activation, pedestrian boardwalk, stream restoration efforts in the fall of 2023.

Top: Park masterplan signage designed by RDE.

Middle: Pre-construction conditions showing eroded creek banks and leaky sewer laterals.

Bottom: Floodplain activation area along Wash Creek, picture taken shortly after construction.





Top, middle, bottom images: Modeling of low, mid, and high flow levels for proposed design conditions. This is a zoom in of one of four floodplain activation areas incorporated into this project.



Project Highlights

Completed in 2021

Urban creek daylighting

Partnered with large MS4
(City of Columbia)

Conceptualized stormwater
control measures throughout a
City Park

Regulatory coordination
through 401/404 Process

Reference

W. Todd Martin, PLA, SITES AP
City of Columbia Parks &
Recreation
1111 Recreation Drive,
Columbia, SC 29203
Phone: 803.545.4395

Hyatt Park Renovation

City of Columbia, South Carolina

In 2019, the City of Columbia selected Robinson Design Engineers as part of a design team to renovate the historic 11-acre Hyatt Park in downtown Columbia. RDE is responsible for the design of roughly 1,500 linear feet of restoration of an unnamed tributary to Smith Branch, including 1,000 feet of daylighting the stream from a concrete culvert.

This project is especially exciting because it is one of the water quality improvements that RDE identified several years prior as part of the Smith Branch Watershed Plan. This watershed plan supported the EPA 319 grant application that provided funding for the park and guided the expenditure of the City of Columbia's stormwater fees. Hyatt Park is a great success story of combing local, state, and federal funding sources to create a functional landscape system within a derelict city park.

In place of an eroding, muddy valley bottom and leaky storm sewers, the park is now bisected by a beautiful riparian corridor filled with native plant species and flowing water that attracts birds and beneficial insects and reptiles. The park also offers nature-based play and opportunities to enjoy a natural setting in an otherwise urban area.



Cover image: Portion of the daylighted stream after construction showcasing the newly planted live stakes.

Top left: New park signage during the grand opening.

Top right: Plant plugs and live stakes planted.

Bottom: Photo during mid-construction of the daylighted stream showcasing areas of expansion and other areas of narrow flow.



Project Highlights

New 20-acre city park

Completed in 2021

2,000 feet of urban creek restoration

Urban hydrology modeling and calibration

Complex, multi-year permitting with FEMA, 401/404, SWPPP, for large-scale restoration and construction

Nature-based constructed wetlands part of the masterplan

Reference

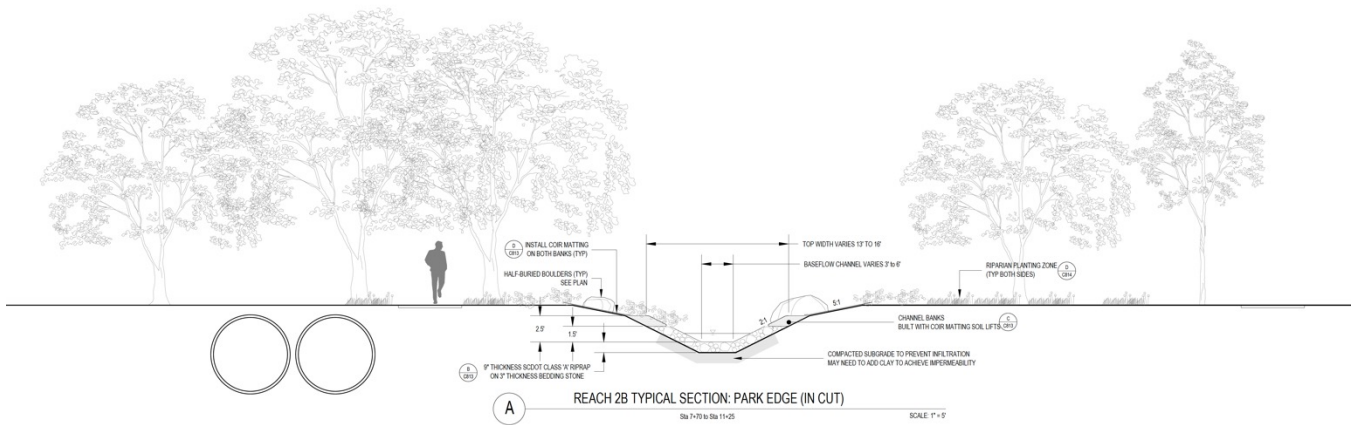
Gregory Tucker
City of Columbia Special
Projects Administrator
Phone: 803.545.4309

Page Ellington Park at Bull Street City of Columbia, South Carolina

From 2014 to 2021, RDE provided the City of Columbia with watershed planning, stream assessment, hydrology data collection, hydraulic analyses, regulatory coordination, and engineering design for the new, 20-acre Page Ellington Park with the Bull Street Redevelopment Project.

The highlight of the park is the restoration of Smith Branch—approximately 2,000 linear feet of urban creek channel was brought to the surface after being contained underground within double 84” concrete culverts since at the least the 1950’s. RDE also designed a wet pond system and a constructed stormwater wetland to capture stormwater runoff from the park and adjacent development. The project design required extensive coordination with FEMA, the US Army Corps of Engineers, and the City of Columbia to mutually satisfy local, state, and federal regulations for work in the floodplain and wetlands. RDE shepherded the project design for more than 7 years, and recently completed the final step in the post-construction project monitoring.

RDE led the construction administration of multiple phases of construction including creek bank stabilization, design and construction of two large hydraulic structures, grading and planting of over 10 acres of fields, and daylighting of the creek channel itself. Notably, the final design and construction of the project occurred in the midst of the record-breaking flooding events of 2015 through 2018.



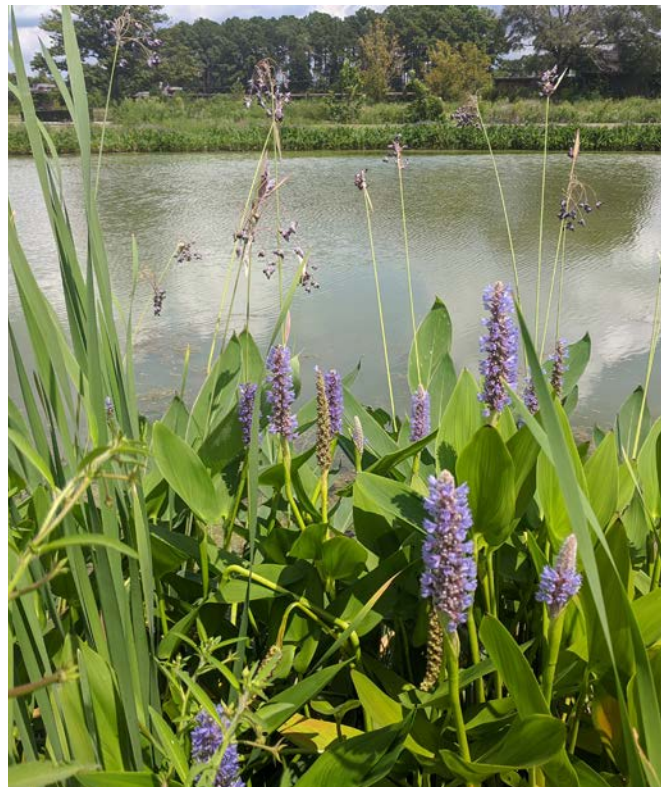
Cover image: Photo showcasing a floodplain wetland 2 years after construction.

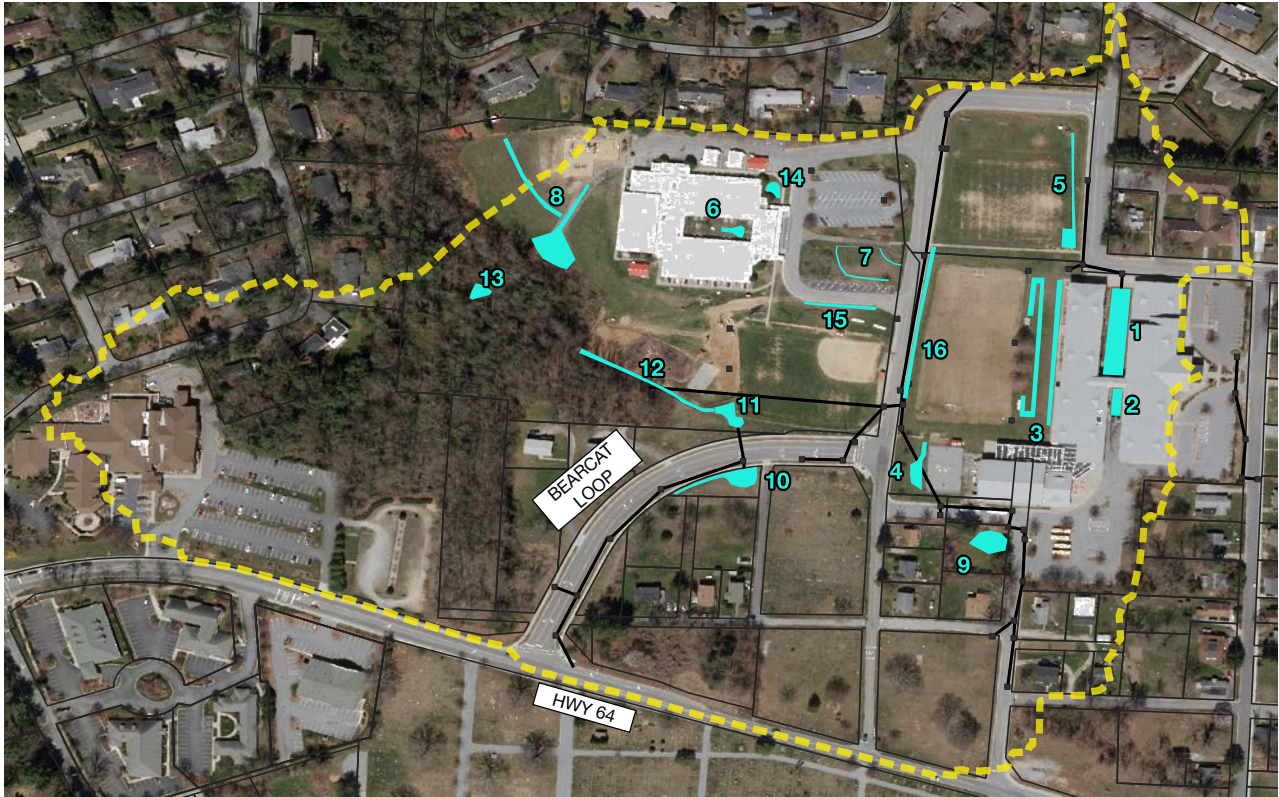
Top image: Engineering drawings of new creek channel.

Middle: Hydraulic structure after construction with geo-lifts for bank stabilization.

Bottom left: Hydraulic structure in construction in 2018.

Bottom right: Floodplain wetland right after construction.





Project Highlights

- Small WNC municipality
- Multiple stakeholders
- Consensus building
- Bank erosion addressed with watershed projects

Reference

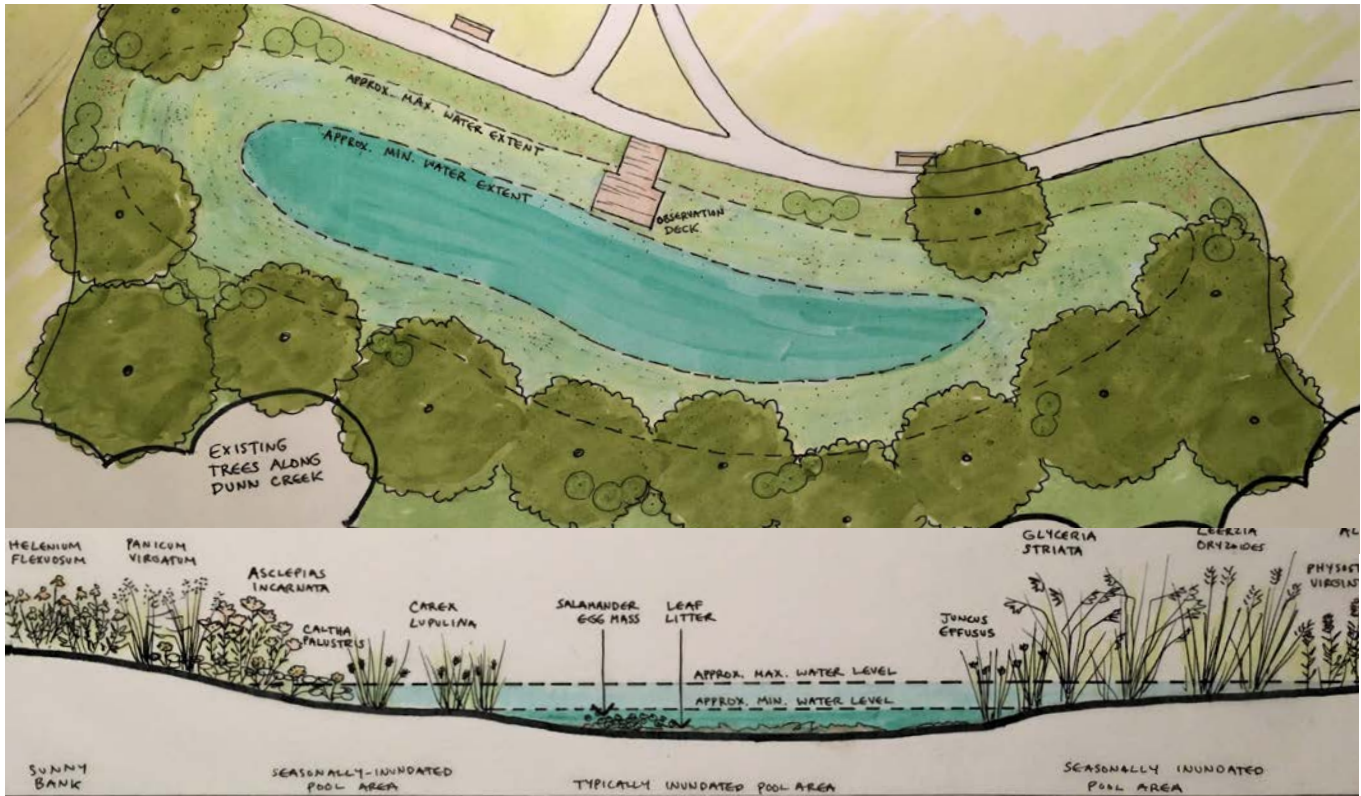
Michael Huffman
City of Hendersonville
Stormwater Administrator
mhuffman@hvlnc.gov
Office: 828.697.3013
Cell: 828.458.5693

Hendersonville Schools Stormwater Control Measure Feasibility & Concept Design

Hendersonville, NC

RDE worked with the City of Hendersonville to determine the feasibility of implementing Stormwater Control Measures (SCM) across a dual campus watershed. This tremendous opportunity for environmental education, water quality improvement, and hydrologic restoration is in the headwaters of the Britton Creek watershed. The goal of RDE efforts were to gain consensus between stakeholders and create a guiding document and conceptual masterplan for SCMs on the campus of Hendersonville Elementary & Hendersonville Middle schools.

This initial study is being used to guide future implementation projects. We developed consensus around the concepts among a diverse set of City and County stakeholders by presenting a series of maps and diagrams that identify potential SCM locations, tables and matrices that quantify the various opportunities and constraints associated with each SCM, conceptual details and imagery to communicate the design intent and aesthetic quality of each feature. These deliverables are being used by the City of Hendersonville to pursue various grant funding opportunities for implementation of the dual-campus masterplan.



Project Highlights

Rapid, low-cost design and construction

Nature-based design in a residential setting

Planting design

Reference

Andrew Ward
 Chief Operating Officer
 at Simple Life
 award@simple-life.com

The Hamlet Vernal Pool

Flat Rock, NC

RDE provided concept design, plant selection, and construction administration for creation of a vernal pool at The Hamlet, a tiny home community in Flat Rock. Vernal pools are wetland features that experience seasonal drying and shallow flooding that prevents establishment of fish populations, making them critical breeding areas for amphibians predated by fish. Some amphibian species - such as spotted salamanders, marbled salamanders, and wood frogs - must migrate to a vernal pool each spring in order to breed, but many of these pools are lost to development.

This vernal pool project was made possible by a conscientious neighborhood developer, who wanted a trail system that allowed residents to enjoy nearby natural features. The pool will change with the seasons and become an even more interesting stop on the trail as the plants mature and amphibians, birds, and insects find their way to this habitat.



Project Highlights

Inspection of large stormwater system

As-built close-out

Reference

Brendan Shanahan, PE, CFM
Civil Engineer
City of Hendersonville
bshanahan@hvlnc.gov
Phone: 828.674.0697

Oklawaha Village Stormwater Design and Implementation Hendersonville, NC

RDE designed, permitted, and performed as-built close-out services for this recently constructed mixed-use development. The first of its kind in Hendersonville, this residential development was designed as a multiphase, shared stormwater system – the single family homes and the City Streets were constructed first, then the multifamily section was constructed later during phase 2 of the development.

This project included erosion control planning and conventional water, sewer, and stormwater infrastructure with a distributed network of treatment cells (bio-retention and stormwater wetlands) to improve water quality and meet the standards required by the City of Hendersonville and NCDEQ.

RDE performed weekly construction inspections, reviewed and approved field-changes, and ensured that the project was compliant with various as-built checklists, as required by the municipality.

Appendix

SOQ Checklist

The RFQ listed specific requirements. This section provides a checklist and location key for each of those requirements.

Project Team 25%

- Firm's program of services:
This is described throughout the SOQ. We offer planning and design services related stormwater, flooding, and ecosystem restoration.
- Firm's description of its financial viability:
This is described in the cover letter, second paragraph.
- Key staff members and their availability to perform the work:
Chris, Amy, and Holly can set aside 30% availability.
- Project Team flow chart with relevant qualifications:
Team organization and flow of work is depicted on page 9.
- Project lead and their availability:
Philip can set aside 30% - 80% availability, as-required.

Project Experience 25%

- Experience with comparable projects:
This is described throughout the Approach section (pg 4-7), and similar project experience is shown on pages 16-26.
- Experience with local state and federal government:
All of our work requires coordination with local, state, and federal regulators, and we have pre-existing relationships with many of the stakeholders for this project.
- References:
These are provided in the project experience section (pg 17-26).

Project Approach 25%: See pages 4-7

Project Schedule 25%: See page 4.

Other Requirements:

- Our W9 is included in the appendix.
- Insurance requirements are met and an example COI is included in the appendix.
- Hourly rate schedule is included in the appendix.
- Vendor form is included in the appendix.

Attachment I: Vendor Information Form

Company/Firm Name			
Firm Name: Robinson Design Engineers		Legal Name: J.L. Robinson, Inc.	
Mailing Address			
131 3rd Avenue West, Hendersonville, NC 28792 // 10 Daniel Street, Charleston, SC 29507			
Contact Name		Contact Title	
Philip Ellis		Principal	
Phone Number		Fax	
(864) 901-1611			
Federal Tax ID Number		Unique Entity Identification Number (SAM.gov)	
26-3362434			
Required Documentation			
Completed IRS W-9 form dated within calendar year and signed by authorized personnel.		Internal Routing	
		W9 Received	
		YES	
Minority and Women Owned Business (MWBE) certification, if applicable:		MWBE Certification Received	
		YES	
		N/A	
Unique Entity Identification Number confirmed in SAM.gov		Unique Entity Identification Number confirmed in SAM.gov	
		YES	

Request for Taxpayer Identification Number and Certification

**Give Form to the
requester. Do not
send to the IRS.**

▶ Go to www.irs.gov/FormW9 for instructions and the latest information.

Print or type.
See Specific Instructions on page 3.

	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank. J. L. Robinson Inc.	
	2 Business name/disregarded entity name, if different from above Robinson Design Engineers	
	3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes. <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> C Corporation <input checked="" type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____ Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner. <input type="checkbox"/> Other (see instructions) ▶ _____	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <i>(Applies to accounts maintained outside the U.S.)</i>
	5 Address (number, street, and apt. or suite no.) See instructions. 10 Daniel Street	Requester's name and address (optional)
	6 City, state, and ZIP code Charleston, SC 29407	
	7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number										
or										
Employer identification number										
2	6		-	3	3	6	2	4	3	4

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	Signature of U.S. person ▶	Date ▶ January 1, 2023
------------------	----------------------------	------------------------

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
 - Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
 - Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
 - Form 1099-S (proceeds from real estate transactions)
 - Form 1099-K (merchant card and third party network transactions)
 - Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
 - Form 1099-C (canceled debt)
 - Form 1099-A (acquisition or abandonment of secured property)
- Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

11/15/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER ASSUREDPARTNERS OF NC LLC CL HANOVER CSC/ STE 350 4505 FALLS OF NEUSE RD RALEIGH NC 27609	CONTACT NAME: PHONE (A/C No. Ext): (844) 367-7899	FAX (A/C No): (866) 828-2424	
	E-MAIL ADDRESS: Certificate@Hanover.com		
INSURED J L ROBINSON INC ROBINSON DESIGN ENGINEERS 10 DANIEL ST CHARLESTON SC 29407	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A : Hanover Insurance Co		22292
	INSURER B : Allmerican Financial Alliance		10212
	INSURER C :		
	INSURER E :		

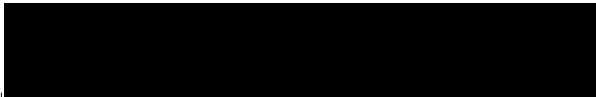
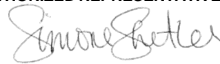
COVERAGES**CERTIFICATE NUMBER:****REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	N	N	RH6 D008231 04	08/06/2023	08/06/2024	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ INCLUDED \$
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY	N	N	RH6 D008231 04	08/06/2023	08/06/2024	COMBINED SINGLE LIMIT (Ea accident) \$ INCLUDED BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	N	WK6 D789159 04	05/22/2023	05/22/2024	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Architects & Engineers Prof Liab	N	N	LH6 H008192 05	08/06/2023	08/06/2024	Claims-Made: \$1M Ea Claim/\$2M Agg

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER**CANCELLATION**

	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 

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2024 HOURLY RATE SCHEDULE

Senior Engineer	\$175
Professional Engineer	\$160
Hydrologist / EI	\$130
Designer	\$105
Admin / Intern	\$70

2023 HOURLY RATE SCHEDULE

Senior Engineer	\$160
Professional Engineer	\$150
Hydrologist / EI	\$120
Designer	\$90
Admin / Intern	\$60

131 Third Avenue West
Hendersonville, NC 28792
robinsondesignengineers.com



June 11, 2024

Betsy Gerwig, PE
Conservation Engineer
Henderson Soil & Water Conservation District
61 Triple Springs Road Hendersonville, NC 28792

Subject: Budget Request for Hydrology Study of Jackson Park

Betsy,

Thank you for selecting RDE to perform the Engineering and Feasibility Study of Jackson Park. This budget request builds upon our Statement of Qualifications (SOQ) dated November 17, 2023. The “Project Approach” section of our SOQ contains seven steps proposed to occur over a twelve-month schedule. Since RDE’s selection to perform this work and the during our recent meeting on May 22, 2024, you described a new approach to this work, an approach that does not include developing proposed concepts but does create deliverables that identify critical areas so that future projects can be sited appropriately. Accordingly, we have prepared the task-based Scope of Work below, focusing on the existing conditions at Jackson Park.

SCOPE OF WORK

1. Data Collection Planning & Installation

- a. Development of a data collection plan: define the location, operation, and maintenance expectations of the gaging stations.
- b. Development of a modeling plan: identify analytical methods (modeling) and data needs to calibrate a model applicable to small flood events (<100-year floods).
- c. Purchase and installation of up to 4 water level gages (a.k.a. gaging stations).
- d. Engaging and contracting with subconsultant for surveying services to establish monuments and tie gages to a shared datum.
- e. Download and storage of gage data and minor maintenance of gages for up to 12 months. Minor maintenance includes reset after malfunction and re-connecting to vertical datum, including full replacement of a single gaging station, if needed.

Deliverables: -Data Collection Plan with maps, inventory, & maintenance expectations.
-Modeling Plan that describes methods and models to be used.

2. Hydrology & Hydraulics Assessment

- a. cursory analysis of stormwater runoff using public LiDAR topography and field observations.
- b. 1-dimensional modeling of flood sources Mud Creek and Bat Fork and Johnson Ditch, and assessment of their connectivity to the floodplains and uplands.
- c. Calibration of 1-dimensional hydraulic models.

- d. Development of flood rating curves at select sites. At a minimum, we will develop curves that relate flooding to stage at our gages, but we will also explore other useful correlations, such as local flooding vs. rainfall and vs. other nearby stream gages (e.g. USGS gage at Main Street).

Deliverables: -Engineering models and boundary conditions.
-Flood rating curves that can be used for operation and planning purposes.

3. Mapping

- a. Hydrology Mapping: Perform field work and interpret modeling results to build a series of maps that delineate where and when nuisance flooding is likely to occur.
- b. Vegetation Mapping: identify current and historic plant communities with focus on rare species, classified using latest botanical keys (Weakley, 2022).
- c. Wildlife Mapping: inventory of species and community structure, including breeding bird point counts, bio-acoustic (bat, bird, etc.) detection, remote camera detection, aquatic species detection, and targeted rare species identification.
- d. Recreation Mapping: inventory of existing recreation programs and activities at Jackson Park including soccer, baseball, greenways, birding routes, disk golf, etc.

4. Reporting

This task is meant to synthesize the data we have collected. Our aim is to provide you with deliverables that can be used to guide the management of this land. We will be in close communication with you about our findings and our expectation is that you will provide us with feedback about which areas are critical to Henderson County.

Reporting will include a quantitative assessment of stormwater and flooding issues, along with professional opinions about vegetation and habitat quality based on historical and current conditions.

Deliverable: Final report summarizing the results and outcomes of each scope item above, including graphics and maps.

COMPENSATION

RDE proposes to perform the Scope of Work for the lump sum budget of **\$100,000**. This budget is based upon our estimate of staff required to perform the Scope of Work at our currently hourly rates. This budget also includes reasonable reimbursable expenses such as printing and mileage, monthly lease costs for monitoring equipment, and sub-consultant fees for surveying and ecosystem inventory/mapping. RDE will submit itemized monthly invoices for services and expenses accrued in the previous month.

EXCLUSIONS & ASSUMPTIONS

Ongoing projects adjacent to Jackson Park relating to stream restoration and flood mitigation will affect the outcomes of our Scope of Work. Our understanding is that you will function as the intermediary between this Jackson Park Hydrology Study and those adjacent projects. Any substantial coordination or collaboration between RDE and these adjacent projects is outside of this Scope of Work.

This Scope of Work and budget also assumes:


- That you will be our primary point of contact for this project.
- The duration of this project will be one year.
- That you will provide monitoring support. We assume that you will be available for 25% of the data download and gage maintenance activities.
- That development and design of proposed concepts is not included.
- That presentations and stakeholder input sessions will not be necessary.
- Regulatory due diligence is not included.
- Modeling and/or predesign activities for proposed concepts is not included.
- Geotechnical, structural, and other professional services are not included unless specifically mentioned in the Scope of Work.

CONCLUSION

Thank you for the opportunity to provide you with this proposal. If this letter misses the mark in any way, please let me know. We are prepared to begin our work right away!

Sincerely,

Robinson Design Engineers

A handwritten signature in black ink, appearing to read 'Philip Ellis', written in a cursive style.

Philip Ellis, MS, PE
pe@rde.us

CC: Doug Guffey
Henderson County Finance Department
113 North Main Street, Hendersonville, NC 28792

GENERAL CONDITIONS OF SERVICE

These General Conditions of Service are incorporated by reference in the attached proposal from J. L. Robinson, Inc., doing business as Robinson Design Engineers ("RDE"), and shall be part of the Agreement under which services are to be performed by RDE for the Client. The term "Agreement" shall mean the attached proposal from RDE and these General Conditions.

1. SCOPE OF WORK

The scope of work is outlined in the attached proposal and includes those services provided by RDE, in its discretion, which are reasonably necessary for the effective and prompt fulfillment of its obligations under the Agreement. It is understood that the scope of work and schedule of deliverables in the proposal are based on information provided by the Client. If this information is incomplete or inaccurate, or if unexpected conditions are discovered, the scope of work may change.

2. STANDARD OF CARE

Services performed by RDE under this Agreement will be conducted in a manner consistent with the degree of skill and diligence normally employed by members of our profession performing the same or similar services.

3. PAYMENT TERMS

- 3.1. The Client agrees to compensate RDE according to the Agreement, including any additions or modifications mutually agreed upon.
- 3.2. Invoicing will be made monthly by RDE, payable upon receipt.
- 3.3. The Client's obligation to pay for the services is in no way dependent or conditioned upon the Client's ability to obtain financing, approval of governmental or regulatory agencies, or up the Client's successful completion of the project.
- 3.4. RDE has the right to suspend all services to the Client without liability of any kind to the Client if an invoice remains unpaid for more than 30 days.

4. CONSTRUCTION COST

Evaluation of construction costs, if any, represent RDE's best judgment and experience. The Client recognizes that neither RDE nor the Client controls the cost of labor, materials, equipment, or the prices determined by competitive bidding. Accordingly, RDE does not warrant or represent that actual construction costs will not vary from evaluations and estimates of construction costs.

5. CONSTRUCTION MEANS AND METHODS

RDE shall not be responsible for construction means, methods, techniques, sequences or procedures of construction contractors, or the safety precautions and programs incident thereto. RDE shall not be responsible for such contractors' failure to perform work in accordance with the contract documents.

6. SUSPENSION OR TERMINATION

This agreement may be terminated by either party by written notice in the event of substantial failure by the other party to perform in accordance with this Agreement. Such termination shall not be effective if that substantial failure has been remedied before expiration of the period specified in the written notice. If the Agreement is terminated or suspended by the Client prior to the completion of the scope of work, RDE shall be paid an equitable amount proportional to the services rendered to the date of termination or suspension, plus reasonable termination costs.

7. OWNERSHIP AND USE OF DOCUMENTS

Drawings, specifications, and other documents prepared by RDE and its consultants are Instruments of Service for use solely with respect to this Project by the Client. This includes documents in electronic form and physical form. RDE and its consultants shall be deemed the authors and owners of their respective Instruments of Service and shall retain all common law, statutory, and other reserved rights, including copyrights. Any unauthorized use of the Instruments of Service shall be at the Owner's sole risk and without liability to RDE or its consultants.

8. DISPUTE RESOLUTION

- 8.1. All claims, disputes, and other matters in question between the parties, arising out of or relating to the Agreement or the breach thereof shall be subject to mediation as a condition precedent to arbitration or the institution of legal or equitable proceedings by either party.
- 8.2. The Client and RDE shall endeavor to resolve claims, disputes, and other matters in question between them by mediation which, unless otherwise mutually agreed upon by the parties shall be in accordance with the Construction Industry Mediation Rules of the American Arbitration Association then in effect.

9. LIMITATION OF LIABILITY

- 9.1. RDE carries general liability and professional liability insurance. RDE will furnish appropriate insurance certificates upon request by the Client. The Client understands and agrees that the total liability of RDE to the Client for any and all injuries, claims, losses, expenses, or damages whatsoever, including attorneys' fees and legal expenses, arising out of or in any way related to the project or this Agreement from any cause or causes shall not exceed the total amount recoverable from such insurance.
- 9.2. The Client agrees to defend, indemnify, and hold RDE harmless from all claims for liability in excess of the limits set forth above, for injury or loss sustained or alleged by any person or entity, whether or not a party to the Agreement, and allegedly arising out of RDE's performance of the scope of work under the Agreement.

**Henderson County
Terms and Conditions**

By acceptance of a purchase order with Henderson County, or by entering into the contract or agreement with Henderson County to which this "Terms and Conditions" is attached, the vendor to Henderson County or contractor with Henderson County (as the situation may be, hereinafter referred to as the "seller"), declares that all supplies, materials, equipment, apparatus and services furnished to Henderson County pursuant to the purchase order or contract/agreement will be furnished according to the following terms and conditions, which terms and conditions shall supersede any language to the contrary in any other documentation of such purchase order or contract/agreement.

1. **QUESTIONS CONCERNING THE PURCHASE ORDER:** Contact the **Ship to Department** shown.
2. **PURCHASE ORDER NUMBER:** The purchase order number must appear on all invoices, packing slips, correspondence, and bills of lading.
3. **PRICE:** All goods and/or services must be billed to Henderson County (County) at prices and quantities not to exceed those stated on the purchase order. All invoices, packages, shipping notices or the like affecting this order shall contain the applicable purchase order number. All prices are quoted F.O.B. Destination unless specifically indicated otherwise.
4. **INVOICES:** Invoices for partial shipments will be accepted and final invoices should indicate completion of order.
5. **CASH DISCOUNTS:** All cash discounts will be effective from the date of actual receipt of a correct and approved invoice by the ordering department.
6. **PAYMENT TERMS:** The County agrees to pay all approved invoices Net Thirty (30) days from the date received and approved. The County does not agree to the payment of late charges or finance charges assessed by the seller for any reason. Invoices are payable in U.S. funds.
7. **TAXES: Henderson County is NOT Sales Tax-Exempt.** Prices shown on the County's purchase orders do not include tax; however, all applicable taxes shall be paid by the County. Seller shall itemize taxes on the seller's invoice. It should be noted that the County is exempt from Federal Excise Tax except as required to be paid by law.
8. **AGREEMENT TERMS:** Absent a negotiated contract, this purchase order is limited to the terms and conditions contained on the face and back hereof. Any additional or different terms in the Seller's form are hereby deemed to be material alterations and notice of objection to them and rejection of them is hereby given. All delivery of goods and/or services shall conform to specifications, price, terms and conditions as set forth in this instrument. This purchase order including all contracts, references and/or insertions, with the stated terms and conditions thereon shall constitute the complete agreement between the County and the Seller. The terms and conditions of this order shall not be modified by any verbal understanding and shall only be binding if agreed to in writing by the County.
9. **DELIVERY/ACCEPTANCE OF GOODS:** All quotations are solicited on a delivered price basis. When the County accepts a quotation not including all shipping charges, your claim for reimbursement must be itemized on the invoice and supported with a copy of the original freight bill. The packing list shall be enclosed in each box or package. All items shall be prepared and packed for shipment in a manner that will prevent damage in transit. All deliveries on this order must be in full accordance with specifications, properly identified with the purchase order number and must not exceed the quantities specified. The County shall have the right to inspect and test all items supplied under the order before making acceptance. Risk of loss and title to all goods received shall remain with the Seller until the County has made acceptance. Rejected goods shall be returned to the Seller at Seller's risk and expense. Payment for supplies shall not constitute acceptance and is without prejudice to claims that the County may have against the seller.
10. **SERVICES PERFORMED:** All services rendered under this agreement will be performed at the Seller's own risk and the Seller expressly agrees to indemnify and hold harmless the County, its officers, agents, and employees from any and all liability, loss or damage that they may suffer as a result of claims, demands, actions, damages or injuries of any kind or nature whatsoever by or to any and all persons or property.
11. **INSURANCE:** This purchase order shall be considered a written contract and requires the County to be endorsed as additional insured for General Liability, Automobile Liability, and Umbrella Liability Insurance Policies. Contractor shall maintain at its own expense (a) Commercial General Liability Insurance in an amount not less than \$1,000,000 per occurrence limit/\$2,000,000 aggregate limit for bodily injury, property damage, or personal injury; (b) Professional Liability Insurance in an amount not less than \$1,000,000 per occurrence (if providing professional services); (c) Worker's Compensation Insurance as required by the State of North Carolina General Statutes: (d) Commercial Automobile Insurance applicable to bodily injury and property damage covering all owned, non-owned, and hired vehicles, in an amount not less than \$1,000,000 combined single limit. Negotiated written contracts may require additional insurance coverage. A Certificate of Insurance shall be furnished prior to the commencement of services. The Certificate Holder shall be County of Henderson, Attn: Finance Dept., 113 N Main Street, Hendersonville, NC 28792.
12. **APPLICABLE LAWS:** By acceptance of this order, seller represents that the goods covered by this order are in full compliance with all applicable local, state, or federal laws and regulations and agrees to indemnify and defend the County against any loss, cost, liability, or damage by reason of seller's violation of any laws.
13. **E-VERIFY:** North Carolina General Statute §143-133.3 prohibits the County from entering into contracts with contractors and subcontractors who have not complied with the requirement of Article 2 of Chapter 64 of the North Carolina General Statutes. Contractor shall comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes. Further, if contractor utilizes a subcontractor, contractor shall require the subcontractor to comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes.
14. **IRAN DIVESTMENT:** By acceptance of this purchase order, vendors, contractors, and/or subcontractors certify they are not listed and will not utilize a subcontractor listed on the Final Divestment List created by the State Treasurer pursuant to N.C.G.S. 147-86.59, Iran Divestment Act Certification.
15. **FEDERAL FUNDS:** The following provisions are required and apply when federal funds are expended by Henderson County for any contract resulting from this procurement process.
 - A. Contracts for more than the simplified acquisition threshold currently set at \$250,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

When federal funds are expended by Henderson County, Henderson County reserves all rights and privileges under the applicable laws and regulations with respect to this procurement in the event of breach of contract by either party.
 - B. Termination for cause and for convenience by the grantee or subgrantee including the manner by which it will be affected and the basis for settlement. (All contracts in excess of \$10,000)

When federal funds are expended by Henderson County, Henderson County reserves the right to immediately terminate any agreement in excess of \$10,000 resulting from this procurement process in the event of a breach or default of the agreement by Vendor, in the event vendor fails to: (1) meet schedules, deadlines, and/or delivery dates within the time specified in the procurement solicitation, contract, and/or a purchase order; (2) make any payments owed; or (3) otherwise perform in accordance with the contract and/or the procurement solicitation. Henderson County also reserves the right to terminate the contract immediately, with written notice to vendor, for convenience, if Henderson County believes, in its sole discretion that it is in the best interest of Henderson County to do so. The vendor will be compensated for work performed and accepted and goods accepted by Henderson County as of the termination date if the contract is terminated for convenience of Henderson County. Any award under this procurement process is not exclusive and Henderson County reserves the right to purchase goods and services from other vendors when it is in the best interest of Henderson County.
 - C. If the source of funds for this contract is federal funds, the following federal provisions apply pursuant to 2 C.F.R. § 200.326 and 2 C.F.R. Part 200, Appendix II (as applicable):

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Equal Employment Opportunity (41 C.F.R. Part 60); Davis-Bacon Act (40 U.S.C. 3141-3148); Copeland "Anti-Kickback" Act (40 U.S.C. 3145); Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708); Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387); Debarment and Suspension (Executive Orders 12549 and 12689); Byrd Anti-Lobbying Amendment (31 U.S.C. 1352); Procurement of Recovered Materials (2 C.F.R. § 200.322); and Record Retention Requirements (2 CFR § 200.324); Huawei/ZTE Ban (2 C.F.R. 200.216); Domestic Preference Clause (2 C.F.R. 200.322). To the extent these provisions apply and conflict with provisions of North Carolina law, these provisions shall control. It shall be the responsibility of the contractor to determine whether these provisions apply.

16. **FEMA PROVISIONS:** The following provisions are required and apply when federal funds are expended by Henderson County for any contract resulting from this procurement process.

- A. Changes: Changes or modifications to the original contract will only be allowed if the following provisions are met:
 - 1. The change is within the scope of its grant or cooperative agreement
 - 2. The amount of the change has budgetary funds available
 - 3. The change does not fundamentally modify the project and
 - 4. The change is reasonable for the completion of the project
- B. Access to Records: The contractor agrees to provide Henderson County, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcripts.

The Contractor agrees to permit any of the forgoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The Contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to work being completed under the contract.

- C. DHS, Seal, Logo, and Flags: The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likeness of DHS agency officials without specific FEMA approval
- D. Compliance with Federal Law, Regulations, and Executive Orders: This is an acknowledgement that FEMA financial assistance will be used to fund the contract only. The contractor will comply with all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.
- E. No Obligation by Federal Government: The Federal government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.
- F. Program Fraud and False or Fraudulent or Related Acts: The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor's actions pertaining to this contract.

17. **CANCELLATION:** The County reserves the right to cancel this order, or any part thereof, at any time without penalty. Such cancellation may be based upon failure of the seller to comply with the terms and conditions of this transaction, failure to perform the work with promptness and diligence, failure to make shipment within the time specified or for any other reason which causes the seller not to perform as agreed.

18. **WARRANTY:** The seller expressly warrants that goods, covered by this order will conform to the specifications, drawings, or samples furnished by the County and shall be free from defects in material and/or workmanship and shall be merchantable. This warranty shall survive any inspection, delivery acceptance, or payment by the County. The seller also warrants that the goods do not infringe any patent,

registered trademark or copyright and agrees to hold the County harmless in the event of any infringement or claim thereof. Additionally, seller warrants that the goods are free and clear of all liens and encumbrances and that seller has a good and marketable title to the same.

- 19. **HAZARDOUS CHEMICALS:** The seller shall ensure that each container of a hazardous chemical is labeled, tagged or marked with information required by OSHA's Hazard Communication Standard, Department of Transportation requirements, and any applicable EPA requirements. The seller shall ensure that the County is provided an appropriate current Material Safety Data Sheets (MSDS) with or prior to the initial shipment of a hazardous chemical, and with or prior to the first shipment after the MSDS is updated.
- 20. **NON-DISCRIMINATION:** The County does not discriminate on the basis of race, color, sex, national origin, religion, age or disability. Any contractors or vendors who provide services, programs or goods to the County are expected to fully comply with the County's non-discrimination policies.
- 21. **VERBAL AGREEMENT:** The County will not be bound by any verbal agreements.
- 22. **INDEPENDENT CONTRACTOR:** It is mutually understood and agreed the seller is an independent contractor and not an agent of the County, and as such, seller, his or her agents and employees shall not be entitled to any County employment benefits, such as but not limited to vacation, sick leave, insurance, worker's compensation, pension, or retirement benefits.
- 23. **GOVERNING LAW:** All terms and conditions shall be interpreted in accordance with the laws of the State of North Carolina. Any legal actions arising from default of this contract shall be brought only in the County of Henderson, State of North Carolina.
- 24. **PUBLIC RECORDS.** The seller acknowledges that notwithstanding any other provision to the contrary (including any statements regarding confidential information), this agreement, the confidential information and any documents, memorandum, data, reports, analyses, compilations, records, pricing and evaluation of all or any portion of the transactions contemplated by this agreement may be deemed public records and subject to disclosure, in whole or in part, pursuant to the North Carolina Public Records Law. The County will provide the seller with reasonably prompt notice of any intended disclosures or requests for disclosure pursuant to the North Carolina Public Records Law. The seller may then choose to seek judicial protection of the confidential information consistent with all applicable laws and regulations. Should a public records request be made for information the seller claims are proprietary in nature, the County will, within a reasonable time, notify the seller of such public records request. The seller shall, within five (5) business days of said notification, provide notice to the County that it does or does not object to the County disclosing the requested information pursuant to the subject public records request. If the seller objects to the disclosure of the requested information, the seller agrees that it shall be solely responsible for the defense of and the cost of defending any claim or complaint against the County for its refusal to disclose confidential information. The seller agrees that if any such complaint or claim is filed it will indemnify the County and will reimburse the County for any and all damages awarded against the County its refusal to disclose the requested information. The seller agrees that it releases the County from all loss, liability, claims or expense, including attorney's fees, arising out of or related to the release or disclosure or failure by the County to release or disclose confidential information. The seller further agrees that it waives the right to file any court action for any such release, disclosure, or failure to release or disclose confidential information.
- 25. **NON-APPROPRIATION:** No provision of any agreement between the County and the seller (the "Agreement") shall be construed or interpreted as creating a pledge of the faith and credit of the County within the meaning of any Constitutional debt limitation. No provision of the Agreement shall be construed or interpreted as creating a delegation of governmental powers nor as a donation by or a lending of the credit of the County within the meaning of the Constitution of North Carolina. The Agreement shall not directly or contingently obligate the County to make any payments beyond those appropriated in the sole discretion of the County for any fiscal year in which the Agreement is in effect; provided, however, that any failure or refusal by the County to appropriate funds which results in the failure by the County to make any payment coming due under the Agreement will in no way obviate the occurrence of the event of default resulting from such nonpayment. No deficiency judgment may be rendered against the County in any action for breach of a contractual obligation under this Agreement, and the taxing power

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of the County is not and may not be pledged directly or indirectly or contingently to secure any moneys due under this Agreement. No provision of the Agreement shall be construed to pledge or create a lien of any class or source of the County's moneys, nor shall any provision of the Agreement restrict the future issuance of any of the County's bonds or obligations payable from any class or source of the County's moneys. To the extent of any conflict this provision and any other provision of the Agreement, this provision shall take priority and control.

Signature Addendum

The foregoing seven (7) pages constitutes the entire agreement between the County of Henderson and Robinson Design Engineers.

Executed this the 25 day of July, 2024.

ROBINSON DESIGN ENGINEERS

By: 

PHILIP ELLIS, MS, PE

COUNTY OF HENDERSON

By: _____
JOHN MITCHELL, County Manager

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.

Finance Officer of Henderson County