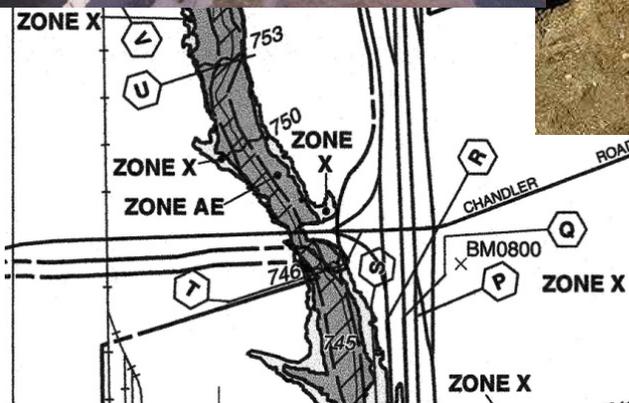


Statement of Qualifications

For

Public Works Engineering

2016





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STATEMENT OF QUALIFICATIONS

INTRODUCTION

H & H Resources, Inc. (HHR) was founded and incorporated in 2001 as a civil engineering consulting firm to assist clients in finding practical, feasible, and economical civil engineering design and permitting solutions. Our goal is to deliver products and services that are on time, accurate, and within budget. **HHR** specializes in drainage engineering for transportation projects, and also provides other related civil engineering services for city and county governments. **HHR** is registered as a consulting engineering firm to practice in the states of Texas, Georgia, and North Carolina.

The majority of our engineers are Certified Floodplain Managers. Many have experience in teaching training courses on drainage design, have had technical papers published and provide expert witnessing for universities and state and local agencies. HHR has established a client trust that is proven over time and a confidence that precise results will be achieved from a select group of highly respected engineers and technical staff.

Our principals, Eric Friedrich, P.E., CFM and Wayne Fowler, P.E., CFM, each have over 30 years of experience. The staff includes registered professional engineers, GIS specialists and technical and administrative support, which makes the firm experienced for many types of public works projects.

To illustrate our company's comprehensive background, our engineers have worked as staff or consultants for the following public entities:

- U.S.D.A Natural Resources Conservation Service
- Texas Department of Transportation
- Georgia Department of Transportation
- Fort Bend County Toll Road Authority, Texas
- Cities of Houston, Fort Worth, Bryan, Georgetown, Texas
- Cities of Atlanta, Albany, Jefferson, Kennesaw, Dallas, and Hiawassee, Georgia
- Georgia Counties: Union, Henry, Lee, Fulton, Tift, Douglas, Hall
- Harris County, TX Flood Control District
- Texas A&M University's Texas Engineering Extension Service
- UT Austin Center for Lifelong Engineering Education
- University of Texas at Arlington

In an effort to serve our clients better, our engineers continue to update their skills by receiving continuing education in various software programs and engineering topics related to drainage and transportation. As leaders in our profession, HHR provides instructors and training courses in the fields of hydrology, hydraulics, and erosion control. Our principals and employees have been involved in the development of drainage standards, policies, and procedures for local and state governments.

PUBLIC WORKS ENGINEERING SERVICES

HHR has expertise to offer the following services on public works projects:

- Water and Sewer
 - Water Source Development
 - Water Delivery
 - Sanitary Sewer Collection
 - Sewer Lift Stations
 - Standards Development
- Transportation
 - Road Design
 - Railroad Design
- Water Resources
 - Floodplain Studies
 - Floodplain Management
 - Flood Mitigation Planning
 - Storm Sewer
 - Stormwater Management
 - NPDES/MS4
 - Stormwater Utility
 - Drainage Master Planning
 - Erosion/Sediment Control
- Consulting
 - Multi-Jurisdictional Hazard Mitigation Plans
 - Expert Witness/Pre-Litigation Analysis
 - Staff Training
 - Funding Source Development
 - Ordinance Writing
 - Plan Review
 - Agency Coordination
 - Construction Phase Services

As a result of our comprehensive hydraulic and hydrologic design experience we remain proficient in state of the art DOT drainage design standards and methods, including coordination procedures with FEMA, the U.S. Army Corps of Engineers, State environmental agencies, and local flood control districts.

Our engineers have extensive experience in a variety of design software, technical manuals, and procedures including:

- Ten States Standards
- Minimum Standards for Public Water Systems
- EPA-SWMM
- NRCS TR-20, TR-55
- Geopak Drainage
- Georgia Stormwater Management Manual
- FEMA Flood Insurance Studies (FIS), Flood Insurance Rate Maps (FIRM)

Water and Sewer

HHR can assist a community in improving and extending its water and sewer services. Our experience includes well permitting, new community water systems, state permitting for water extensions, booster pumps, storage tanks, troubleshooting, and development of standards and specifications. We have designed sewer pump stations, sewer line extensions, and coordinated environmental permitting. Communities rarely need onsite wastewater management designs, but our experience includes that also. We can assist communities in finding funding sources.

Transportation

Roads and related drainage issues are a significant part of our practice. We have designed new roads for communities and improvements to existing roads. We have assisted communities in finding funding. For communities expanding their industrial base, we can provide rail engineering.

Water Resources

As Certified Floodplain Managers, we have extensive experience with floodplain engineering related to FEMA's National Flood Insurance Program (NFIP). We can assist a community with floodplain mapping and revisions, ordinance revisions and program updates, flood mitigation planning, and Community Rating System (CRS) implementation.

HHR can address drainage problem areas by designing improvements to storm sewers, detention ponds, water quality, culverts and bridges. We can provide master planning for drainage improvements. We have assisted communities with NPDES Ph 2 implementation and establishing a local stormwater utility to fund stormwater improvements. We are qualified and experienced in erosion and sediment control design, and are instructors in Georgia's Erosion and Sedimentation Control certification program.

Our drainage projects have required HHR to coordinate with FEMA, U.S. Army Corps of Engineers, and state environmental regulations.

Consulting

HHR has provided expert witness on drainage-related issues and pre-litigation design as result of complaint. Courts have held governments liable for increasing flood and erosion damages on private property by changing natural drainage patterns and by increasing the location and rates of runoff due to drainage projects. Governmental units are liable for inadequately maintaining or operating culverts, bridge crossings, and channelization projects.

We have assisted communities with engineering review of plans and permit applications, master planning, ordinance writing and revisions, multi-jurisdictional hazard mitigation planning, and major investment (capital improvement) studies.

Communities have retained HHR to develop funding sources, such as DOT state aid grants, Community Development Block Grants, and local stormwater utility.

Our services have been used by communities to meet state and federal regulatory requirements, such as applying for groundwater use permit, developing water conservation plans, and complying with the National Flood Insurance Program.

KEY PERSONNEL

At **HHR**, we value our employees and believe they are second to none. Our experienced professional staff of civil engineers, hydraulic and transportation engineers, GIS professionals, technical support and administrative personnel are selected based on their exceptional qualifications in our areas of expertise to provide our high standard of quality to ensure consistent client satisfaction.

Eric R. Friedrich, P.E., CFM

President

B.S. Civil Engineering, University of Texas, 1983

Mr. Friedrich has over 30 years of professional experience in project management and engineering analysis/design of water resources and transportation projects. His extensive experience includes all phases of project development, from preliminary engineering to PS&E development for highway and bridge projects, with particular expertise in hydrology and hydraulics analysis and design.

In 2001, Mr. Friedrich founded **H & H Resources, Inc. (HHR)**. Prior to launching HHR, Mr Friedrich gained valuable experience during his 11 years at TxDOT where he worked in the project design group with the Fort Worth District and subsequently moved on to serve as the Director of the Hydraulics Section for the TxDOT Bridge Division. In that capacity, Mr. Friedrich was instrumental in developing course material, and ultimately rolling out the drainage design sections of the statewide in-house Level I and Level II training program where he also served as lead instructor.

He has provided drainage studies, analysis and design of culverts, bridges, storm sewer systems, open channels and ditches, detention ponds, erosion and sediment control systems, and pump stations; analysis for bridge scour; and floodplain/floodway coordination with FEMA. Modeling expertise includes THYSYS Culvert and WinStorm; HEC-1, HEC-HMS, HEC-2, HEC-RAS; SCS TR-20, WSP-2, USGS PeakFQ, Geopak Drainage and EPA SWMM. Mr. Friedrich is an instructor under contract with University of Texas at Arlington teaching hydrology and hydraulics to TxDOT personnel.

Mr. Friedrich has been involved in the development of the following technical publications, standards development, and policy-generation:

- TxDOT Bridge Division Hydraulic Manual 3rd Edition, 1985
- AASHTO Task Force on Hydrology and Hydraulics, 1985 – 1990
- TxDOT Bridge Scour Evaluation Program, 1990
- TxDOT IH 10 Katy Freeway Reconstruction Program, Drainage Design Criteria, 2001-05
- Texas Engineering Extension Service, Professional Development Training Program, Hydrologic and Hydraulic Design for Culverts and Storm Drains, 2003-04.
- TxDOT US 290 / Hempstead Corridor Program Management, Drainage Design Criteria, 2006-09

Mr. Friedrich is a member of the American Society of Civil Engineers (ASCE), and the Texas Floodplain Management Association (TFMA).

Wayne E. Fowler, P.E., CFM

Vice President

B.S. Engineering, Auburn University, 1983

Post-graduate studies, Auburn University, 1984

Mr. Fowler is a registered professional engineer in Georgia, Texas, North Carolina, and Alabama. He has over 30 years of experience in a variety of public and private sector civil engineering projects, particularly in hydrology and hydraulics analysis and design. He has managed roadway, drainage, floodplain, utility, and land development projects. He has served as a County Engineer and Floodplain Administrator. Prior employment experience includes USDA-NRCS; engineering consulting firms in Texas, Georgia, and Alabama; and a 2-yr international assignment in water resource development.

He has provided engineering design and analysis for water resources projects including, bridge hydraulics and scour analysis, municipal and transportation storm sewers, pump stations, detention facilities, pavement drainage, and erosion control. Software experience includes HEC-1, HEC-HMS, SWFHYP, HEC-2, HEC-RAS, HY-8, WSP2, PeakFQ, XP-SWMM.

Mr. Fowler is especially qualified for projects that have National Flood Insurance Program (NFIP) implications, having prepared over 90 Conditional Letter of Map Revision (CLOMR) and LOMR applications, No-Rise certifications, and other NFIP- or FEMA-related submittals in Texas, Georgia, and North Carolina. He has assisted with countywide floodplain mapping and floodplain map modernization projects. He has extensive experience in watershed hydrology, floodplain analysis, bridge, floodway, and encroachment modeling, coordination with FEMA, and floodplain/floodway delineation.

Mr. Fowler is a member of the American Society of Civil Engineers (ASCE), Association of State Floodplain Managers (ASFPM), and Georgia Association of Floodplain Management (GAFM). He is an instructor in Georgia's Erosion Control Certification Program.

Charles D. Absher, P.E., CFM

Senior Project Manager

B.S. Civil Engineering, Georgia Institute of Technology, 1989

Mr. Absher manages the Atlanta area branch office. He has over 26 years of engineering experience in water resource assessments and modeling, floodplain mapping, hydrologic/hydraulic analysis, and civil design and is a registered professional engineer in Georgia, Texas, North Carolina, South Carolina, Florida and Tennessee. His expertise includes unsteady flow analysis for bridge tidal hydraulics using HEC-RAS, and its precursor, UNET. In addition, he has developed transportation hydrology/hydraulics using SWMM for a variety of transportation drainage designs. He is also experienced in the application of Geographic Information System (GIS) databases as related to water resource systems planning, analysis, and design.

Mr. Absher is a member of the Georgia Association of Floodplain Management, is a Certified Engineer of Record for Civil and Hydrologic/Hydraulic Design under Georgia Safe Dams Program, and is a Certified Design Professional in Erosion & Sediment Control by the Georgia Soil & Water Conservation Commission.

Adam Faulkner, P.E., CFM

Engineer

B.S. Biological Systems Engineering, Virginia Polytechnic Institute & State University (Virginia Tech), 2002

Mr. Faulkner is officed in the Blairsville, GA office, and has over 14 years of experience in public works improvement projects, stormwater facility maintenance management, land development, and stream/wetland restoration. His recent employment experience includes the Hall County Georgia Public Works Department where Mr. Faulkner performed permit review, design and construction phase services. He has also participated in stream and wetland restoration projects and land development projects.

Mr. Faulkner is member of Georgia Association of Floodplain Management and a Certified Floodplain Manager in the State of Georgia. He is experienced in the use of various computer programs including ArcMap, Spatial and 3D Analyst, HEC-RAS, Microstation and Geopak.

PROJECTS

Our public works projects vary in size and scope. The following project list illustrates HHR's recent and ongoing projects that have required a wide range of detailed technical knowledge, experience and qualifications.

- **Percosin Flood Study, Albany, GA (2012);** Base flood elevation and Letter of Map Revision for existing residential community located within an A Zone. Project included coordination with local community including meetings with the City Manager and elected officials. Design software: HEC-RAS, ArcMap, Microstation.
- **Update HEC-RAS Floodplain Models, GA (2012-present);** Engineering services to update the City of Griffin HEC-RAS floodplain models to reflect stormwater conveyance improvements. The following steps are being implemented: 1) Input stormwater improvement parameters to the City HEC-RAS models, 2) Process the updated HEC-RAS model results, 3) Re-delineate the 100-Year floodplain boundary, and, 4) Provide updated 100-year floodplain boundary delineations, and an updated cross-section coverage that reflects the new elevations, all in an ArcGIS format.
- **Downtown Drainage Master Plan Feasibility Studies, GA (2012-2013);** Engineering studies to develop measures to reduce the City of Kennesaw downtown area impact to stormwater volumes resulting from an approximate 50% impervious surface condition. Studies consisted of considering several potential storage locations and quantifying their capacities relative to downtown stormwater volumes using approximate NRCS TR-55 methods, and developing a SWMM model of the downtown drainage system.
- **City of Cornelia Water Supply Yield, GA (2012);** Engineering services to analyze potential safe yield incorporating the loss of water supply storage upstream of the Hazel Creek Watershed Dam. Tasks included adding off-line storage downstream of the Dam, before and after Reservoir dredging to assess increased storage potential, and limitations associated with EPD minimum-flow requirements for the City's two withdrawal locations. A spreadsheet was developed that analyzed the safe yield for the City's water supply infrastructure by a daily water budget accounting of inflows, outflows, and storage through a critical drought period; a drought period recommended by EPD. A Technical Memorandum was provided describing the effort, including the spreadsheet algorithms.
- **Douglas County Floodplain Mapping, GA (2011-2013);** Engineering services to provide quality review of the hydrologic and hydraulic modeling for the Dog River, Upper Sweetwater Creek (Town Creek), and Wolf Creek Basins. The review was sufficient to determine if modeling parameters and results were in accordance with accepted engineering practices and with FEMA mapping standards. Hydrologic review included loss, transform and routing parameters, and model results. Hydraulic review included input parameters, model geometry, and model results.
- **Floodplain Mapping, City of Dallas, GA (2011-2014);** HHR provided engineering services for analysis of the City of Dallas' future floodplain mapping required by Metropolitan North Georgia Water Planning District. Services included converting HEC-2 models to HEC-RAS, Limited Detailed hydraulic analysis to map existing and proposed floodplains. We produced floodplain mapping panels and supporting documentation.

- **Sediment Transport Potential, SC (2011-2013);** Engineering services to determine the sediment transport potential for a proposed water treatment plant discharge into the Monticello Reservoir. HHR assessed the potential for sediment transport by wind between the discharge and intake locations and the potential for sediment transport due to velocity vectors produced by the discharge and/or in-situ reservoir velocity vectors between the discharge and intake locations. A Technical Memorandum was provided describing the assessment. HHR also provided guidance on the collection of in-situ data, including existing reservoir velocity measurements at depth, representative samples of the existing sediment at the bottom of the Reservoir, and representative samples of the existing percent sediment concentration, found in the water column and Reservoir bottom between the discharge and intake locations.
- **Hedrick Law Firm Expert Drainage Engineering Services, GA (2011-present);** Providing ongoing drainage engineering services as requested on an as-needed or "on call" basis. Services include meetings, studies, exhibits, design, hydrologic and/or hydraulic analysis of stormwater systems, or other related engineering services for opinion development, corrective solutions, depositions, or expert witness testimony, as requested.
- **City of Atlanta Expert Drainage Engineering Services, GA (2013-present);** Providing ongoing drainage engineering services as requested on an as-needed or "on call" basis. Services include meetings, studies, exhibits, designs, hydrologic and/or hydraulic analysis of stormwater systems, or other related engineering services for opinion development, corrective solutions, depositions, or expert witness testimony, as requested.
- **Tift County Hazard Mitigation Plan Update (2011-present);** Engineering services to provide an updated County Hazard Mitigation Plan incorporating future land use, DOT projects and comprehensive plans from key local municipalities within the county. Services include conducting major stakeholder meetings and public hearings, technical guidance for updating information on critical facilities and mitigation strategies and coordination with county staff through plan submittal, review and approval by FEMA.
- **Leesburg NPDES Permit (MS4) Compliance (2010-present);** Providing ongoing engineering services and technical guidance to the City of Leesburg to ensure compliance with the City's NPDES stormwater permit.
- **Coosa Water Authority Waterline – GEFA Loan (2010-present);** Prepare Preliminary Engineering Report, Environmental Information Document and GEFA loan application for a proposed water conservation project.
- **Coosa Water Authority Waterline Extension (2010-present);** Design of approx. 15,000 ft of a waterline extension and booster pump station. Services include flow/pressure testing, preparation of construction plans and construction observation.
- **Whalen Law Firm Expert Witness Services (2010-present);** Providing expertise on drainage engineering issues and expert witness services. Services include preparing exhibits, design recommendations, provide depositions and/or testimony to legal team
- **Legacy Park Circle, Kennesaw, GA (2010);** Prime consultant. Hydrology/hydraulics design, NFIP compliance, scour analysis, complete PS&E for replacement of bridge-class culvert with ConSpan® precast bridge.

- **Countywide Floodplain Mapping, Henry County, GA (2008-2009);** Drainage sub-consultant. Future floodplain mapping required by Metropolitan North Georgia Water Planning District. Effective data conversion. Limited Detailed hydraulic analysis. Sub-consultant to URS Corporation.
- **Consulting Services, Lee County, GA (2008-present);** Transportation design, plan review, NPDES compliance, Multi-Jurisdictional Hazard Mitigation Plan.
- **Coosa Water Authority, Union County, GA (2008-present);** Standards and specification development, remedial design for low pressure area, EPD compliance, groundwater use permit.
- **Consulting Services, Union County, GA (2001-2008);** Ordinance revisions, plan review, coordinate with state and federal agencies, design for transportation and drainage improvements, floodplain mapping, staff training.
- **Water System Extensions, Young Harris, GA (2008-2009);** Design and permitting for extensions to serve proposed Young Harris Village and The Valley at Brasstown Creek subdivisions.
- **Flood Mitigation Assistance Plan, Lee County, GA (2008-2009);** Study and report to evaluate flood risks in Lee County. Developed mitigation strategies to reduce/eliminate losses associated with Severe Repetitive Loss Properties. Prepared written document for approval by FEMA. Coordinated with County FPA, GEMA and FEMA.
- **Stormwater Utility, Americus, GA (2009);** Analysis of maintenance and capital improvements needs. Assist in development of stormwater utility.
- **Sewer System Extension, Young Harris, GA (2007-2009);** Design and permitting for sewer collection system, two lift stations. Coordination with City, Georgia EPD.
- **Airport Terminal Road, Union County, GA (2006-2008);** Design for new road, including alignment, drainage, erosion control, coordination with U.S. Army Corps of Engineers.
- **Precinct Line Rd. at Walker Branch, Fort Worth, TX (2006-08);** Hydrology and hydraulics design of bridge replacement and approach embankment in floodplain for City, TxDOT. Watershed analysis, channel improvements and lining, impact/mitigation analysis, floodplain study (CLOMR request). Coordinated with City FPA, FEMA's review contractor.
- **Crisp County Courthouse Flood Study, Crisp County, GA (2008);** Base flood elevation determination. Hydrologic and hydraulic analysis of a Zone A flood zone to determine existing and proposed base flood elevations. Coordination with County, City FPA, architect.
- **Longview Street, Hiawassee, GA (2007);** Drainage analysis and design to alleviate flooding and citizen complaints.
- **Water System Extension, City of Clayton, GA (2007);** Design and permitting for extension to serve proposed Pinnacle Pointe subdivision.

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