



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
GSD116434

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
**KRISTA FERRELL
 304-558-2596**

**RFQ COPY
 TYPE NAME/ADDRESS HERE**

Wilbur Smith Associates
 Geary Plaza, Suite 210
 700 Washington Street East
 Charleston, WV 25301

**DEPARTMENT OF ADMINISTRATION
 GENERAL SERVICES
 BUILDING 1 ROOM MB60
 1900 KANAWHA BOULEVARD, EAST
 CHARLESTON, WV
 25305-0123 304-558-2317**

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
02/02/2011				

BID OPENING DATE: **03/01/2011** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		906-07		
<p>A&E SERVICES: REDESIGN OF EAST CAMPUS PARKING LOTS</p> <p>EXPRESSION OF INTEREST (EOI) ARCHITECTURAL/ENGINEERING SERVICES</p> <p>THE WEST VIRGINIA DIVISION OF PURCHASING FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF GENERAL SERVICES, IS SOLICITING FOR EXPRESSIONS OF INTEREST TO PROVIDE ARCHITECTURAL AND ENGINEERING SERVICES TO EVALUATE AND REDESIGN THE AREAS OF THE EAST MAIN CAMPUS PARKING LOTS PER THE ATTACHED SPECIFICATIONS.</p> <p>TECHNICAL QUESTIONS CONCERNING THIS SOLICITATION MUST BE SUBMITTED IN WRITING TO KRISTA FERRELL IN THE DIVISION OF PURCHASING VIA MAIL AT THE ADDRESS SHOWN IN THE BODY OF THIS EOI, VIA FAX AT 304-558-4115, OR VIA EMAIL AT KRISTA.S.FERRELL@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS FEBRUARY 15, 2011 AT THE CLOSE OF BUSINESS. ANY TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY FORMAL ADDENDUM TO THIS EOI ISSUED BY THE PURCHASING DIVISION.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</p> <p>NOTICE</p>						

RECEIVED
 2011 MAR -1 PM 12:07
 WV PURCHASING
 DIVISION

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Mary O'Shea</i>	TELEPHONE 304.345.2339	DATE 03/01/2011
TITLE Associate-In-Charge	FEN 570405950	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



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<p>A SIGNED EOI MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE EOI SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE EOI MAY NOT BE CONSIDERED:</p> <p>SEALED EOI</p> <p>BUYER: KRISTA FERRELL-FILE 21</p> <p>EOI. NO.: GSD116434</p> <p>EOI OPENING DATE: MARCH 1, 2011</p> <p>EOI OPENING TIME: 1:30 PM</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR EOI:</p> <p>----- 304-345-2343 -----</p> <p>CONTACT PERSON (PLEASE PRINT CLEARLY):</p> <p>----- Wesley O. Stafford -----</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Wesley O. Stafford</i>	TELEPHONE 304.345.2339	DATE 03/01/2011
TITLE Associate-In-Charge	FEIN 57-0405950	ADDRESS CHANGES TO BE NOTED ABOVE

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GSD116434:

REDESIGN OF EAST CAMPUS PARKING LOTS

03/01/2011



Submitted to: Department of Administration General Services
Submitted by: Wilbur Smith Associates

March 01, 2011



West Virginia Department of Administration
Purchasing Division, Building 15
2019 Washington Street, East
Charleston, WV 25305-0130
Attn: Krista Ferrell, Buyer Supervisor

Re: Redesign of East Campus Parking Lots, GSD116434

Dear Evaluation Committee:

This *Expression of Interest* is submitted in for professional engineering design services to perform parking lot design, paving, drainage, surveying, and other related services that completes the project mission. WSA understands that the professional engineering services required by this contract may include civil, environmental, geotechnical, hydrological and construction phase services and has developed an expert team highlighted in this proposal to cover all aspects of the project.

Founded in 1952, WSA is a national consulting firm specializing in civil/transportation design, infrastructure improvements, and context-sensitive solutions in both urban and rural environments. The firm is ranked among the top engineering firms in the nation by *Engineering News Record* and has cultivated an outstanding track record for delivering high-quality projects through skilled engineering and project management.

Our Charleston, WV office will manage this project and is led by professionals and support staff that successfully completed numerous engineering projects throughout West Virginia and surrounding states. WSA has received recognition for outstanding work on this type of project. The Charleston staff is supported by additional professionals and support staff that can be called upon to include their special experiences and expertise to accomplish a successful project.

WSA has studied, planned, designed, and administered the construction of numerous site engineering projects involving grading, drain, permit applications, specifications, lighting, pavement marking, ADA compliant design, way-finding signage, utility coordination, phased construction planning, exterior lighting, right-of-way coordination, and complete project bid documents.

If you have any questions regarding our submittal, contact me at 304-345-2339.

Respectfully submitted,

WILBUR SMITH ASSOCIATES

A handwritten signature in black ink, appearing to read 'Wesley O. Stafford', is written over the company name.

Wesley O. Stafford, PE, AICP
West Virginia Division Manager

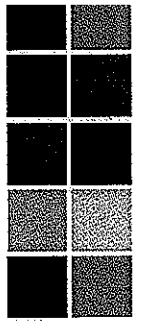
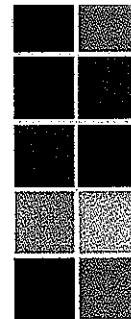


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Wilbur Smith Associates

WSA is an international consulting firm providing services in the fields of engineering, architecture, planning, and economics. The firm is multidisciplinary and has a diversified practice with its major concentration of services in the analysis, planning and design of community and industrial infrastructure systems and facilities, planning of transportation systems and the design of transportation facilities. Established in 1952, the firm has completed more than 30,000 projects including work in 50 states as well as projects in more than 117 countries throughout the world. WSA has provided comprehensive engineering and inspection services for a broad range of transportation facilities, including highways, bridges and other structures, parking, and interchanges in the United States and around the world. *For additional general information about Wilbur Smith Associates, please refer to our web site at www.WilburSmith.com.*

WSA's professional services include:

Site Development and Utilities

From small lots to large-scale commercial developments of well over 1,000 acres, Wilbur Smith Associates provides site planning and engineering services for office, business, retail, institutional, and industrial sites and campuses. Projects include public and private sector developments, transportation facilities, economic development initiatives, educational facilities, industrial and business parks, retail centers, residential developments, resorts, and recreational facilities. The site development group offers comprehensive land use planning, design, and construction phase services, and develops creative yet pragmatic master planning initiatives and documentation to help attract prospects to project sites, often working in teams with architects and landscape architects, as well as the developers' staff.

The firm's water, sewer, gas, and electrical engineering capabilities allow seamless integration of utility planning, and in-house expertise in environmental, geotechnical, and hydraulic engineering, GIS mapping, transportation planning, parking analysis, surveying, and construction inspection can be quickly accessed as the need arises. Because project teams can draw on these resources, the solutions they devise are not likely to encounter issues that require costly changes and schedule delays. This broad in-house expertise also allows project teams to understand the complex relationships between community objectives, land use, regional development, and transportation, and enables them to identify alternatives for maximizing developable acreage and build consensus among diverse stakeholders. These critical capabilities, along with a commitment to meet budget and schedule constraints, allow WSA to develop customized, flexible solutions to meet the needs of each client and project.

Site Development Services Include:

- Master planning
- Grading plans
- Drainage and stormwater management
- Detention facilities
- Water, wastewater, gas, and electric utilities
- Hydraulic and hydrologic modeling and analysis
- Erosion control permitting
- Due diligence studies
- Site analysis and asset evaluation
- Site certification
- Financial and public-private partnership planning
- Incentive packages
- Public sector involvement
- Development and redevelopment strategies
- Market analyses and feasibility studies
- Parking studies and financial analyses
- Office, business, and industrial parks
- Recreation and resort properties
- Education and medical campus planning
- Zoning ordinance review and land use regulation
- Traffic access and circulation
- Intersection and interchange design
- Traffic impact and signal warrant studies
- Interchange modification and justification studies



Right-of-Way Services

WSA's right-of-way practice serves as an integral part to the success of our projects. Our professionals are equipped to support public and private sector clients nationwide in planning, negotiations, and relocations. We offer extensive knowledge in permitting and real estate law and possess above-average communication and people skills in order to minimize condemnation rates. Our creative solutions are a precursor to your success and guaranteed to help you achieve your goals. WSA's Charleston office has provided the following right-of-way services to WV DOT under past statewide agreements for right-of-way functions:

- review of R/W invoices (procurement by the Department by option, deed, or agreement)
- review of condemnation packages for invoicing
- property management
- preparation of property descriptions
- plan review
- project oversight
- R/W stakeouts

Geotechnical Investigation and Reports

WSA has integrated geotechnical engineering, pavement design, and foundation/site-related construction services into the design of our highway and bridge structures, commercial buildings, power plants, dams, ports, airports, and industrial facilities. Our geotechnical engineering services include:

- subsurface investigations
- shallow & deep foundation design
- slope stability analyses
- earth retaining structures & reinforced slopes
- rock slope engineering
- seismic hazard analysis
- ground improvement
- earth dam engineering
- seepage and dewatering analysis
- pavement design and management systems

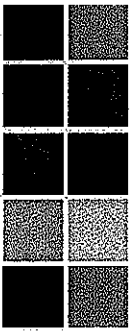
Engineering (Bridge Design)

WSA continues to be a leader in contemporary bridge technology. Our work falls into nearly every category of bridge configuration and contemporary structural materials, and every type of highway structure including overhead signs, mast lights, tension poles, pedestrian bridges, and pedestrian and traffic tunnels and culverts. From feasibility studies, inspections and investigations to new and rehabilitative design and contract documents, WSA is a leader in bridge technology

- pioneered the design of embedded "integral" post-tensioned caps in structural steel bridges — a first in the U.S.
- employed state-of-the-practice non-linear, structural seismic analysis techniques
- developed the FHWA inspection manual for fracture-critical bridge members — providing instruction for more than 10 years
- 35 years of bridge research for FHWA and the National Academy of Sciences — used in technology transfer worldwide
- extensive experience in bridge hydraulics
- experience ranging from the simplest, single-span bridge to analysis and design of complex structures

Water Resources

WSA's water resources division originated as a supplement to highway design, addressing drainage issues on our nation's roadways. Later, these methods were applied to urban and rural development projects. As the company expanded its capabilities, new opportunities surfaced. Since then, the water resources group has evolved into a full service division, supporting not only highway design, but urban and rural planning, site development and other infrastructure and municipal services. Water resources services include:



- hydrology and hydraulics
- hydrodynamic modeling
- drainage and waterline design
- detention ponds/lakes
- stormwater master plans
- stormwater utility development
- FEMA flood studies
- flood control strategies
- watershed modeling
- bridge scour studies
- river mechanics and modeling
- stream restoration
- pump stations

Environmental Engineering

WSA has provided our clients and the community with environmental planning and National Environmental Policy Act services for over 30 years. This includes over 250 completed projects in more than 36 states. Our environmental capabilities address all transportation modes including, aviation, rail, transit, roadways, bridges, and ports, in addition to site development projects. Our firm is unique because we have in-house technical staff to address the full range of NEPA technical disciplines. This multi-discipline approach provides a culture that encourages creativity and non-traditional methods, thus bringing new ideas and streamlining processes to our clients. In addition to NEPA documentation and a variety of wetland, endangered species, and other natural resource assessments, our experience includes:

- noise and air quality modeling
- hazardous materials surveys
- community impact assessments
- environmental justice analysis
- public and stakeholder involvement
- agency coordination letters
- geographic information services

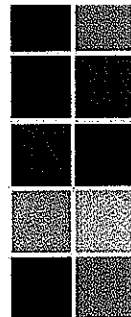
Cultural Resources

WSA offers a full scope of archaeological services from Phase I survey to Phase III mitigation and cultural historic surveys and National Register evaluations including resource management. We have a staff of professional archaeologists, architectural historians as well as access to surveyors, computer mapping specialists with expertise in CAD and GIS software and techniques, and graphic artists. WSA has provided cultural resources services on numerous department of transportation projects in Kentucky, Michigan, Tennessee, South Carolina, and West Virginia. Previously, WSA has held the Statewide Cultural Resources contract with WVDOH and has been able to supply archaeological and cultural historic services on a couple of projects.

Throughout its history, WSA has performed a significant number of archaeological and cultural historic projects. Our experience conducting archaeological investigations varies from small scale prehistoric sites to large scale historic farmsteads and industrial complexes. Cultural historic studies performed by WSA include the Statewide Historic Bridge Survey, in which over 300 structures were identified and evaluated. Other recent transportation cultural historic survey projects include the proposed I-66 corridor, in which over 400 structures were surveyed, and KY 52, which contained over 350 evaluated structures.

Natural Resources

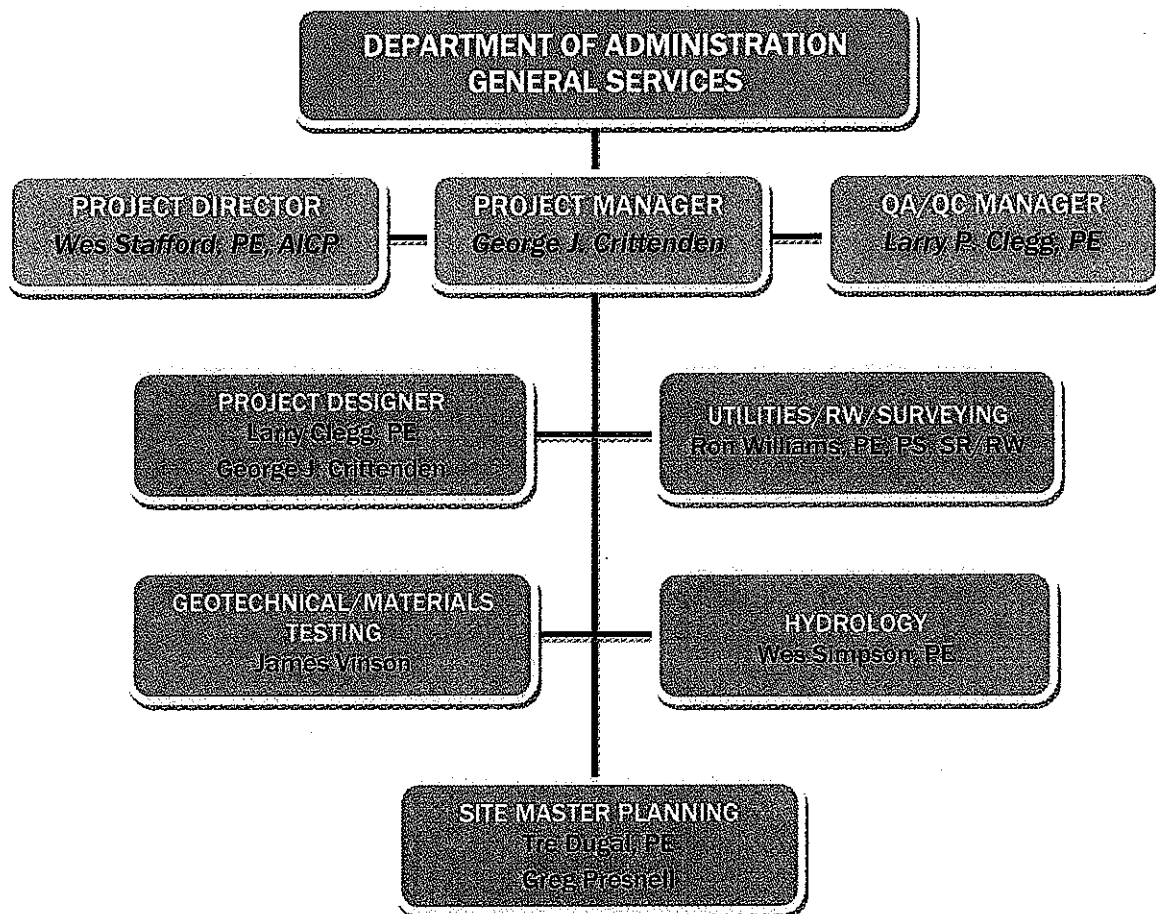
As a part of our environmental engineering and planning services, WSA provides services related to natural resource assessment, including wetland/ stream mitigation, pre-construction notification, threatened and endangered species surveys, neotropical and migratory bird habitat and stream buffer variance applications. Additionally, our personnel have experience in the preparation of natural resource reports in support of Categorical Exclusions, Environmental Assessments, and Environmental Impact Statements for transportation projects.



Project Management and Design Team

WSA commits its team of professionals to the Department of Environmental Protection for this project. We anticipate that WSA staff can be fully and immediately dedicated to the project under this agreement, if chosen. *Key personnel include:*

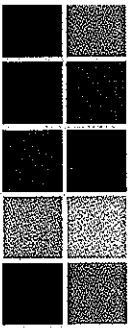
TEAM ORGANIZATION



George J. Crittenden Project Manager

Joe brings more than 34 years of civil and site design experience. His specific project relevant experience includes roadway design studies, roadway contract plans, utility relocations, rough site grading plans, final site grading plans, and obtaining 404/401 and NPDES Permits:

- Formulating the Project Work Plan.
- Establishing the Project Schedule.
- Ensuring that all project milestones are met through the coordination and monitoring of the project schedule and budget for the entire project team.
- Conducting meetings to document decisions or open items (project issues) and to publish meeting minutes that document those decisions/open items.



- Identifying and monitoring all open items/project issues so that all key project information is acted upon/ responded to in a timely and professional manner.
- Participating with the team on-site visits in order to assess existing conditions and to collect and verify all appropriate program needs and requirements.
- Confirming that all work is being performed in accordance with the project scope and guidelines.
- Coordinating and monitoring of project engineers/ architects to ensure consistency and quality of work via regular meetings.
Communicating among all members of the project team to ensure the consistency and quality of work via regular meetings
Communicating among members of the team to ensure the consistent application of project standards, schedules and date decisions

Tre Dugal, PE

Site Master Planner

As the director of civil/municipal engineering, Tre' has extensive project management experience including site/civil engineering, storm drainage design, hydraulic engineering, parking lot design, roadway design, transportation planning, and environmental studies.

Greg Presnell

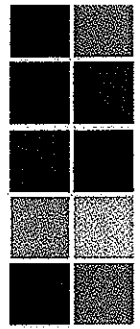
Site Designer

Greg Presnell began his career in 1999 and currently provides site design and management services. He specializes in site grading and drainage, site layout, erosion prevention, and stormwater pollution prevention plans, but is also an experienced client coordinator and construction inspector. Greg joined Wilbur Smith Associates in 2004 and works in the Knoxville office as a site design engineer and project manager. Throughout his career, Greg's projects have included schools, resorts, business parks, and hotels. At WSA, he has served as designer and project manager for three key projects including: Wilderness at the Smokies, the state's first, unique water park and resort center; Parkside Business Center, which involved three office buildings with underground detention allowing offsite stormwater onto the property; and Belle Island Village Hotel, which called for a large development to be built on an island in the Little Pigeon River. The challenges and uniqueness of each of these three projects demonstrates his ability to apply his expertise and successfully manage projects to fit the needs of WSA's diverse clients.

Wesley Stafford, PE, AICP

Project Director

Wesley Stafford has more than 23 years of experience in highway planning and design. As a consultant he has been the project manager for numerous traffic engineering projects and environmental documents, including developing The West Virginia Statewide Multimodal Plan. His previous experience includes working as both a consultant and with the states of West Virginia and North Carolina. He led NCDOT Statewide Planning Branch's Small Urban Unit. The unit provided multimodal transportation planning expertise to municipalities across North Carolina and plans for the coordinated development of the transportation systems for counties, planning regions, and municipalities on a statewide basis. Mr. Stafford is the project manager for the West Virginia Multimodal Statewide Transportation Plan and has been instrumental in the Beckley Z-Way Design Study, and WWW Transportation Study. Mr. Stafford also worked with NCDOT staff to develop traffic forecast for planning and design branches of the department.



Larry Clegg
QA/QC Manager

Larry Clegg began his career in 1987 as an engineering assistant. He joined WSA in 2000 in the Charleston, WV office as a highway design manager, where he focused on providing design services relating to all aspects of highway design. He now serves as a senior project manager, where his major duties include managing budgets, writing proposals, and attending proposal interviews. Larry's contributions to WSA involve a wide range of design projects from studies to final design and have typically included small realignments, interstate weigh station, rural expressways, and urban interstates. He has earned respect in his field, in part, by his strong relationships with clients, as well as his comfort level in all phases of highway design from conception to completion on just about every classification of facility. With significant experience in developing budgets, scopes, and schedules and matching to the firm's resources, Larry has learned to understand and meet the client's needs.

Ron Williams
Utilities /Right of Way /Surveying

Mr. Williams has over 40 years of right of way and surveying experience. He currently serves as Senior Right of Way and Utility Engineer, in which capacity he is responsible for coordination and supervision of all right of way development for Charleston, WV office and reviewing right of way projects under statewide agreement with WVDOH.

Wes Simpson, PE
Hydrology

Mr. Simpson has over 14 years of experience designing award winning bridge and structure projects. His bridge design experience includes developing plans for new and rehabilitated structures. His design experience ranges from a two-cell concrete box culvert, to 1400-foot-long curved bridge. His experience includes concrete, steel and timber bridges for hydraulic, overpass, and pedestrian structures. He has extensive experience conducting structural analysis, hydrology and hydraulic analysis, hydraulic permitting, and is fluent in numerous software packages, which apply to structural design.

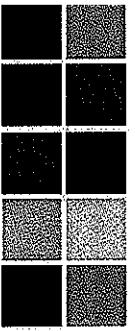
James Vinson
Geotechnical/Materials Testing

James Vinson began his career in 1997, providing geotechnical engineering and project management services. He now serves as the geotechnical business unit manager for Wilbur Smith Associates' Mid South Region, based in Knoxville, TN. He is responsible for business development, project scheduling, client and subconsultant coordination and communication, and project budgeting. James has continued to add value to the firm's projects, providing expertise in developing and coordinating subsurface exploration programs, performing engineering analyses, and preparing recommendations to mitigate challenging situations. In addition, he has served as the a geotechnical project engineer or lead engineer for the following major projects: SmartFIX40, the reconstruction and widening of I-40 through downtown Knoxville and the costliest TDOT project in history; the construction of the new U.S. Embassy in Khazakstan's new capital of Astana; and a complex and unique design-build project to complete the final 4.3-mile segment of the Natchez Trace Parkway in Mississippi.

Reason W. Martin
Engineering Designer

Mr. Martin is a civil engineering technology graduate from WVU Tech. He has 10 years of experience in surveying, design, drafting, and construction inspection in West Virginia and Virginia. His recent experience includes the U.S. 50 Traffic Operation and Safety Study in Mineral and Hampshire counties, U.S. 522 in Berkeley Springs, U.S. 220 Moorefield Junction Road in Hampshire County, and Route 2 Widening in Brooke County.

GSD116434: REDESIGN OF EAST CAMPUS PARKING LOTS
Department of Administration, General Services



2 / Project Management and Design Team

Jason B. Huddleston
Senior Engineering Technician

Mr. Huddleston is a 2001 graduate of WVU Tech and has eight years of experience as an engineering technician/designer. He has experience in roadway design, storm sewer design, structural drafting, and ditch design. In addition to his West Virginia work, Mr. Huddleston also has experience in Michigan, Arkansas, Virginia, Ohio, and Utah. Mr. Huddleston participated in the Gilliam Arch Bridge Replacement project in Mercer County along with other bridge projects in Virginia and Utah.

George Joseph Crittenden

Senior Designer

EDUCATION

Computer Programming Course Study
Murray State University 1976

Civil Engineering and Applied
Mathematics Course Study
Kentucky State University 1987-1989

Civil Engineering Course Study
Tennessee State University 1989-1992

Nashville Institute of Technology 1991

Civil Engineering Course Study
West Virginia Institute of Technology
1992-1994

YEARS OF EXPERIENCE

With WSA: 1
Total: 34

SPECIALTIES

Project management, grading plans,
roadway design, hydraulics, storm
sewers, roadway geometry,
construction inspection

Mr. Crittenden has 34 years of experience in providing project management, client coordination, project design, design studies, value engineering, construction inspection, and surveying for correctional facilities, government buildings, private developments, highways, airports, residential subdivisions, and abandoned mine land reclamation projects. Mr. Crittenden has been involved in grading, drainage, new highway design, roadway improvement projects, and bridge replacement projects in multiple locations within WV, TN, GA, SC, NJ, PA, and KY. Many of the projects were of a "fast track" nature and contained storm sewer design, NPDES permitting, pavement marking, earthwork calculations, utility relocation plans, and signing.

WORK EXPERIENCE

Green River Correctional Complex, Central City, KY: Developed grade and drain plans for the correctional complex. The grading plans included access roads, common areas, parking areas, line of sight, consideration for utility locations, special undercut/backfill for structure locations, and coordination with geotechnical engineers to ensure structure stability for the planned automated locking systems.

The construction phase included inspecting the installation of an under drain system, storm drain system, compaction testing, and the special undercut/backfill at the structure locations.

Capital Complex, Frankfort, KY:

Survey layout for the construction phase of the complex's improvements to the Capital grounds. The survey layout included road layout, curb returns, and landscape features.

Yeager Airport, Charleston, WV:

Senior Designer for the reconstruction of the general aviation runway. The project included plans, specifications, NPDES permit, and construction inspection.

Hartman Run, Morgantown, WV:

Pavement drainage and storm sewer design for a bridge replacement project located in Morgantown, WV.

Huntington Industrial Center Access Road, Huntington, WV:

The project extended 8th Avenue into the Hunting Industrial Center. The curb and gutter project contained grade, drain, storm sewer, water line relocation, signing, and pavement markings.

Terry Branch Portals and Refuse Remediation, WVDEP, Wyoming County, WV:

Project Manager responsible for delineation of access road into site, demolition and disposal of fan and fan house, reclamation of refuse pile, design of four bat gate mine seals and six dry mine seals. Addressed on-site drainage concerns, and re-vegetated all areas disturbed by construction. The project included producing grading plans, drainage plans, erosion control plans, and specifications.

Scott Tipple, Barbour County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents to correct two areas impounding water and coal refuse. The project included producing grading plans, drainage plans, erosion control plans, and specifications.

Red Star Refuse and Coke Ovens, Fayette County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents for backfilling, soil covering and re-vegetation of over 60 abandoned coke ovens and three refuse piles. The project included producing grading plans, drainage plans, erosion control plans, and specifications.

Minden Mine Dump, Fayette County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents to install wet seals to permanently lower the water level in the mine workings, to establish positive drainage to a nearby stream, to re-grade and stabilize the refuse piles, and provide soil cover and re-vegetate the refuse and all disturbed areas. The project included producing grading plans, drainage plans, erosion control plans, and specifications.

Little Slate Creek Refuse Pike, McDowell County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents to re-grade the refuse pile to establish stable slopes and establish drainage to a nearby stream. The project included producing grading plans, drainage plans, erosion control plans, and specifications.

Marrowbone Water Line Extension, Mingo County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents to extend a water line into the Marrowbone area where the groundwater was found to be contaminated by mining activities.

Glen Fork/Sabine Area Phase II Abandoned Mine Lands Water Feasibility Study and Water Line Extension, Wyoming County, WV. Senior Design Technician responsible for interviewing all residents about the quantity/quality of their water source and updating maps to show houses/businesses to support an AML&R grant request to OSM to extend or install water systems in these impacted areas.

Tabler Station Connector, Corridor H, West Virginia Department of Transportation Division of Highways: Developed complete highway construction and right-of-way plans for the Tabler Station Connector, Corridor H, and the Jones and Laughlin value engineering plans. The projects included grade, drain, storm sewer, water line relocation, sanitary sewer relocation, pave, pavement markings, and NPDES permitting.

Bridge Replacement Project, Marlton, NJ: Assisting the Marlton, NJ office in a bridge replace project for Route 206 in Montgomery Township Somerset County, NJ. This project included calculations in the change of the impervious areas before and after construction.

Bridge Replacement Projects, Pennsylvania Department of Transportation: Provided assistance on two bridge replacement projects. The project included HEC-RAS modeling.

Beckley Z-Way Study, Beckley, WV: Developing the Phase 2 portion a design study for the WVDOT to improve the traffic flow near Beckley, WV.

The Summit National Scout Reserve: Reviewing plans for service road layout, suitability for design vehicles, and primary trail hiking locations.

Highway Construction and Right-of-Way Plans, West Virginia Department of Transportation Division of Highways: The projects included the Arlington Truss bridge replacement approaches, 5 & 20 Mile Creek bridge replacement approaches, Jaeger Pony Truss bridge replacement approaches, Litwar bridge replacement approaches, the Merrick Creek Connector Interchange, Huntington Industrial Center Access Road, Strawberry Road, Dutch Hollow Road, Rowlesburg Railroad Truss Bridge approaches, Corridor H (U.S. 48) near Scherr, Mt. Gay Bridge near Logan, and Honey Creek Bridge (received an Engineering Design Award) near Chimney Corner in Fayette County. Additionally, produced a set of Demolition Contract Plans for a section of WV 10 near Huntington, WV.

U.S. 52 from Fort Gay to Crum, Star City to Osage U.S. 19 and Oak Hill to Fayetteville U.S. 19: Developed highway location studies and managed a Transportation Need Analysis Study for U.S. 19 from Bradley to the New River Gorge Bridge, a distance of approximately 20 miles.

Richard B. Russell Lake Road Relocations, Calhoun Falls, GA: Construction inspection for seven road and bridge relocations due to construction of the Richard B Russell Dam and Power House. The project consisted of construction inspection of earth excavation, earth embankments, bridge substructures, and bridge superstructure construction.



Merrick (Tre') A. Dugal, III, PE

Director, Civil/Municipal Engineering

Education

BS, Civil Engineering,
Louisiana State University,
1989

Registrations

Professional Engineer:
North Carolina, 1997
(#022609)

Years of Experience

Total Years: 21.6
WSA: 21.6

Areas of Specialization

Site/civil engineering, parking
lot design, roadway design,
storm drainage design,
hydraulics, transportation
planning, environmental
studies, and structural
inspection and analysis

Professional Affiliations

American Society of Civil
Engineers

Awards

American Society of Highway
Engineers, Carolina Triangle
Section, Member of the Year
2003

As the director of civil/municipal engineering, Tre' has extensive project management experience including site/civil engineering, storm drainage design, hydraulic engineering, parking lot design, roadway design, transportation planning, and environmental studies.

Site Development and Parking Design

Sandhills Community College, Logan Hall, Pinehurst, NC (2010-2011) –

WSA teamed with Wright Architecture, PA on this new 35,000 SF, 2-story general classroom building and 155 space parking lot on the Sandhills Community College main campus. Tre' served at the project manager for site/civil design improvements including grading, drainage, water and sewer utility extensions, erosion control and storm water bioretention cell design. He coordinated all agency reviews and permits, as well as local Town of Southern Pines planning and engineering departments. Tre' also performed construction administration duties. *Total Fee/WSA Fee: \$53,280*

BB&T Operations Center Improvements, Wilson, NC (2009) – WSA

provided traffic, access and circulation planning, and design services as part of a security initiative to consolidate access into the site to one central location. Three existing driveways were eliminated and a new central driveway with guarded and gated access was provided to the site. A guard house was installed and card readers with reversible lanes to accommodate the peak hour traffic entering and exiting the site. Steel gate and fencing improvements were made and a designated bicycle parking area was added. Delivery truck access and circulation was studied to accommodate the large trucks entering the site. Tre' was the project manager responsible for the design efforts that included a new concrete driveway with reversible lanes and gate access. *Total Fee/WSA Fee: \$16,223*

Greensboro Transit Authority Maintenance/Operations Transit Facilities and Administrative Offices, Greensboro, NC (2009-2010) –

Project manager for the site/civil portion that includes design of the site features; a 200-plus-space employee parking lot, 35-space staff and visitor lot, 110-space bus parking lot, driveway and sidewalk access including ADA accessibility, water and sanitary sewer service connections, grading and storm drainage, erosion control, and fuel tank areas. This new 42,000-square-foot administration/operations building and maintenance shop includes eight bus service bays, two vehicle wash and fueling/cleaning bays, inspection pits, parts warehouse and shop, and administration and operations office space. Services also include surveying, wetland delineation, FEMA Conditional Letter of Map Revision for floodplain impacts, permitting, and coordination with the City of Greensboro for all submittals. *Total Fee/WSA Fee: \$182,240*

Sandhills Community College, Hoke Center Phase III, Raeford, NC (2008-2010) –

Project manager responsible for site work for the 14,000 square foot Early College Building. Design elements included roadway extensions, a 96 space parking lot, site grading, storm drainage design including a wet detention pond and water, and sanitary sewer ties. *Total Fee/WSA Fee: \$23,240*

2008 Bond Projects, Franklin County Schools, Franklin County, NC (2008-2009) – Project manager participating in site/civil design services for

improvements to four Franklin County Schools as part of the 2008 Bond Package. Design elements included the layout of new buildings and additions, sidewalks, driveway and parking modifications, water and sanitary sewer improvements, storm drainage modifications and improvements, and erosion control. All applicable permits were coordinated with NCDENR Land Quality Section and local authorities. Landscape design was also included at each site. *Total Fee/WSA Fee: \$51,675*

Sandhills Community College, Heutte Hall Site Work and Sewer Improvements, Pinehurst, NC (2004-2008 design; 2009 construction) –

Project manager responsible for the design and development of site and storm drainage improvements for a new landscape horticulture classroom building. Included in this project was the design of approximately 1,250 feet of 6-inch and 8-inch gravity sanitary sewer line to connect the new building and an adjacent existing building to the existing campus sanitary sewer system. These buildings currently operate with on-site septic systems. Also included was the design of approximately 250 feet of double 4-inch concrete duct bank and approximately 250 feet of 6-inch and 3-inch water line. Construction administration was also provided through project closeout. *Total Fee/WSA Fee: \$34,644*

Harnett Central High School Improvements, Angier, NC (2008-2009) –

Project manager responsible for the layout and design of a new staff parking lot, new pavement design in the shops area, and new sidewalks meeting ADA standards around each addition, and 900 feet of sanitary sewer system extension to serve the new class room addition and provided new water and sewer service to the auxiliary gymnasium. Storm drainage design efforts consisted of modifying the existing system to accommodate the new additions and included the design of a bioretention pond as a stormwater management devise to meet the requirements of the Storm Water Phase II post construction guidelines. Erosion control plans and permits were prepared and all applicable permits were coordinated with NCDENR Land Quality Section and Division of Water Quality and were approved. Construction administration is being provided to ensure the project is built in compliance with the design plans and specifications. *Total Fee/WSA Fee: \$39,950*

Sampson County Schools, Midway Middle School, Sampson County, NC (2007-2008) –

Project manager responsible for survey and design services related to converting the front entrance and parking areas of an existing high school to accommodate a new middle school. Design elements included the layout and design of a new staff and visitor's parking areas, bus parking, entry drives, student drop-off zone, and bus drop-off loop. WSA performed off-site roadway widening work to allow for left and right turn lanes and prepared driveway permits. *Total Fee/WSA Fee: \$39,500*

Fayetteville Technical Community College, Bulla Parking Lot, Fayetteville, NC (2006-2007 design; 2008 construction) –

Project manager responsible for the surveying, geotechnical investigation, site/civil design, and landscape design related to a new 400-space porous pavement parking lot. Project included porous pavement design, using infiltration to treat storm water runoff and prevent excessive runoff from leaving the site. Storm drainage calculations, erosion control plans, lot layout, and landscaping elements were coordinated with the City of Fayetteville and submitted for approval and permits with the city. Construction administration was provided on this project, as well as full

coordination with the State Construction Office. *Total Fee/WSA Fee: \$65,040*
Construction Cost: \$564,190

Chatham County Schools, Chatham County, NC (2006-2007 design; 2008 construction) – Project manager responsible for design and construction inspection efforts associated with the widening of Alston Bridge Road and South Second Avenue and the realignment of Pony Farm Road as part of the new Virginia Cross Elementary School in Siler City, NC. Design efforts included providing roadway widening and additional turn lanes per NCDOT standards. Construction administration and inspection services were also performed on this project. *Total Fee: \$91,550 WSA Fee: \$78,310 Construction Cost: \$680,000*

Sampson County Schools, Midway and Union High Schools, Sampson County, NC (2005-2008) – Project manager responsible for site/civil design on two new 1,000-student high schools for the Sampson County School System. Midway High School is located near Spivey's Corner, NC and Union High School is located near Delway, NC. Design elements included the layout and design of student parking, staff and visitor's parking areas, bus parking, entry drives, student drop-off zone, bus drop-off loop, and perimeter service/fire access route. WSA coordinated design with NCDOT Municipal and School Transportation Assistance and prepared all driveway and encroachment agreements. WSA designed the water service, on-site drip irrigation systems, storm drainage system including detention ponds, erosion control design, and permitting including athletic field layout and grading. Off-site roadway improvements included a traffic impact analysis, signal design, lane widening, and the addition of turning lanes required to meet current NCDOT standards. WSA also performed construction administration services. *Total Fee/WSA Fee: \$205,000 (Midway) and \$176,000 (Union)*

Gaston College Driving Track, Dallas, NC (2005-2007 design; 2008 construction) – Project manager responsible for site/civil design of an asphalt driving track and driveway. The track consists of an asphalt paved area approximately 1,250 feet long and 108 feet wide for the college to use as for safety training. Design efforts included storm drainage design, pavement layout, culvert design for creek crossing, and coordination with agencies. Construction administration was provided on this project as well including full coordination with the State Construction Office. *Total Fee: \$61,652 WSA Fee: \$59,341*
Construction Cost: \$658,910

Rowan-Salisbury School System, Elementary School Site Design, Rowan County, NC (2003-2006 design; 2007 construction) – Project manager responsible for site layout and design of three new elementary schools (700 students each) in Rowan County. Design efforts included bus loop and parking layout and design, site drainage and grading, and utility work (including on-site water and waste water system on one site). WSA also performed coordination with NCDENR for erosion and sediment control permits and NCDOT for driveway and street access permits. Construction administration services were also provided for this project. *Total Fee/WSA Fee: \$138,230*

Sandhills Community College, Hoke Center Phase II, Raeford, NC (2005-2007) – Project manager responsible for site work for a new building and approximately 85 parking spaces on this satellite campus. Project included entrance drives, parking lots, storm drainage, and utilities. Developed

construction plans and specifications for site work related to paving, drainage, utilities, grading, erosion control, and striping and signage. Construction administration was also included. *WSA Fee: \$10,150*

Sandhills Community College, George W. Little Hall (Education Building), Pinehurst, NC (2003-2006) – Project manager responsible for the site/civil design of this 45,000-square-foot facility housing the Engineering Technology and Culinary Arts Programs. Site work included the design of a truck loading dock area and entry road that ties to the Dempsey Student Center access road. An outdoor patio with external stairs and ramps meeting ADA standards along with sidewalk layouts was also included in the design. Storm drainage design and erosion control permitting, as well as utility coordination and connection and construction administration were also part of this project. *WSA Fee: \$9,500*

Sandhills Community College, Athletic Fields, Pinehurst, NC (2004-2005) – Project manager responsible for designing four asphalt tennis courts, an outdoor asphalt basketball court, a softball field, and a soccer field. Construction administration was also provided for this project. *Total Fee/WSA Fee: \$11,300*
Construction Cost: \$295,205

Sandhills Community College, Dempsey Student Center, Pinehurst, NC (2003-2005) – Project manager responsible for design and development of site civil work including storm and sanitary sewer relocations, service drive and loading dock area, and all other related site civil issues for the 47,000-square-foot Dempsey Student Center at Sandhills Community College. WSA also provided construction administration services for this project. *Total Fee/WSA Fee: \$60,400*

Sandhills Community College, South Campus Parking Lot, Pinehurst, NC (2003) – Project manager responsible for design plans for a new 235-space parking lot for Sandhills Community College. The additional parking was needed to keep up with increased enrollment. The project also improved campus circulation by providing a connection of two existing dead end parking lots on the south side of campus, effectively forming a “loop” around campus. *WSA Fee: \$27,100*

Sidewalk Improvements, Wake Forest, NC (2002) – Project engineer responsible for preparing design plans for the layout and design of approximately 3,500 feet of sidewalk at four locations within the Town of Wake Forest. WSA provided data collection, preliminary design, design documents, and encroachments and permits. *WSA Fee: \$11,900*

Sandhills Community College, Drainage and Parking Lot Improvements, Pinehurst, NC (2002-2003) – Project manager responsible for the design plans for the asphalt overlay and improvement of the campus’s main entrance drives and interior roads; the Aristotle, Basie and Gauguin student parking lots; the Curie faculty and staff parking lot; and the visitors’ parking area. The project included the removal of approximately 14,700 linear feet of deteriorating asphalt and concrete curbing and replacement with new concrete curb and gutter and approximately 33,500 square yards of asphalt overlay including repairing damaged asphalt sections and crack sealing. Also included in the design was a new 75-space expansion of the Gauguin Parking Lot. *WSA Fee: \$41,246*

Sandhills Community College, Master Plan Update, Pinehurst, NC (2001-2002) – Project manager responsible for the preparation of the campus long-range master plan. Responsible for vehicle access and circulation as well as parking needs. Worked with the Town of Southern Pines to determine future parking need for ultimate build out of the campus. At the time of the project, Sandhills Community College enrolled approximately 3,000 students and had a parking capacity of approximately 1,600 spaces. *WSA Fee: \$2,670*

NC State University, Intermodal Transit Center, Raleigh, NC (1998-2001) – Project manager responsible for the conversion of Founder Drive into an Intermodal Transit Center with four bus shelters and a passenger drop off area. Included was the design and layout of roadway and site features, drainage, erosion control, advertising and bidding, and construction administration. Project involved coordination with Department of Administration State Construction Office. *WSA Fee: \$853,030*

Sandhills Community College, Hoke Center Phase 1, Raeford, NC (1999-2000) – Project manager responsible for design of entrance drive, parking lot and utilities for this satellite campus for SCC. Developed construction plans and specifications for site work related to paving, drainage, utilities, grading, erosion control, and striping and signage. *WSA Fee: \$17,500*

Sandhills Community College, Landscape Gardening and Visitors Center, Pinehurst, NC (1998-1999) – Project manager responsible for design of entrance drive and parking lot for Landscape Gardening and Visitors Center. Developed construction plans and specifications for all site work related to paving, drainage, utilities, erosion control, and striping and signage. *WSA Fee: \$15,885*

Sandhills Community College, Parking Lot and Walking Track, Pinehurst, NC (1996-1997) – Project engineer responsible for preparation of construction drawings and contract documents for a 308-space student parking lot and recreational walking track. The project included the layout of parking, access drive and walkways, field surveys, grading, pavement design, landscaping, lighting, cost estimating, advertising, and bidding. Designs were prepared for stormwater drainage system and erosion control, including associated permits. *WSA Fee: \$45,780*

Chestnut Street Parking, Winston-Salem, Forsyth County, NC (1996-1997) – Project engineer responsible for designing the storm drainage system for a 360-space surface parking lot for Forsyth County in downtown Winston-Salem, NC.

Harnett County Schools, Harnett County, NC – Project manager responsible for site/civil work related to additions and renovations to five elementary schools in Harnett County. Work included storm drainage, utility coordination and design, grading, and all other site related work. Limited construction administration was provided.

University of Texas Medical Branch Parking Lot, Galveston, TX – Project engineer for the design of a 320-space employee parking facility. Project responsibilities included design and development of parking lot geometry, grading, storm sewer layout plans, and calculation of the quantities and cost

estimates.

Gessner Park and Ride Facility, Houston, TX – Project engineer for the design of a park and ride facility on a nine-acre tract of land in Houston for the Metropolitan Transit Authority of Harris County. Project responsibilities included layout and design of a 450-space surface parking lot, internal roadways, drainage, and other site improvements.

Consolidated Support Facility; Altus Air Force Base, OK – Project engineer responsible for site development, design of 140-space surface parking, storm drainage and grading, utility modification, and site demolition for the construction of 2-story building for 97th Air Mobility Wing.

University of Texas Medical Branch, Galveston, TX – Project engineer for the preparation of designs for a cul-de-sac to facilitate patient drop-off due to the closure of Texas Avenue.

El Metro Bus Maintenance Facility, Laredo, TX – Project engineer who prepared layouts and designs for an 80-space surface parking lot, perimeter fence, storm drainage, utility modifications, and other site improvements for the renovation and expansion of an existing bus maintenance facility for the City of Laredo.

Intermodal Transit Center, Laredo, TX – Project engineer for the design of an intermodal bus facility including a 5-story parking garage in downtown Laredo. Project responsibilities included the layout and design of the ground floor of the center which included bus and vehicle entrances and exits, sidewalks and handicap access ramps, storm drainage, utility modification, and other related site improvements.

Group Headquarters Facility, Sheppard Air Force Base, TX – Project engineer responsible for the design of a entrance drive and entrance ramp meeting ADA requirements and modifications to the existing parking lot, sidewalks, and utilities to facilitate additions and alterations to the Group Headquarters Facility.

Roadway Design

I-485 Charlotte Outer Loop Design-Build, Mecklenburg County, NC (2010-2014) – This 5.1-mile section will extend the northern urban loop around Charlotte and part of Huntersville. The project includes an 8-lane freeway on new alignment from west of NC 115 to west of I-85. As the QA/QC manager and a roadway engineer, Tre' is responsible for the overall quality assurance and control of the project design. He also participated in roadway design, right-of-way plans, profiles, and cross sections.

Total Fee/WSA Fee: \$11,340,517/\$7,125,017

Shallowford Road and Williams Road Roundabout Design, Lewisville, NC (2009-2010) – Project Manager responsible for the design and preparation of right-of-way and construction plans for a new roundabout intersection improvement project for the Town of Lewisville, NC. Includes a 25 percent layout and design of a dual-lane roundabout for the future ultimate design for right-of-way purposes and the final design and specifications for an interim single-lane design. Coordinated design efforts to meet NCDOT and USDOT,

FHA roundabout guidelines. *Total Fee/WSA Fee: \$61,705*

NC 294 Widening and Bridge Replacement (R-3622AB), Cherokee County, NC (2005-2006) – Served as project engineer responsible for the design and preparation of right-of-way and construction plans for roadway improvements related to the widening of approximately 3.5- miles of NC 294 in Cherokee County. The roadway included a 2-lane typical section which generally followed the existing alignment. Included were traffic control and pavement marking plans, as well as bridge plans for a replacement structure over Persimmons Creek. *Total Fee/WSA Fee: \$327,044*

Apex Peakway Roadway and Bridge Design over CSXT Railroad, Town of Apex, NC (2007-2008) – Project engineer participating in design of the Peakway segment from North Salem Street to New Dover Road. The project consists of approximately 3,850 feet of 2-lane roadway on a new location. There are two crossings of CSXT Railroad. One is a 204-foot bridge over the railroad and the second is an at-grade crossing near the Peakway intersection with North Salem Street. The 204-foot bridge uses a continuous deck and integral abutments to produce a jointless bridge. Aesthetic treatments included black anodizing of the handrail and black vinyl fencing. The bridge superstructure is comprised of 54-inch prestressed girders supported by post and beam bents on drilled piers and integral end bents on steel H-piles. The main span incorporated one additional future track. The project includes roadway design, bridge design, storm drainage, surveying, foundation recommendations, erosion control plans, permits, traffic signal design, and railroad coordination. *Total Fee: \$432,696 WSA Fee: \$412,682 Construction Cost: \$6,500,000*

Jones Sausage Road Widening and Realignment, City of Raleigh, NC (2002-2007) – Engineering designer responsible for storm drainage, erosion control, and utility relocation elements for the improvement of approximately 1.5 miles of Jones Sausage Road, between I-40 and Rock Quarry Road, from a 2-lane roadway to a multilane divided facility. Responsible for coordinating water and sewer utility relocations and adjustments for the City of Raleigh on approximately 2.5 miles of roadway improvements. Also coordinated with private utility companies to prepare utility relocation by other plans. The project includes a new structure crossing of Big Branch Creek and associated wetlands. Work tasks include alternative analysis, environmental documentation, permitting, public involvement, agency coordination, traffic control plans, erosion control plans, signal design, and preparation of contract documents. *WSA Fee: \$609,557*

High House Road Widening over CSX Railway, Town of Cary, NC (2000-2006 design; 2007 construction) – Project engineer who participated in the drainage design and plan preparation related to the widening of the existing High House Road to a multilane facility. The project included in the design was replacement of an existing 2-lane bridge with a new 7-lane bridge over CSX Railroad (one existing and one future track). The new bridge (168'-6") is comprised of a 3-span continuous steel plate girder unit. Post and beam bents on drilled piers and end bents supported on steel H-piles make up the substructure. Phased construction was used in order to maintain traffic on the existing bridge during construction. In addition to the roadway and bridge design, WSA's duties included drainage design, traffic control and pavement markings, public participation, and agency coordination. Other efforts involved coordination of

field survey activities, property plat preparation, and environmental overview.
WSA Fee: \$329,615 Construction Cost: \$6,441,063

Trinity Road Widening and Extension, Town of Cary, NC (2002-2007) – Project manager responsible for studying alternatives analyses and designs to widen and extend approximately 1.25 miles of Trinity Road for the Town of Cary. Phase I consisted of preliminary planning and analysis of three alternatives. Functional and preliminary bridge and roadway plans were prepared. The project also included a crossing of a multitrack rail corridor adjacent to East Chatham Street. Alternatives incorporated crossings of Walnut Creek and a future Town of Cary Greenway, and access was provided to the new State Capital Soccer Park. *WSA Fee: \$497,073*

Hornaday Road over Greensboro Western Loop, City of Greensboro, NC (2003-2006) – Project manager responsible for extending Hornaday Road to Chimney Rock Road. This project crosses over the City of Greensboro's Urban Loop Project just south of I-40. The project included roadway and storm drainage design and utility conflict coordination, as well as extensive coordination between NCDOT and City of Greensboro. WSA was also responsible for the preliminary and final design of a 612-foot bridge. The project also included MSE wall near both end bents. *WSA Fee: \$201,108*

South Elm/Eugene Street Widening, City of Greensboro, NC (2003-2004 design; 2005 construction) – Project manager responsible for utility coordination and project phasing to widen 3,000 feet of South Elm/Eugene Street, between the I-85 Bypass and Vandalia Road, to a multilane divided facility with a raised landscaped median. The project included a new 3-sided reinforced concrete culvert and intersection improvements, as well as permitting, agency coordination, traffic control plans, erosion control plans, signal modifications, and preparation of contract documents. The project design was completed on an accelerated schedule. *WSA Fee: \$283,824*

R-2911C U.S. 70 Widening and Norfolk Southern Railway, Cleveland, NC (2001-2004) – Project engineer responsible for design and plan preparation to widen U.S. 70 between S.R. 1001 and S.R. 1739 in Rowan County from a 2-lane to a 4-lane divided facility with approximately one mile of design including a curb and gutter section. Included design of 13 intersections. WSA prepared an alternate design to provide a reduced median width and allow accommodation for a divided roadway section under the existing Norfolk Southern bridge crossing. This design was accepted by the Department and not only eliminated the need to replace the railway bridge but also avoided impacts to a historical property on SHPO's list. Substantial project cost savings were realized. The project included hydraulic designs and development of traffic control and pavement markings. *WSA Fee: \$342,036*

Cooper River Bridge and Roadway Design, Charleston, SC (2000-2002) – Project engineer participating in design and plan preparation related to roadway improvements and interchange layout for the northern interchange of U.S. 17/SC 703 on the Mount Pleasant side of this major river crossing. To assist the South Carolina Department of Transportation in evaluating the design-build team's compliance with the stringent seismic design and for the overall adequacy of the large and geometrically complex structures, WSA provided design review services as part of the TY Lin/HDR Joint Venture. WSA specifically reviewed

the Charleston and Mount Pleasant interchanges and approaches and all the roadway and civil design aspects of the project. WSA also reviewed bridge plans and design computations for design criteria compliance, design quality control and quality assurance, and provided record comment on these items to SCDOT and the design-builder. Due to the leading edge nature of this major project, the design often went beyond traditional specification compliance. Virtually all recently developed design trends were incorporated selectively into the design, requiring WSA's design review team to work closely with the contractor's engineer-of-record to implement these state of the art design features into this world-class structure safely. WSA was involved in all aspects of the design review process, from evaluating designs for compliance with the design criteria, reviewing plans for conformance to the designs and SCDOT policies, to checking for coordination among the various disciplines whether roadway, geotechnical, structural, civil, etc. *Total Fee: \$1,698,000 WSA Fee: \$1,680,000*

Morrisville-Carpenter Road/Good Hope Church Road Realignment, Cary, NC (2000) – Project engineer responsible for realigning Morrisville-Carpenter Road and Good Hope Church Road to meet the requirements of the town's transportation plan. Looked at various alternatives to minimize impacts to the surrounding community, which includes Good Hope Church and residences. *Total Fee/WSA Fee: \$10,000*

R-2206B NC 16 Bypass (NCDOT), Lincoln County, NC (1998-2002) – Project engineer participating in the design of roadway, intersection improvements, plans preparation, and quantities estimates on NC 16 Bypass from North of NC 73 to North of S.R. 1386 (St. James Church Road). This project was approximately five miles on new location and involved the design of two future diamond interchanges. *WSA Fee: \$346,082*

Grade Separation of Peace Street over Norfolk Southern Railway (NCDOT), U-3122, Thomasville, NC (1997-2002) – Project engineer for the preparation of alternatives and a categorical exclusion report for the construction of a grade separated crossing on Peace Street over the Norfolk Southern Railway. The second phase of the project included the preparation of right-of-way and construction plans for the bridge and roadway/intersection improvements. Developed drainage plans and calculations. Assisted in the design of vertical alignment including numerous cross street ties. *WSA Fee: \$310,946*

U.S. 311/Norfolk Southern Railroad (R-2712), Walkertown, NC (1996-2001) – Project engineer WSA was responsible for the design of an improved grade separation of a single track Norfolk Southern Railway over 2-lane U.S. 311. Work included roadway, trackwork, traffic control, and drainage design. Also, the design of a 4-span dual track railway bridge was included as a part of the project. Provided drainage calculations and assisted in design and plan preparation for dual track railroad structure over an ultimate 4-lane roadway section to improve the design speed and skew angle of the crossing. *WSA Fee: \$408,748*

U.S. 17 Elizabeth City Bypass (R-2514AB), Pasquotank County, NC (1995-1998 design; 2001 construction) – Project engineer responsible for design of this 5-mile freeway facility on new location. Project included a grade separation and a directional interchange at the existing U.S. 17 and NC 158. *WSA Fee:*

\$317,596

Walker Street Extension Feasibility Study, Cary, NC (2000) – Project engineer participating in development of various alternatives along with cost estimates for the extension of Walker Street between Chatham Street and Chapel Hill Road in downtown Cary. Alternatives involved crossing of CSX and Norfolk Southern Railway tracks and future TTA commuter rail tracks. WSA explored both overpass and underpass bridge options. The feasibility study included preliminary bridge layouts, construction cost estimates, construction phasing, railroad coordination, and final summary report. *Total Fee/WSA Fee: \$34,250*

Clements Ferry Road (S-33) and CainHoy Road (S-98) Widening, Berkeley County, SC (1997-2000) – Project engineer who prepared roadway design and construction plans for the widening of approximately 12 miles of roadway north of Charleston. The existing narrow, 2-lane facility was widened to meet design standards of the SC Department of Highways. *WSA Fee: \$1,646,295*
Construction Cost: \$9,000,000

Chowan River Roadway Approaches (R-2512A), Edenton, NC (1994-1996) – Project engineer responsible for design and preparation of plans for approximately one mile of multilane approach roadway design to a bridge replacement crossing of the Chowan River. *WSA Fee: \$1,583,656*

University of Texas Medical Branch, Strand Connection Closure, Galveston, TX – Project engineer who prepared designs for roadway modifications to a state highway and to Texas Avenue to facilitate the construction of a new chilled water plant.

Rear Apron Roadway, New Orleans, LA – Project engineer for roadway modifications and design of a new 4-lane roadway to provide access to the Mississippi riverbank area in downtown New Orleans. The modifications included design of a jersey barrier and fence system parallel to a railroad, the addition of service vehicle parking, widening of a portion of an existing roadway from two lanes to four lanes, street lighting, striping and signage, and installation of a railroad crossing signal crossing.

Utility Design/Coordination

Rock Quarry Road Widening, Raleigh, NC (2008-2009) – Project engineer responsible for coordination utility relocations for the widening of Rock Quarry Road from the intersection of New Hope Road to the Walnut Creek amphitheater entrance, a distance of approximately 5,000 feet. The existing bridge on Rock Quarry Road over Big Branch Creek was replaced with a new bridge that accommodates a 7-lane roadway (4 through lanes and 3 turning lanes) section with sidewalks on both sides. Project included roadway design, structure design, surveying, right-of-way, geotechnical, utility coordination, and hydraulic design. *WSA Fee: \$671,055*

Sandhills Community College East Campus Utility Renovation, Pinehurst, NC (2007-2008) – Project manager responsible for designing approximately 1,250 linear feet of 6-inch and 8-inch gravity sanitary sewer line to provide sewer service to two existing buildings on campus currently served by septic tanks. Duties included permitting with local agencies and construction

administration. *WSA Fee: \$16,912*

South Elm/Eugene Street Widening, City of Greensboro, NC (2003-2004 design; 2005 construction) – Project manager responsible for utility coordination and project phasing to widen 3,000 feet of South Elm/Eugene Street, between the I-85 Bypass and Vandalia Road, to a multilane divided facility with a raised landscaped median. Also responsible for storm drainage analysis for approximately 1-mile of the project. The project included a new 3-sided reinforced concrete culvert and intersection improvements, as well as permitting, agency coordination, traffic control plans, erosion control plans, signal modifications, and preparation of contract documents. The project design was completed on an accelerated schedule. *WSA Fee: \$283,824*

Planning and Environmental Studies

C-Tran Passenger Amenity Program (2010-2011) – Project manager responsible for passenger amenity improvements for 15 C-Tran locations in Cary, NC. Duties include surveying, site/easement research, engineering design, securing encroachment agreements from NCDOT, reviews with town staff and appearance committees, and construction administration. *Total Fee/WSA Fee: \$106,136*

CAT Passenger Amenity Guidelines and Standards (2009-2010) – Project manager responsible for developing a set of principles, guidelines, and standards for bus stop placement, design, and performance. Reviewing existing designs and practices used by the City in planning, policy, and design work with relation to safety, lighting, amenities, access to nearby origin/destinations, and ADA requirements. Design standards will also be developed as part of this study. *Total Fee/WSA Fee: \$37,767/\$24,867*

CAT Passenger Amenity Plan, Raleigh, NC (2008-2010) – Project manager responsible for passenger amenity improvements at 100 existing CAT bus stops. Amenities include concrete pads, sidewalks and handicap access, bus shelters, benches, trash receptacles, and signage. Duties include surveying; site/easement research; engineering design; securing encroachment agreements from NCDOT; reviews with city staff and appearance committees; and construction administration. *Total Fee/WSA Fee: \$283,832*

R-2514 U.S. 17 Jacksonville to New Bern, Onslow and Jones Counties, NC (1995-Ongoing) – Project engineer responsible for preparing an Environmental Impact Statement (EIS)/Section 4(f) and preliminary roadway designs. WSA was responsible for design of roadway alternatives, alternative comparisons, the preparation of an environmental impact statement (EIS)/Section 4(f), and preliminary roadway designs for the widening of U.S. 17 from north of Jacksonville to south of New Bern in Onslow and Jones Counties (approximately 22 miles). The project included the widening of existing segments along with numerous bypass alternatives around the towns of Belgrade, Maysville, and Pollocksville. The facility is planned as a 4-lane, divided high-speed roadway with full and partial control of access. The project also involved environmental justice, community impacts, noise, air quality, hydraulic analysis, archaeology, historical properties, water quality, erosion control, wetlands, and preliminary roadway designs, as well as an extensive public involvement program, which includes a toll-free hotline, newsletter, numerous small citizen group meetings, and public workshops. *WSA Fee: \$1,967,430*

Bridge Replacement Projects, B-3540, B-3541, B-3542, Kannapolis, NC (1997-2007) – Hydraulic engineer for final design and plan preparation for three municipal bridge replacements for the City of Kannapolis located on Mount Olivet Road over Three Mile Branch, Fairview Street over Chamber Branch, and Pump Station Road over Bakers Creek Branch. WSA was responsible for carrying the bridge replacements from the planning document phase thru plan and permit development to construction administration. WSA developed categorical exclusions, hydrology reports, bridge and culvert survey reports, plans, and permits. In addition, WSA coordinated all design disciplines including roadway, structures, hydraulics, drainage, traffic control, signings, pavement marking, and geotechnical. The bridge replacement projects received federal funding which required coordination and review with NCDOT and FHWA. *WSA Fee: \$308,739*

Hydraulics and Storm Drainage Design

Isaacson Boulevard Roadway/Structure Design, Greensboro, NC (2005-2010) – Site/civil project manager responsible for storm drainage and erosion control design of a new location roadway (Isaacson Boulevard); includes a 4-lane divided section with curb and gutter, sidewalk, and a minimum right-of-way width of 90 feet. *Total Fee/WSA Fee: \$230,769.64*

R-4707 U.S. 29/Reedy Fork Parkway Interchange Reconstruction, Greensboro, NC (2003-2009) – Project engineer responsible for the hydraulic study associated with three different interchange alternatives, including a single point interchange, partial clover leaf interchange, and a diamond interchange. The project involved bridge hydraulics (including scour analysis), preliminary and final bridge design, bridge geotechnical and foundation recommendations, erosion control details, and approach roadway plans for the construction of a new bridge on Reedy Fork Parkway over Reedy Fork Creek. *WSA Fee: \$750,000*

Fayetteville Technical Community College Drainage Study, Fayetteville, NC (2007) – Project manager; WSA was contracted by FTCC to analyze the runoff of an existing campus drainage system that drains to an existing City of Fayetteville drainage system near the intersection of Skye Drive and Devers Street. The intersection floods during certain rainfall events. WSA surveyed the storm drainage system and used field investigation along with GIS aerial mapping and as-built drawings to determine the amount of runoff contributing to the system. A drainage report was prepared for the City of Fayetteville to assist in the city in alleviating the flooding situation. *Total Fee/WSA Fee: \$19,170*

Regional Rail System, Railroad Trackway, Wake and Durham Counties, NC (2003-2005) – Project engineer participating in the design of part of a TTA project to construct approximately 35 miles of light rail between Raleigh and Durham. WSA performed design services for two sections totaling 11.75 miles of dual commuter rail lines. These include Section Five (4.7 miles) in Research Triangle Park and Section Seven (3.3 miles) in Cary. WSA was responsible for the designs for track alignment and grade, roadway improvements associated with at grade crossings, signal modifications, drainage design, erosion control, traffic control, specifications, and cost estimates. Design also included multiple retaining walls and four bridges. *WSA Fee: \$2,772,212*

Morningside Place Outfall Improvements, Houston, TX – Project engineer

responsible for the preparation of drainage improvements to Morningside Place Subdivision in southeast Houston and including approximately 1,000 linear feet of channel improvements, modifications to existing outfall drainage structures, and the raising and berming of three subdivision entrances in order to alleviate flooding of adjacent roadways and property.

Hydraulic Analysis Crane Island Branch, Houston, TX – Project engineer responsible for the preparation of a detailed hydraulic analysis using HEC-2 for the replacement of an existing bridge over Cane Island Branch. The analysis included developing a base model for existing channel conditions and a proposed model for the proposed bridge replacement. A floodway model was also developed.

Mason Creek Extension Study, Houston, TX – Project engineer responsible for a study conducted to develop an interim channel section for extending Mason Creek approximately two miles within the watershed. Responsibilities included hydrologic and hydraulic analysis (HEC-1 and HEC-2), as well as the design of the interim channel sections and two roadway crossings.

Southeast Service Center, Houston, TX – Project engineer responsible for storm sewer system, grading, and parking lot design for this City of Houston project.

South Tulsa Drainage Plan, Tulsa, OK – Project engineer responsible for a comprehensive master drainage plan was developed for a 3-square-mile watershed in Tulsa, OK. The plan included the identification of existing drainage facilities and flood problems; preparation of floodplain mapping; hydrologic and hydraulic analysis (HEC-1 and HEC-2); formulation of alternative flood control plans; and benefit-cost economic analysis of the alternative plans.

Market Street Bridges at Greens Bayou, Houston, TX – Project engineer responsible for the replacement of existing twin steel truss bridges with two 400-foot-long, prestressed, concrete beam bridges and approach roadways. Project responsibilities included the analysis and design of the roadway approaches and storm sewer system and the development of the traffic control and storm water pollution prevention plans.

Hydraulic Analysis Jackson Bayou, Houston, TX – Project engineer responsible for the preparation of a detailed hydraulic analysis using HEC-2 was conducted for the replacement of an existing bridge over Jackson Bayou. The analysis was performed to evaluate the upstream water surface impacts of the proposed structure in comparison to existing conditions. Recommendations were provided to alleviate adverse upstream impacts.

Farther Point Design, Houston, TX – Project engineer responsible for the analysis of alternative design concepts for re-channeling normal flows along Buffalo Bayou around a residential subdivision, and the preliminary inspection and analysis of an existing 200-foot, cast-in-place concrete bridge. The bridge analysis resulted in the finding that the substructure was in a failure mode due to undermined concrete piles.

Hydraulic Analysis Goose Creek, Houston, TX – Project engineer responsible for the preparation of a detailed hydraulic analysis using HEC-2 was conducted

for the replacement of an existing bridge over Goose Creek. The analysis was performed to evaluate the water surface impacts due to the proposed structure in comparison to the existing conditions. Recommendations were provided to alleviate adverse upstream impacts.

Traffic and Transportation Planning

Triangle Origin-Destination Surveys, Raleigh, NC – Project engineer responsible for study of motorist surveys at 30 locations throughout the Raleigh-Durham-Chapel Hill (Triangle) region for NCDOT.

Lubbock High Accident Study, Lubbock, TX – Project engineer who performed Benefit/Cost ratios, and calculated signal clearance intervals and intersection accident rates, analyzed accident characteristics, determined probable causative factors, and developed traffic engineering counter-measures.

Laredo Safety Work Order, Laredo, TX – Project engineer who used Highway Capacity Software to analyze intersections. Prepared designs for the proposed improvements.

Traffic Engineering Study at Various Intersections, Harlingen, TX – Project engineer who supervised field workers and performed traffic volume counts, ramp counts, and established signal timings. Summarized the field data and prepared drawings for the study intersections. Calculated capacity analysis and analyzed accident rates.

Traffic Access, Circulation and Parking Study, University of Texas Medical Branch, Galveston, TX – Project engineer for comprehensive traffic and parking study included data collection, analysis, and design recommendations for a 64-acre campus.

METRO Fixed Guideway, Houston, TX – Project engineer responsible for traffic engineering services for the METRO's proposed fixed guideway initial line.

U.S. 83 Traffic Signal System, Laredo, TX – Project engineer who assisted in the preparation of construction plans for the development of an interconnected traffic signal system involving 11 signalized intersections along a one-way couplet. TRANSYT-7F was utilized to develop and evaluate proposed traffic signal timings. Developed design plans and cost estimates for the proposed improvements.

Traffic Safety Study, Laredo, TX – Project engineer who summarized 12-hour vehicle turning movement counts and conducted traffic signal warrant studies for six intersections. Summarized and evaluated accident data and conducted intersection capacity analysis to establish recommended improvements.

U.S. 77/83 Ramp Analysis, Harlingen, TX – Project engineer responsible for field data collection including supervision of traffic volume counts for major interchanges. Also conducted inventory and assessment of existing roadway characteristics and traffic control devices. Conducted intersection capacity analyses for signalized intersections. Summarized and evaluated accident data.

Alamodome Stadium, San Antonio, TX – Project engineer who summarized

existing traffic volume data for key intersection within the proposed stadium study area. Developed traffic distribution for projected stadium events and conducted intersection capacity analysis to identify impacts. Determined stadium event parking needs based on evaluation of central business district parking availability and projected parking demand.

Jack Murphy Stadium Parking Study, San Diego, CA – Project engineer who conducted traffic access, circulation, and parking utilization studies for a range of stadium events. Evaluated traffic/volume capacity ratios for stadium entrances and key study intersection locations to establish improvement recommendations.

Shreveport Transportation Plan, Shreveport, LA – Project engineer who performed traffic operational analyses of intersections and developed recommendations for roadway and intersection improvements to provide acceptable levels of services.

Downtown Development District Parking Inventory, New Orleans, LA – Project engineer who inventoried parking for the Downtown Development District of New Orleans to analyze current and future parking needs.

Sherman-Denison Area Travel Surveys, TX – Project engineer responsible for the supervision of external field surveys, supervised editing, coding, and processing travel surveys.

Tyler Metropolitan Area Travel Surveys, Tyler, TX – Project engineer responsible for the supervision of the external roadside survey operations.

Woodward, Duncan, Wotonga, and Muskogee Turnpike Travel Surveys, OK – Project engineer responsible for the supervision of the origin-destination survey operations for the Oklahoma Turnpike Authority. Also provided assistance in the hiring and training of field personnel.

Brownsville Census Data Collection, Brownsville, TX – Project engineer who assisted in the development of a data base used to annotate workplace spotting maps in accordance with the U.S. Bureau of Census requirements.



Gregory (Greg) Presnell

Site/Civil Designer

EDUCATION

BS Civil Engineering
University of Tennessee 1990

REGISTRATIONS/CERTIFICATIONS

CPECS NATL 3197

EI TN 21703

YEARS OF EXPERIENCE

With WSA: 6.4
Total: 14.4

SPECIALTIES

Site design, grading, and utilities
(water and wastewater), erosion
prevention and sediment control,
and stormwater pollution prevention
plans.

TRAINING

GEOPAK Site Modeler training
course, Bentley; Pond Pak software
training

Greg Presnell began his career in 1999 and currently provides site design and management services. He specializes in site grading and drainage, site layout, erosion prevention, and stormwater pollution prevention plans, but is also an experienced client coordinator and construction inspector. Greg joined Wilbur Smith Associates in 2004 and works in the Knoxville office as a site design engineer and project manager.

Throughout his career, Greg's projects have included schools, resorts, business parks, and hotels. At WSA, he has served as designer and project manager for three key projects including: Wilderness at the Smokies, the state's first, unique water park and resort center; Parkside Business Center, which involved three office buildings with underground detention allowing offsite stormwater onto the property; and Belle Island Village Hotel, which called for a large development to be built on an island in the Little Pigeon River. The challenges and uniqueness of each of these three projects demonstrates his ability to apply his expertise and successfully manage projects to fit the needs of WSA's diverse clients.

No Rise Certification for Belle Island Entertainment and Retail Development, Pigeon Forge, TN: WSA performed an engineering analysis to see if the project would increase flood heights. Full planning and design services were provided to develop this 14-acre island, including underground drainage, utilities, retaining walls, and parking lots. As project manager, Greg was responsible for a grading design that would qualify the project for a no-rise certificate. He also provided the utility layout and design.

University of Tennessee-Knoxville Baker Center Site Design, Knoxville, TN: Greg provided site design services for the new Howard H. Baker Jr. Center for Political Science building, designed on an existing parking lot.

University of Tennessee Min Kao Electrical & Computer Engineering Facility Knoxville, TN: Greg provided site design services for this new facility built on an existing hillside. Services included grading, drainage, and utilities design. This project was the first LEED-certified project on the University of Tennessee campus.

Parkside Business Center Site Development Services, TN: WSA performed final site analysis and design for grading, paving, an extensive underground stormwater system, sanitary sewer, and waterline for this new development including three low-rise office buildings. Greg served as project manager, and was responsible for oversight of the project budget and schedule, grading and drainage design, and coordination with the architect providing building design.

Wilderness Event Center Hotel and Waterpark Site Design, Sevierville, TN: WSA provided site analysis and design for grading, paving, an underground stormwater system, sanitary sewer, and waterline for the project, which is adjacent to the Sevierville Events Center in Sevier County, east Tennessee's top tourist destination. Greg served as project manager, and was responsible for oversight of the project budget and schedule, grading and drainage design, and coordination with the architectural firm providing building design.

Wilderness Event Center Hotel and Waterpark Site/Civil Services, Sevierville, TN: The 234-room hotel is part of the Wilderness indoor/outdoor waterpark and resort in Sevierville, TN. WSA was responsible for site analysis, construction staking, grading, paving, stormwater sanitary sewer, and waterline. Greg served as project manager, and was responsible for oversight of the project budget and schedule, grading and drainage design, and coordination with architectural firm providing building design.

Sevier County Central Business District Improvements, Sevierville, TN: WSA assisted Sevierville, TN in developing a mega-tourist destination zone. WSA provided design, construction plans, and CEI services for various projects, including a new Events Center, hotels, and the Eagle's Landing Golf Course expansion. Greg provided grading and erosion control plans for the initial phase of this project. He served as project manager for the phase to add 18 new holes as well as improve the existing 18-hole course, creating a 36-hole championship course.

Etowah Recreation Center Master Planning, Site Design, and Grant Acquisition, Etowah, TN: This project involved master planning, obtaining funding, final site design, mass grading, and utility plans for a new community recreation facility complex. WSA secured a \$300,000 grant for the proposed center. As project manager, Greg was responsible for budget control and oversight of the grading and utility design, as well as coordination with the architect and project owner.

South Grove Shopping Center Site Development Services, Knoxville, TN: Site development services were provided for a 60-acre shopping center development. Services included a traffic impact analysis, site grading and drainage plan, utility service plan, parking layout, and design of roadway improvements. Greg coordinated with the developer client for site design, internal roadway layout, and water and sewer design.

Southeast Kentucky Agricultural and Exposition Center Site Design, Corbin, KY: Under contract to the architect, WSA provided conceptual site layout and utility design, including gas, water, and sanitary sewer, for the proposed arena. A water tank and booster system were also designed to increase capacity for the facility. As project manager, Greg was responsible for budget control and oversight of grading and utility design, as well as coordination with the architect and project owner.

84 Lumber Site Design, Knoxville, TN: Greg provided site design services for a proposed 84 Lumber location in Knox County's Westbridge Business Park. He was responsible for erosion prevention and sediment control measures and development of a SWPPP for site work undertaken.

Brinks Home Security Site Design, Knoxville, TN: Greg designed site grading for Brinks Home Security's location on Hardin Valley Rd. Design was completed in March 2005. He also oversaw development of a SWPPP and other erosion prevention and sediment control measures.

Lowes Site Design, Knoxville, TN: Greg performed site design tasks related to the construction of a new Lowes home improvement store on Chapman Highway south of Knoxville. Design requirements included development of a SWPPP.

Wesley O. Stafford, PE, AICP

Associate-In-Charge, Charleston, WV Office

EDUCATION

Coursework toward a Masters Degree in Transportation Engineering, North Carolina State University, Raleigh, NC, 1993

BS, Civil Engineering,
West Virginia University, Morgantown, WV, 1988

Coursework in Math and Computer Science, West Virginia State College, Charleston, WV, 1984

REGISTRATIONS

Professional Engineer:
VA (40573) 2004
NC (19007) 1993
MD (30782) 2004
WV (0416061) 2004

YEARS OF EXPERIENCE

Total Years: 23
WSA: 7

PROFESSIONAL AFFILIATIONS

American Institute of Certified Planners

Mr. Stafford has more than 23 years of experience in highway planning and design. As a consultant he has been the project manager for numerous traffic engineering project and environmental documents, including developing NEPA environmental documents from CEs to an EIS. His previous experience includes working as both a consultant and with the State of West Virginia and North Carolina. He led NCDOT Statewide Planning Branch's Small Urban Unit. The unit provided transportation planning expertise to municipalities across North Carolina and plans for the coordinated development of the road and highway systems for counties, planning regions, and municipalities on a statewide basis.

Traffic Engineering/Transportation Planning

West Virginia Multimodal Statewide Transportation Plan - Project manager responsible for the preparation of an integrated, fiscally-constrained, multimodal statewide transportation plan for the state. The work consisted of preparation of a transportation plan that identifies and recommends policies, strategies and projects to address multimodal transportation needs in West Virginia through a 25-year planning horizon. The plan was developed in coordination with each of the modal agencies within WVDOT. The plan identifies and analyzes opportunities for intermodal connections among the various modes and prioritizes and recommends those which were determined to be feasible. A financial plan was also prepared, as well as recommendations for monitoring, updating, and revising the plan on a continuing basis.

Beckley Z-Way Design Study, Raleigh County, WV - The West Virginia Department of Transportation/ Division of Highways selected Wilbur Smith Associates for the preparation of a Design Study for development of a highway facility by combining new and existing facilities for approximately 10.3 miles from Shade Springs to the interchange at Tamarack and ending at Van Kirk Drive in Raleigh County, West Virginia. Anticipated Notice to Proceed is June 2007. The project will include a comparative analysis of the proposed Beckley Z-Way and the East Beckley Bypass as well as other potential alternative using QRSII travel demand software. A design study will be completed to compare impacts and cost of each alternative.

District 2 Bridge Replacements Design-Build, Logan, Mingo, and Wayne Counties, WV (ongoing) - Project director for a design-build project to replace six bridges in southern West Virginia. The bridge replacements varied in length from 34 to 186 feet. WSA provided comprehensive engineering services to address the bridge and associated roadway design. These design services also included drainage, bridge hydraulics and scour analysis, and environmental planning.

Wood-Washington-Wirt (WWW) Multimodal Long Range Trans. Plan - Parkersburg, WV. The plan was developed to respond to the Metropolitan Planning Requirements identified in the Intermodal Surface Transportation Efficiency (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21). Conducted travel demand modeling using QRSII and developed recommendations for highway improvements through the design year.

Ohio River Bridge Study, Steubenville, OH – Developed a matrix to compare various proposed bridge locations using a variety of criteria that measured mobility, environmental impacts, safety, cost effectiveness and regional economic growth.

Mercer County Multi-Modal Transportation Plan, Mercer County, WV – Conducted travel demand modeling using QRSII and developed recommendations for highway improvements through the 2025 design year.

Traffic Impact Studies, various cities, WV, VA and OH – Used ITE Trip Generation to determine impacts to adjacent street system impacts caused by the development of discount stores, service station, office parks and residential development.

On-call traffic forecasting, Statewide Planning Branch of NCDOT – Work with NCDOT staff to develop traffic forecast for planning and design branches of DOT.

Larry P. Clegg, P.E.

Highway Design Manager

EDUCATION

BS, Civil Engineering, University of South Florida, Tampa Bay, FL, 1987

BS, Mining Engineering, West Virginia University, Morgantown, WV, 1981

REGISTRATIONS

Professional Engineer:

WV (14216) 1999

FL (44646) 1991

AK (11467) 2003

YEARS OF EXPERIENCE

With WSA: 6

Total: 20

SPECIALTIES

Project management, roadway design, hydraulics, storm sewers

Mr. Clegg has over 20 years experience designing and managing highway and transportation projects ranging in scope from sidewalks to large scale highway projects. This experience includes design projects for interstate resurfacing, widening, and new construction, interstate weigh-in-motion stations, major arterial reconstruction and widening, and new highway design, preliminary engineering studies and intersection improvements. He has been involved in all phases of highway design from conceptual engineering to final plans, and has direct experience with the many aspects of highway design such as geometric layout, drainage including bridge hydraulics and scour analysis, utilities, environmental permitting, traffic engineering, and pavement design.

Nitro, St. Albans Bridge Location Study, Kanawha County, WV - Roadway design engineer for the location study for the replacement of the 60-year old Henderson Bridge replacement. Responsibilities included vertical and horizontal alignments using a range of design speeds for three potential bridge locations within the Nitro-St. Albans area.

I-95 Express Toll Lanes, Baltimore County, MD - Lead highway reviewer for the I-895 Segment of the I-95 Express Toll Lanes Project as part of the General Engineering Consultant Services for the Maryland Transportation Authority. Also provided reviews for the I-695, and MD 43 segments. The project consisted of widening existing I-95 to add managed lanes and the reconstruction of three major interchanges to accommodate the toll way.

Gilliam Arch Bridge Replacement, Mercer County, WV - Project manager for bridge replacement project, including realignment of roadway approaches. The project included horizontal and vertical alignment study and design, along with bridge hydraulic studies and scour analysis.

I-69 Connector, Drew & Lincoln Counties, AK - Assistant project manager for an Interstate Highway design project in southeastern Arkansas. Project consists of five miles of highway design, 15 miles of drainage design including bridge hydraulic studies, and seven bridges.

King Coal Highway, Mercer County, WV - Project manager for a 3.2-mile expressway north of Bluefield, WV. Project consists of roadway, drainage, structure, and right of way design for the expressway. Project includes a half cloverleaf interchange.

US 50 Traffic Operation, and Safety Study, Mineral and Hampshire Counties, WV - Project manager for a 45-mile safety improvement study in the eastern panhandle of West Virginia. The study consisted of assessments of traffic, and highway geometry conditions, and provided recommendations for the remediation of potential traffic and safety issues.

US 220, Moorefield Junction Road, Hampshire County, WV - Project manager and design engineer for approximately 3500-foot-long alignment improvement project. Project included an alignment study to develop the most feasible configuration to improve deficient sight distance. Services provided include Roadway Plans, Drainage Design, and Signing and Marking Plans.

David G. Franke

Senior Electrical Engineer

EDUCATION

BS Electrical Engineering
University of Kentucky, KY, USA 1983

REGISTRATIONS/CERTIFICATIONS

PE FL 71336

PE SC 27862

PE IN PE11012208

PE TN 00113904

PE VA 0402048390

PEE KY 16911

YEARS OF EXPERIENCE

With WSA: 7.3

Total: 27.3

INDUSTRY AWARDS

PROFESSIONAL AFFILIATIONS

Illuminating Engineering Society of
North America, member

PUBLICATIONS/PRESENTATIONS

SPECIALTIES

Lighting calculations and analysis,
lighting design for roadways and
structures; knowledge of nationally-
recognized design standards, traffic
signal layout and plan design,
electrical analysis and design for
lighting and signals.

David Franke began his career in 1983 as an electrical designer. He joined Wilbur Smith Associates in 2006 in the Lexington, KY office as a senior electrical engineer. As a seasoned professional with vast experience in his field, David offers clients expertise in lighting calculations and analysis, as well as lighting design for various roadway types and land uses, and structures. He also is extremely well-versed in nationally-recognized design standards; designing traffic signal layouts and plans; and performing electrical analysis and design for lighting and signal designs.

Prior to joining WSA, David worked for the Kentucky Transportation Cabinet for 15 years where he developed specifications and performed design and construction plan preparation for signals, signal systems, lighting and data collection contracts statewide. His lighting experience includes lighting designs and construction plans for street, arterial, interchange, intersection, rest area, weigh station, navigation, parking lot, parking garage, as well as architectural and security lighting. In addition, he has performed point-to-point lighting calculations and analysis for utilizing conventional, offset, high mast, sign, underpass, floodlights, navigation, architectural, and a variety of other lighting fixtures. His depth of knowledge regarding nationally-recognized standards has fostered his ability to offer project teams a professional who is adept at ensuring these standards are met and quality products are delivered to clients.

David has earned respect in his field, in part, through his strong relationships with his clients and his ability to communicate effectively with them. His influence and experience extends outside the workplace through his affiliation with the Illuminating Engineering Society of North America.

WSA WORK EXPERIENCE

Honore Avenue/Pinebrook Road Extension (100155)

Project Location: FL US; Client:

This project, which involves design of a 3.8-mile, 4-lane divided urban roadway on a new alignment, requires very close coordination with FDOT District 1 for utilizing the limited access right-of-way at I-75. As the design engineer, David performed point-to-point lighting analysis, design, and preparation of corridor lighting plans. He also prepared lighting plans and estimates for conventional and offset lighting, including bridge lighting.

NYSTA Lock E-10 Site Improvements (101056)

Project Location: NY US; Client:

This project included the design of new lock house, site access roads, septic system, site improvements, and electrical upgrades. As the project engineer, David was responsible for preparing lighting plans and engineering designs for site and navigation lighting for this lock and dam.

Dollywood Traffic, Parking, and Transportation Study (101280)

Project Location: Pigeon Forge, TN US; Client: The Dollywood Company

The 10-year master plan included a new entrance road, traffic and parking projections, toll booth operation, road and bridge design, signing and striping for city streets, signal and pedestrian crossing design, and a shuttle system efficiency study. As the design engineer, David was responsible for point-to-point lighting analysis and design for the main entrance road, toll plaza entrance area, several large parking lots, and access roads.

Highlands Ridge Bike Park (101568)

Project Location: FL US; Client:

This site/civil design project included layout and design of a new 2.5-acre BMX bike park facility on an existing 8-acre park owned by the city. As the design engineer, David was responsible for point-to-point lighting analysis, design, and preparation of lighting plans and engineering design for site lighting throughout the park areas, including a new stunt bike arena. He also designed electrical plans for vending, a rest room, and office buildings.

Grand Cypress Resort Final Design (101718)

Project Location: FL US; Client:

David provided lighting analysis and electrical design for new decorative street lighting, pedestrian lighting, fountain lighting, landscape lighting, tunnel lighting, irrigation controls, receptacles, and distribution panels as part of this large resort's improvement project.

Northwest Extension of Mack Hatcher Parkway (101905)

Project Location: Franklin, TN US; Client: City of Franklin

WSA was contracted by the City of Franklin to design the new Northwest quadrant of Mack Hatcher Parkway including 3.6 miles of 4-lane divided roadway, two roundabout intersections, and twin 2,800 feet bridges. Each bridge features scenic overlooks with vertical monuments and decorative railing. As the design engineer, David performed point-to-point lighting analysis, and designed and prepared lighting plans for three intersections and their approaches, including two large roundabouts. He also prepared lighting plans and engineering design drawings for conventional lighting and designed pedestrian level lighting along two half-mile bridges.

Leader Hill Closure Traffic Study (102319)

Project Location: Lexington, KY US; Client: University of Kentucky

The impact of closing Leader Avenue to make room for the proposed UK College of Pharmacy building was studied. Following approval of the findings, WSA worked with various agencies to complete the formal request to permanently close Leader Avenue. ***((NEW TIME ON THIS PROJECT FOR THIS EMPLOYEE))***

KYTC Statewide Electrical 2008 (103249)

Project Location: KY US; Client:

As the WSA project manager, David worked with KYTC to provide traffic design services for various projects that included traffic signals, signal systems, roadway lighting or ITS plans, as well as other related project development activities. He also prepared design and construction plans for numerous signals around the state.

U.S. 290 Segment 7 Reconstruction (103671)

Project Location: TX US; Client: Texas Department of Transportation

As part of an engineering services contract, plans, specifications, and

estimates were prepared for a 2.6 mile segment reconstruction of US 290.

General Engineering Consultant Services to the Florida Rail Enterprise (104659)

Project Location: FL US; Client: Florida Rail Enterprise

Moving forward to bring high speed rail to Florida, this contract includes overall project management; preparation and review of an EIS; a project management and service development plan; public outreach; ridership assessments; and various other services.

Piper Road (holding) (A28965)

Project Location: ; Client:

As the design engineer, David performed point-to-point lighting analysis, and designed and prepared corridor lighting. He also prepared lighting plans and engineering design drawings for conventional and offset lighting near the Charlotte County Airport.

Burnt Store Road Engineering Design and CEI Services (A29119)

Project Location: ; Client: Public Works Charlotte County

WSA provided engineering and construction engineering and inspection services for the Burnt Store Road corridor, a hurricane evacuation route. An alternative alignment study was prepared and WSA was approved to begin the design phase as well. David was responsible for point-to-point lighting analysis, as well as the design and preparation of corridor lighting plans. In addition, he completed lighting plans and engineering design drawings for conventional lighting.

Louisville Southern IN Ohio River Bridges- Section 1 (Kennedy Interchange) Lighting and Signal Engineering Services (A30595)

Project Location: ; Client: Kentucky Transportation Cabinet

WSA is providing professional lighting and signal engineering services to the Kentucky Transportation Cabinet for the expanded Kennedy Interchange (Section 1) of the Louisville Southern IN Ohio River Bridges Design Project. As the project manager, David performed point-to-point lighting analysis for each section of roadway and underpass, electrical design, and prepared lighting and signal plans for construction. He also performed field reviews and coordinated with structural engineering firms, utility companies, and local authorities.

Winchester Ph 3-holding (A30876)

Project Location: ; Client:

David performed point-to-point lighting analysis, design, and prepared corridor lighting. He also prepared lighting plans and estimates for conventional and offset lighting.

Deramus Rail Yard Expansion (A31257)

Project Location: Shreveport, LA US; Client: Hill Brothers Construction and Engineering

A \$75 million expansion and reconfiguration/reconstruction concept to significantly increase the throughput and improve the efficiency of the Kansas City Southern Railroad's main yard was developed and implemented through a design-build contract. As the design engineer, David was responsible for point-to-point lighting analysis and design, as well as high mast lighting design for the rail yard.

Education

MS, Business Administration,
University of Kentucky, 1999

BS, Civil Engineering, University of
Kentucky, 1999

Years of Experience

Total Years: 11

WSA: 11

1999-Present

Wilbur Smith Associates
Lexington, KY

Registrations

Professional Engineer: KY

Professional Affiliations

Committee Representative,
Downtown Lexington Corporation

Parking and Transportation
Committee

Kentucky Section of ITE Secretary

Training

WSA Project Manager and
Presentation Training

Highway Capacity Analysis Training
VISSIM

Advanced Freight Planning

WSA Freight Planning Bootcamp

Synchro and SimTraffic Training

Thinking Beyond the Pavement –
Context Sensitive Solutions

Workshop on Statewide Travel
Forecasting

CORSIM Traffic Simulation Model
Training

Economic Analysis for Highway
Decision-Makers

Mr. Johnson, traffic engineer and transportation planner with Wilbur Smith Associates, offers a broad range of expertise in traffic engineering and transportation planning as highlighted below:

University of Kentucky Medical Center Traffic and Parking Study, Lexington, KY (2005) - Project engineer for this study being conducted for the University of Kentucky Medical Center. The purpose of this project was to evaluate changes to traffic and parking as a result of implementation of the UK Medical Center's Master Plan, which included partial closure of Rose Street at South Limestone and relocation of the primary parking garage for the hospital. Mr. Johnson analyzed both build and no-build traffic and parking scenarios. A VISSIM model was presented to local government officials, the Lexington Fayette Urban County Council, and the public. This micro-simulation software helps stakeholders to visualize the proposed improvements and resulting impacts.

Southern Kentucky Performing Arts Center Parking and Traffic Operational Analysis, Bowling Green, KY (2001) - Project engineer on this operational and parking analysis for a proposed theater site in downtown Bowling Green, KY. This analysis included the determination of the roadway characteristics near the site, collection of known traffic volume data, field traffic counts at specific locations, a level of service analysis (existing and future), a parking utilization analysis, determination of future trips generated to the site, distribution of these trips, the resulting impact of these generated trips on the existing network, and the consideration of any other transportation improvement recommendations pertinent to the study.

Danville Parking Feasibility Study, City of Danville (2000) - Project engineer for the parking demand and cost flow analysis exploring the need and feasibility for a parking structure in the Danville downtown area. Project activities included analysis of existing, projected, and recommended parking conditions considering redevelopment and various parking garage scenarios including a "no build" option. Assisted in the cost flow analysis looking closely at the direct expenses and potential revenue for the preferred alternatives.

Pikeville Downtown Traffic and Parking Study, Pikeville, KY (1999) - This project involved the evaluation of existing and future parking and traffic conditions. Due to the development of several new facilities in the area including a proposed Downtown Civic Center, recommendations were needed to address potential parking shortages and traffic congestion. Project activities included data analysis, alternative evaluation, and report compilation.

South Limestone Multimodal Transportation Study, LFUCG, Lexington, KY (2008 to present) - Deputy project manager hired by the Lexington-Fayette Urban County Government to complete this multimodal study. WSA was tasked with developing a complete street concept that will enhance safety and operations for all users while improving feelings of space and location. To establish a base condition, extensive data collection, and analysis was

conducted. Mr. Johnson is currently completing the study documentation that details short-term improvements for pedestrians, bicyclist, transit, and motorists and establishes a long-term vision for the South Limestone and South Upper corridor.

South Park Access Study, Lexington, KY (2008) - Project manager on this study conducted for Kimco Realty to evaluate access and parking lot circulation at the South Park development along Nicholasville Road. WSA evaluated two alternatives: right-in only north of the existing entrance and widening the existing entrance.

East End Small Area Plan, Lexington, KY (2009) - Project engineer hired by EHI Consultants and LFUCG to develop a small area plan for the East End neighborhood. The process combined traditional neighborhood planning with new techniques of organizing the social, physical, and economic environment of the neighborhood to promote infill, diversity, economic opportunity, mixed use development, and public open space. Mr. Johnson assisted with the traffic engineering and roadway design components of the study.

Various Traffic Impact Studies - Project manager for various traffic impact studies conducted within Lexington and throughout Kentucky. Typical activities included coordinating turning movement counts; analyzing the existing and future no-build scenarios; evaluating geometric deficiencies; conducting trip generation, distribution, and assignment; analyzing future build conditions; testing alternatives; developing recommendations; compiling the traffic impact study report; and presenting the findings at planning commission and city council hearings. Typical analysis software includes Synchro 7.0, SimTraffic 7.0, Highway Capacity Software Plus, and VISSIM. Mr. Johnson has managed the following traffic impact studies:

- CVS Pharmacy, Lexington, KY 2009
- Baker Iron and Metal, Lexington, KY 2008
- KOA US 25 Campground, Georgetown, KY 2008
- Sparks Farm, Georgetown, KY 2008
- JCD Properties/Lankford/NCC Development, Georgetown, KY 2008
- Versailles Center, Versailles, KY 2008
- Julie Butcher Law Offices, Lexington, KY 2008
- The Glen @ Lochdale, Lexington, KY 2007
- Ellerslie Place, Lexington, KY 2007
- Newtown Pike Starbucks, Lexington, KY 2007
- Hoover Property, Lexington, KY 2007
- Price and Mintwood Farms, Georgetown, KY 2007
- December Estate, Georgetown, KY 2007
- Equestrian Park, Versailles, KY 2007
- Rose Hill Commercial Development, Lexington, KY 2007
- Hall's Crossroads Commercial Development, Knox County, TN 2007
- Campus Suites, Murray, KY 2006
- Wahland Hall Crossing, Georgetown, KY 2006
- Hougham Property, Lexington, KY 2006
- Cross Keys Gardens, Lexington, KY 2006
- Wilmott Farm, Lexington, KY 2006

Education

BS, Civil Engineering, University of Tennessee, 1998

MS, Transportation - Engineering, University of Tennessee, 1999

Years of Experience

Total Years: 10
WSA: 10

2000-Present
Wilbur Smith Associates
Knoxville, TN

Registrations

Professional Engineer - TN

Professional Affiliations

Institute of Transportation Engineers (ITE); president Tennessee Section (2009)

Industry Awards

Jack B. Humphreys Young Member Award for outstanding service to the Tennessee Section of ITE, 2007

Areas of Specialization

Traffic engineering; traffic operations; transportation planning; signing and pavement markings; transportation system analysis; traffic studies; access management; parking studies; signal systems planning and design; alternative analysis; geometric design of roads and intersections; geometric safety analyses; capacity analysis of roadways using software such as Synchro 7.0, SimTraf, and HCS 3

Mr. Cole has more than 10 years of traffic engineering and transportation planning experience, all with Wilbur Smith Associates. Mr. Cole is active in the Institution of Transportation Engineers on the state and Southern District level. He is the current past president of the Tennessee Section of ITE. Mr. Cole is an experienced transportation engineer with a wide variety of experiences including parking studies and downtown traffic and circulations studies. His parking experience includes studies in Harrisburg, PA, Hersey PA, and Ocean City, MD. Recently, he participated in a comprehensive traffic study in Columbia, TN, and is currently working on one in Franklin, TN.

Mack Hatcher Parkway Context Sensitive Design, Tennessee Department of Transportation, Franklin, TN (2007) - Context sensitive design solutions were explored for the proposed extension of the parkway. An extensive public education and involvement program was developed to build citizen support and consensus for the planned improvements. Kevin was responsible for traffic analysis, roundabout evaluation, and development of unique intersection alternatives.

King Abdullah Aziz Corridor Study, Riyadh, SA (2008) - WSA performed traffic engineering and technical analysis, and developed conceptual designs for this corridor study in Saudi Arabia. Kevin provided traffic analysis simulation for this corridor study in Saudi Arabia.

TDOT SmartFIX 40 Construction Engineering and Inspection Contract II, Tennessee Department of Transportation, Knoxville, TN (2010) - This project provided construction phase services for I-40 through Knoxville, including roadway and bridge inspection, erosion control, site materials testing, records maintenance, traffic control, utility inspection, and public involvement. Kevin was responsible for traffic signal operations, timing coordination, field observations, and implementation.

Harrisburg Parking Market Analysis, Harrisburg Parking Authority, Harrisburg, PA (2003) - This assessment included a market analysis of central business district parking, including the state capital environs, and a condition evaluation of Parking Authority assets as well as a 10- and 40-year phasing plan for repair and maintenance cost. Kevin provided ARCview GIS work for the project.

Love's Travel Center Traffic Study, Meadowview, VA (2007) - WSA was retained to conduct a traffic study for a proposed Love's Travel Center adjacent to Route 80 and I-81 in Virginia. This study helped determine site traffic effects and problem areas, and recommended mitigation to maintain traffic operations. Kevin provided freeway operations evaluation, arterial street operations, and traffic simulation modeling.

Pigeon Forge Tourism Development Zone Program Management, Pigeon Forge, TN (2008) - The contract includes program management services, including managing various construction projects; program planning and

analysis for implementation of the Tourism Development Zone projects; and other assistance as needed for the city manager.

Faith Promise Church Traffic Impact Study, Knoxville, TN (2008) - Kevin's responsibilities included analysis of weekend traffic impacts, evaluation of unique traffic control devices, alternative means of ingress/egress, and the traffic control plan.

Franklin Major Thoroughfare Plan, Franklin, TN (2010) - The plan focused on the city's transportation needs based on population and employment projections utilizing TransCAD. It was used to evaluate the traffic impacts of potential transportation improvements, and the recommended improvements were identified.

University of Tennessee-Knoxville Cherokee Campus Master Plan, Knoxville, TN (2009) - Kevin was involved in the interchange evaluation and traffic operations, in conjunction with traffic signal design recommendations.

South Grove Shopping Center Site Development Services, Knoxville, TN (2006) - Site development services were provided for a 60-acre shopping center development. Services included a traffic impact analysis, site grading and drainage plan, utility service plan, parking layout, and design of roadway improvements. Kevin's contributions included traffic signal design and traffic signal analysis.

Knox County 2005 High Accident Location Evaluation, Knox County Department of Engineering and Public Works, TN (2005) - The purpose of this project was to conduct field investigations to assess the crash experience at 400 local street and signalized intersections in Knox County to identify causative factors and appropriate solutions. Kevin was responsible for development of the database analysis tool, data collection, accident review, and traffic analysis.

Huguelet Drive Extension Roadway Design, Lexington, KY (2006) - This project involved the design of the extension of Huguelet Drive between Limestone Street and Rose Street in the heart of UK's main campus. It involved bicycle and pedestrian lane planning and design, context-sensitive design principles, and traffic signaling. Kevin provided traffic signal design for the project.



Susan E. Hathaway, ASLA

Senior Staff Transportation Planner

EDUCATION:

B.S., Landscape Architecture,
West Virginia University,
Morgantown, WV
1986

REGISTRATION(S):

Professional Landscape Architect,
West Virginia

PROFESSIONAL ORGANIZATION(S):

American Society of Landscape
Architects

Miss Hathaway has over 21 years of experience in the transportation industry. In that time she has gained extensive experience in the traffic engineering aspects of roadway design. Her experience includes; signing plans for new roadway projects as well as renovation of signing on existing expressways, traffic signal renovation projects, pavement marking plans and maintenance of traffic plans.

Eisenhower Drive Signal Renovation, Raleigh County, WV – Project Manager on traffic signal renovation project for 9 intersections along a major collector road in Beckley, WV.

US 460 Signal Renovation, Mercer County, WV – Project Manager on traffic signal renovation project for 9 at-grade intersections along an expressway in southern West Virginia.

Kanawha City Signal System Renovation, Kanawha County, WV – Project Manager on traffic signal renovation project for 11 intersections along a major collector road in Charleston, WV.

Clarksburg CBD Signal Renovation, Harrison County, WV – Project Manager on traffic signal renovation project for 14 intersections in downtown Clarksburg, WV.

Parkersburg CBD Signal Renovation, Wood County, WV – Project Manager on traffic signal renovation project for 22 intersections in downtown Parkersburg, WV.

I-77 Signing Renovation, Kanawha & Jackson Counties, WV – Project Manager on signing renovation project for 40 miles of Interstate.

US 19 Signing Renovation, Raleigh, Fayette & Nicholas Counties, WV – Project Manager on signing renovation project for 28 miles of expressway.

US 33 Signing Renovation, Lewis, Upshur & Randolph Counties, WV – Project Manager on signing renovation project for 18 miles of expressway.

US 50 Signing Renovation, Harrison County, WV – Project Manager on signing renovation project for 6 miles of expressway.

Corridor H, Grant County, WV - Developed signing, pavement marking and maintenance of traffic plans for 2.7 mile section of this new expressway.

Meadowbrook Rd, Harrison County, WV - Developed maintenance of traffic, signing and pavement marking plans for approx. 2.8 miles of relocated County Route 24.

Sundowner Bridge, Wood County, WV - Developed maintenance of traffic plans for bridge replacement bridge over Neal Run and new roadway approaches.

Curtin Bridge, Nicholas County, WV - Developed maintenance of traffic, signing and pavement marking plans for bridge replacement over the Gauley River and new roadway approaches.

Relocated WV 7, Logan County, WV - Developed maintenance of traffic, signing and pavement marking plans for approx. 0.6 miles of relocated roadway.



Reason Martin

Associate Engineering Technician

EDUCATION:

B.S.C.E. Tech, 1998, West Virginia Institute of Technology, Montgomery, WV

A.S.C.E Tech, 1996, West Virginia Institute of Technology, Montgomery, WV

TECHNICAL TRAINING:

Surveying and Mapping Certificate, 1994, Raleigh County Technical Center, Beckley, WV

TECHNICAL SPECIALTIES:

Surveying
Design
Drafting
GIS
Data Collection
Construction Inspection

TRAINING

Experience in GuidSign, AutoCad, Microstation, Inroads, Geopak, Arcview, and photo and video editing software

Mr. Martin is a civil engineering technology graduate from WVU Tech. He has eight years of experience in surveying, design, drafting, and construction inspection in West Virginia and Virginia.

Mr. Martin's project experience includes:

I-70 Sign Renovation, Ohio County WV - A member of the inventory team for the 15-mile long sign renovation project that extends from the Ohio River to the Pennsylvania State Line. The inventory included locating and documenting every sign along I-70 including the downtown Wheeling Interchanges. Additionally roadside features such as light poles, and power drops were located to facilitate the development of the signing plans. This inventory included the use of a GPS system and custom GIS database to provide an electronic archive with digital photographs. Responsible for developing inventory and sign renovation plans, including sign design using GuidSign software.

I-470 Sign Renovation, Ohio County WV - A member of the inventory team for the 3-mile long sign renovation project that extends from the Ohio state line to the I-70 and I-470 split. The inventory included locating and documenting every sign along I-470 including the rest areas and weigh stations. Additionally roadside features such as light poles, and power drops were located to facilitate the development of the signing plans. This inventory included the use of a GPS system and custom GIS database to provide an electronic archive with digital photographs.

Greenbrier Street (WV 114) Sign Renovation, Kanawha County WV - A member of the inventory team for the 2-mile long sign renovation project that extends from the I-64/I-77 Exit 99 interchange to Yeager Airport. The inventory included locating and documenting every sign along WV 114 including the intersection areas. Additionally roadside features such as light poles, and power drops were located to facilitate the development of the signing plans. This inventory included the use of a GPS system and custom GIS database to provide an electronic archive with digital photographs.

I-81 Sign Renovation, Kanawha County WV - A member of the inventory team for the 26-mile long sign renovation project that extends from the Virginia State Line to the Maryland State Line. The inventory included locating and documenting every sign along I-81 including the interchanges and rest areas. Additionally roadside features such as light poles, and power drops were located to facilitate the development of the signing plans. This inventory included the use of a DMI and field measurements to provide form data with digital photographs.

US 50 Traffic Operation, and Safety Study, Mineral and Hampshire Counties, WV - Technician for the development of a 45-mile safety improvement study in the eastern panhandle of West Virginia. Project involved assessments of traffic and highway geometry conditions, in order to provide remediation of potential traffic and safety issues.

US 522 Berkeley Springs, WV - Technician/designer for construction plans for 4 miles of four-lane expressway in Morgan County, WV. Project involved alignment studies, interchange configuration study, major drainage design, and development of a complete set of plans for construction.

US 220 Moorefield Junction Road, Hampshire County, WV – Technician /designer for the development of roadway plans for 3,500' long alignment improvement project. Project involved an alignment study to develop the most feasible configuration to improve deficient sight distance. Services included providing roadway plans, drainage design, and signing and marking plans.

WV Rt. 2 Widening, Brooke County – Field inspector for the construction of road widening project. Project included providing daily inspection reports, and verifying quantities for pay items.



Jason Huddleston

Senior Engineering Technician

EDUCATION:

AS, Engineering Technology,
West Virginia Institute of
Technology, Montgomery, WV

TECHNICAL SPECIALTIES:

Drafting
Roadway Design
Storm Sewer Design
Ditch Design

TRAINING

Experienced in Microstation J,
Microstation V*, Inroads 8.01,
Geopak 2001

Mr. Huddleston is a 2001 graduate of WVU Tech and has 4 years experience as an engineering technician\designer. He has experience in roadway design, storm sewer design and ditch design. In addition to his West Virginia work, Jason also has experience in Michigan, Arkansas and Ohio.

Wilbur Smith Associates - Senior Engineering Technician

US 50 Appalachian Corridor D Highway, Parkersburg, WV - Technician for the development of construction plans for 3.5 miles of four-lane expressway in Wood County, WV.

US 52 King Coal Highway, Bluefield, WV - Technician\Designer for the design development of 4 miles of divided expressway in Southern, WV. Project involved alignment studies, interchange configuration study, major drainage design, and development of complete set of plans for construction.

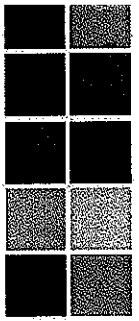
US 522 Berkeley Springs, WV - Technician\Designer for development of construction contact plans for a 4-mile four lane expressway in Morgan County, WV. Project involved alignment studies, interchange configuration study, major drainage design, and development of complete set of plans for construction. Two interchanges were required.

Gilliam Arch Bridge Replacement, Mercer County, WV - Technician\Designer for bridge replacement project in Mercer County, WV.

US-31 Freeway and Interchange Construction, Benton Harbor, MI - Technician\Designer for development of drainage design plans for 4 miles of US-31 four-lane divided freeway and the reconstruction and widening of 3.5 miles of existing I-94 in Michigan.

I-69 Connector, Drew & Lincoln Counties, AR - Technician\Designer for an Interstate Highway design project in southeastern Arkansas. Project consists of 5 miles of highway design, 15 miles of drainage design.

WAS-7, Washington County, OH - Technician\Designer for 3 phase maintenance of traffic plans for 4 miles of urban roadway.



Town of Highlands Downtown Parking and Traffic Circulation Study
Highlands, NC

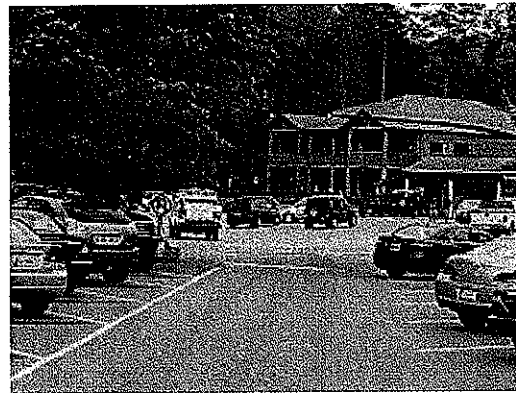
Wilbur Smith Associates (WSA) was retained by The Town of Highlands to prepare a comprehensive traffic circulation and parking study for the downtown central business district.

The Town of Highlands is located in Macon County, NC at an elevation of 4,118 feet. The Town has become a highly respected tourist attraction with its beauty and ambience of the mountain and waterfall sceneries. This year's population on the Highland's plateau is 3,200 residences but swells to over 18,000 during the summer. This summer increase of the daily tourism has caused traffic circulation and parking issues for the Town.

Wilbur Smith Associates is performing a parking and traffic circulation study will identify improvements necessary to enhance traffic circulation and pedestrian safety while offer safer and convenient parking for residents and tourists.

Specific services performed for this project:

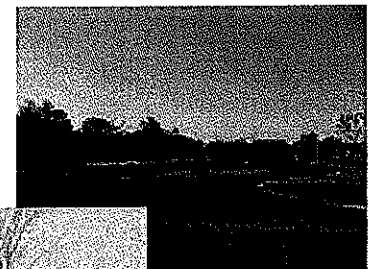
- Kickoff Meeting/Field Review
- Data Collections and Existing Conditions Assessment
- Development of Base Mapping
- Field Review and Data Verification
- Traffic Data Collection
- Capacity Analysis/Simulation
- Parking Accumulation Study Review
- Stakeholder Meetings
- Wayfinding Analysis/Conceptual Design
- Identification of Practical Alternatives - Streetscapes
- Stakeholder Meetings
- Conceptual Design Plans and Cost Estimates

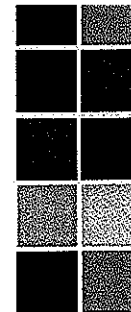


Fayetteville Technical Community College, Bulla Parking Lot
Fayetteville, NC

WSA designed a porous asphalt surface parking lot that provides approximately 400 spaces to the FTCC campus. The lot has a central drive that connects to an existing parking lot near the Continuing Education Center. WSA performed the following scope of services to assist in this project:

- topographic survey
- geotechnical engineering services; porous pavement infiltration tests were performed
- traffic analysis of the new lot driveway connection to Fort Bragg Road
- landscaping design to meet city requirements
- signing and pavement marking plans
- storm drainage designs including porous pavement drainage calculations
- erosion control plans
- construction administration

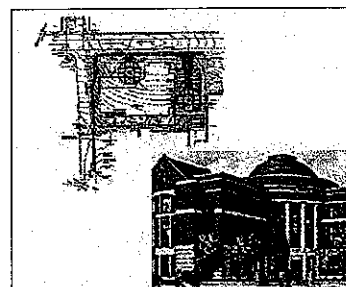




Baker Center Site Development and Drainage Design

Knoxville, TN

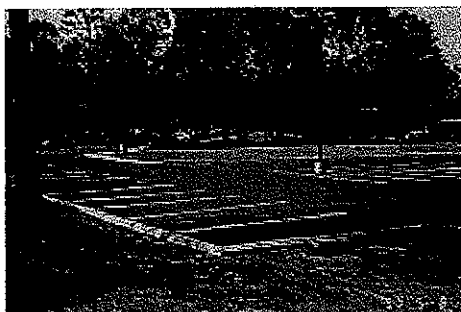
Wilbur Smith Associates provided site design services for the new Howard H. Baker Jr. Center for Political Science building. To reduce sprawl at the University of Tennessee, it was built on an existing campus parking lot. An innovative part of the design is an underground stormwater retainage system. The retainage system was put in place to collect stormwater that was then harvested for the irrigation system, thereby reducing the university's drain on fresh water supplies.



Other design highlights included: relocating the sanitary sewer lines for Melrose Place; adding a trolley drop-off lane; and adding traffic signal poles to the corner of Cumberland Avenue and Melrose Place. Construction on the project was initiated in 2006 and was completed in 2008.

C.A. Dillon School Parking Lot

Butner, NC



The Firm contracted with the North Carolina Department of Human Resources to prepare construction drawings and documents for a 100-space surface parking lot at the C.A. Dillon School in Butner, North Carolina.

The project included field surveys, parking layouts, grading, pavement design, drainage, lighting, and access roadways. Periodic construction monitoring was provided, as well as supervision of geotechnical testing.

Sandhills Community College Parking Lot

Pinehurst, NC

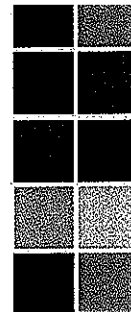
The Firm contracted with Sandhills Community College through the North Carolina Department of Administration State Construction Office to prepare construction drawings and contract documents for a 308-space student parking lot and recreational walking track.



The project included the layout of parking, access drive and walkways, field surveys, grading, pavement design, landscaping, lighting, cost estimating, advertising, and bidding. Designs were prepared for stormwater drainage system and erosion control, including associated permits.

Construction monitoring was provided on a weekly basis along with coordination between all parties. Supervision of geotechnical testing was also provided.

The work was undertaken on a fast-track schedule in order to be completed during the college summer break. Weekly meetings were conducted to meet the schedule and the project was completed on time. The landscaping was completed during the fall.



Wilderness Event Center Hotel and Waterpark Site Design

Sevierville, TN

The proposed site of the Wilderness Event Center Hotel and Waterpark has excellent regional access and visibility via Highway 66, the main north/south corridor between Interstate 40 and Sevierville, TN. It is located just 30 miles from Knoxville, Tennessee and 10 miles from Pigeon Forge, Tennessee, one of East Tennessee's leading tourist destinations. The site is located just east of the new Sevierville Events Center and just South of the City of Sevierville-owned Eagles Landing Golf Course.

Wilderness Event Center Hotel and Waterpark is a new upscale outdoor waterpark and Hotel. The Hotel is the first of its kind in the East Tennessee area. There is strong local and regional demand for this type of facility as Sevierville lacks a large, indoor, multi-purpose space. While local



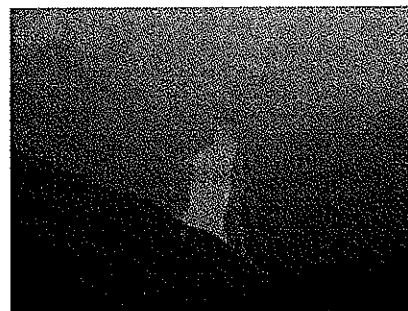
facilities are heavily utilized, their size limits the entertainment that can be held in the area. This type of resort will bring citizens from all over to enjoy the enjoyment that the resort attraction will bring, in addition to the many other features of the surrounding area.

Wilbur Smith Associates performed final site analysis design, grading design, paving design, the design of the underground stormwater system, the sanitary sewer design, and waterline design.

The Summit Bechtel Family National Scout Reserve

Trinity Works, Arrow WV, Inc.

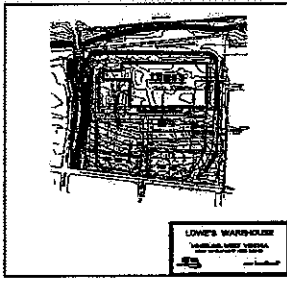
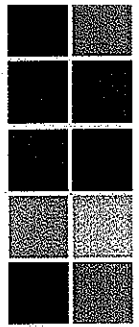
Trinity Works, developer for Boy Scouts of America, selected WSA to undertake the traffic impact study and transit planning for the proposed Summit Bechtel Family National Scout Reserve in Fayette County, WV.



The Charleston Office provided plan review of traffic flow within the camp and review of the interior roads for suitability for the designated design facilities. The traffic impact study looked at providing improved access to the 10,000-acre site from U.S. 19. The site will be the host of the 2013 National Jamboree and also be home to summer camping and a high adventure base camp and will accommodate over 1.5 million visitors per year. WSA personnel attended the BSA National Scout Jamboree, design a charette for The Summit, and held a logistics meeting on how to supply the camp with fresh food and refuse removal for the approximate 48,000 on-site population. WSA personnel also observed vehicle and pedestrian traffic to prepare a report for the next Jamboree in West Virginia. The report was to provide recommendations to improve safety, parking, and traffic flow for the large Jamboree crowd.

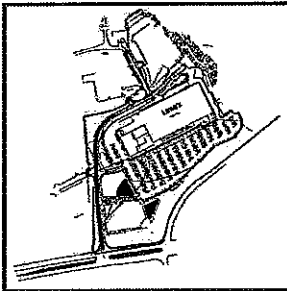
WSA is also developing a shuttle service program for the national jamboree, summer camp, and high adventure camps. Campers and troop leaders, as well as service personnel, will be shuttled to the site since automobile traffic won't be allowed access. Everything brought to the site will use this service.

3 / Relevant Experience



**Lowe's
Wheeling, West Virginia Site**

In 2004 the WSA Charleston, WV Office prepared a traffic impact study and existing street modification plans per WVDOH requirements.



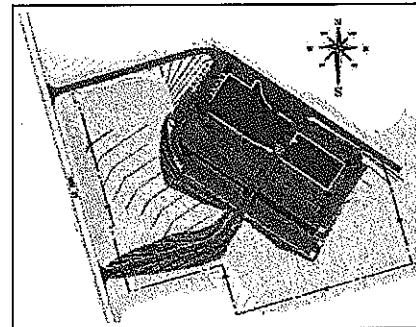
**Lowe's
Princeton, West Virginia Site**

In 2005 the WSA Charleston, WV Office prepared a traffic impact study, access road construction and right of way plans per WVDOH requirements, including erosion and sediment control plans.

**Ripley Baptist Template
Ripley, West Virginia**

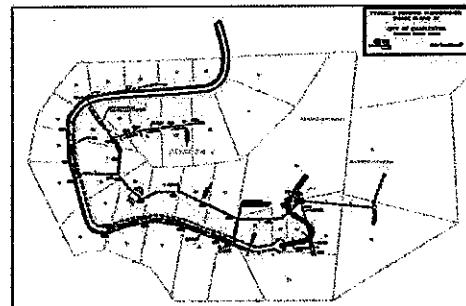
In 2005 the WSA Charleston, WV Office prepared a traffic impact study, access road construction and right of way plans per WVDOH requirements, including erosion and sediment control plans.

- Grading, Paving and Drainage Plans
- Erosion and Sediment Control Plans
- US COE Section 404 Permit Application
- WV/NPDES Permit Application
- WVDOH Approach and Other Work Permit Application



**Pinnacle Heights Housing Subdivision
George Neilan**

In 2005, WSA CHWV office prepared the design for an 1800' waterline extension and a duplex submersible pump solids handling lift station with 1800' of force main to serve a new classroom/hanger building. WSA also prepared the construction contract specifications and reviewed the lift station shop drawings.



STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code* §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Wilbur Smith Associates

Authorized Signature: [Signature] Date: 3/1/11

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 1 day of March, 2011.

My Commission expires March 31, 2020

AFFIX SEAL HERE

NOTARY PUBLIC [Signature]

