

## About Bowen Engineering & Surveying

We are pleased to express our interest in providing services through the On-Call LPA Consulting Services program. Bowen Engineering & Surveying was founded in 1979 by the late Richard I. Bowen. For over 30 years, our firm has provided a full range of civil engineering, surveying and testing services to the general public, developers, municipalities, and state and federal government agencies throughout southeast Missouri and southern Illinois. Having completed successful bridge and culvert replacement projects for various LPAs in Missouri, we feel that we are well qualified to provide these services through the On-Call program.

## Experience

In the past 10 years, we have completed bridge and roadway improvement projects for various municipalities, counties, and public entities in the Southeast Missouri area, including the cities of Cape Girardeau and Park Hills, the counties of Perry and Ste. Genevieve, and the Southeast Missouri Regional Port Authority. These projects ranged in complexity from county road bridges to multi-lane bridges on high-traffic arterial streets.

We are experienced in completing hydrologic analysis of watersheds and hydraulic analysis of storm sewers, culverts, bridges, and natural waterways in order to complete optimized bridge designs with minimal impact to the environment and adjacent property owners. We are familiar with projects utilizing Community Development Block Grant (CDBG) funding and we are also familiar with the Off-System Bridge Replacement and Rehabilitation Program (BRO) and the Federal-Aid Surface Transportation Program (STP), both administered through the Missouri Department of Transportation.

Below are a few of the bridge projects that we have completed in the Southeast Missouri area:



### **County Road 408 Bridge, Perry County, MO**

Description: County road improvement and bridge replacement (BRO)

#### Services Provided:

Boundary and topographic survey of the project area, hydrologic and hydraulic study of the project area and proposed bridge, civil site design including 477 linear feet of roadway and a 53' long single-span bridge, right of way and easement plat preparation, construction layout, inspection and record keeping to comply with Federal Highway Administration and MoDOT requirements.



### **East Elvins Boulevard, Park Hills, MO**

Description: Street and bridge replacement (STP)

#### Services Provided:

Boundary and topographic survey of the project area, hydrologic and hydraulic study of the project area and proposed bridge, civil site design including 1,000 linear feet of street, a 120' long three-span bridge and associated storm sewer improvements, right of way and easement plat preparation, construction inspection and record keeping to comply with Federal Highway Administration and MoDOT requirements.



### **County Road 930 Bridge, Perry County, MO**

Description: County road improvement and bridge replacement (BRO)

#### Services Provided:

Boundary and topographic survey of the project area, hydrologic and hydraulic study of the project area and proposed bridge, civil site design including 275 linear feet of roadway and a 63' long single-span bridge, right of way and easement plat preparation, construction inspection and record keeping to comply with Federal Highway Administration and MoDOT requirements.

## **Approach**

A typical project at Bowen Engineering & Surveying maximizes the use of our personnel. Before a project is started, we will prepare and submit a timeline for the completion of preliminary and final plans. The project is then separated into specific tasks and assigned to individuals with the expertise to complete them in a timely manner. This allows our office to function productively, and achieve project completion without delays or cost overruns. This also helps to reduce the likelihood of change orders during construction and helps keep the construction cost within budget. Our approach to a structure project, such as a typical bridge replacement, for a Local Public Agency is generally as follows:

1. Assist the Local Public Agency (LPA) in programming the structure for replacement, if required
2. Prepare environmental documentation as required
3. Complete a geotechnical investigation and obtain foundation recommendations from subcontractor
4. Complete a boundary and topographic survey of the project area
5. Determine hydraulic requirements of the proposed structure and evaluate structure types
6. Prepare preliminary plans and environmental documentation for review by MoDOT and other state and federal agencies
7. Complete final plans, specifications and estimates for review by MoDOT
8. Assist the LPA in advertising for bids and evaluating bids
9. Provide construction inspection and testing services as needed
10. Review applications for payment, payrolls, shop drawings and other submittals
11. Complete a final inspection and submit all final documentation to LPA and MoDOT

## Personnel

Our staff includes three Professional Engineers, two Professional Land Surveyors, three fully equipped survey crews, and various office and field technicians. We maintain a highly experienced and motivated team and are adequately staffed to meet the time constraints of demanding projects. The majority of our employees have been with the firm for over 10 years, and their experience and loyalty is evident in the quality of work that is delivered to our clients. Below is some brief information about our key employees:

Chris Bowen, P.L.S. (MO), President

Education: Civil Engineering & Land Surveying – University of Missouri, Columbia

*With over 32 years of experience in the surveying and civil engineering fields, Chris draws from his deep knowledgebase to lead our company. His responsibilities include overseeing daily operations including coordination of field crews, record research, data processing, review of survey information, review of CAD Drawings and project management.*

Cary Harbison, P.E. (MO, IL), Project Manager

Education: B.S. Civil Engineering – University of Illinois, Urbana-Champaign

*Cary has over 19 years of experience and has been with Bowen Engineering & Surveying since 1996. His responsibilities include providing design and construction engineering services to the Southeast Missouri Regional Port Authority, from which he has gained invaluable experience with the LPA program. Cary also manages residential and commercial planning projects and site development projects. His engineering expertise includes streets, railroad extensions, sanitary sewers, wastewater treatment facilities, storm sewers, stormwater management facilities, site layout and grading. Cary is also an expert in GPS equipment and surveying software.*

Christopher M. Buerck, P.E. (MO), Project Manager

Education: B.S. Civil Engineering – University of Missouri, Columbia

*Chris has been with the company since 1997 and has over 19 years of experience. His responsibilities include providing design and construction engineering services for municipal roadway and bridge projects, traffic signalization, rural and urban hydrology studies, watershed analysis, residential and commercial planning and site development. Chris also has extensive experience with sidewalk and trail projects. His other duties include overseeing CAD technicians, coordinating with construction managers and survey crews, co-managing field and laboratory testing services and providing inspection services for commercial, highway and bridge construction projects. Through his work with various cities and counties, Chris has become extremely knowledgeable about the LPA program.*

Martin G. Hoffman Jr., P.E. (MO), Project Manager

Education: B.S. Civil Engineering – Missouri University of Science and Technology

*Martin has over 10 years of experience in civil engineering and has been with us since 2003. His responsibilities include managing land and hydrographic surveying projects for the U.S. Army Corps of Engineers, assisting in civil engineering design projects and co-managing our field and laboratory testing services department. He is an expert in CAD and GIS systems.*

## In Closing

We appreciate the opportunity to present our qualifications and express our interest in being considered for the On-Call LPA Consulting Services program. We would be happy to provide you with a list of references, letters of reference or any information you may need to assist you during the consultant selection process. We look forward to working with you on future LPA projects.

Sincerely,



Chris Bowen, President

# Company Brochure

## About Bowen Engineering & Surveying

Bowen Engineering & Surveying was founded in 1979 and since that time we have provided civil engineering and land surveying services to government agencies, municipalities, private entities and individuals in southeast Missouri. We believe the following items make us well qualified to provide consulting engineering services to Local Public Agencies throughout the area:

- Bowen Engineering and Surveying has called southeast Missouri home for more than 30 years. Our staff members are very familiar with local regulations, local geology and issues unique to the region.
- Our staff members are experienced with state and federally funded projects, such as the Off-System Bridge Replacement and Rehabilitation Program (BRO), the Federal-Aid Surface Transportation Program (STP) and the Community Development Block Grant (CDBG) program.
- Our company can provide construction testing and inspection services. We employ MoDOT and ACI certified lab and field personnel.
- We are adequately staffed to ensure that work on each project will begin promptly and will remain a priority of our company.

We hope that the information included in this brochure will give you an idea of our firm's experience and capabilities. We believe you will find that Bowen Engineering and Surveying is well qualified to provide consulting services and we look forward to working with you on future projects.

## Civil Engineering

Our engineering staff includes three professional engineers, as well as experienced civil technicians and drafters. Our staff has substantial experience in site civil engineering and we have completed



many projects in the southeast Missouri area involving state and federal grant funding. We have worked with the Southeast Missouri Regional Port Authority of Cape Girardeau and Scott Counties since 1983. We have extensive experience with river port projects, street design and construction, load-out facilities and rail extensions. Over the past 25 years, our firm has prepared plans and specifications for the SEMO Port on water lines, sanitary sewer lines, highways, railroads and site grading projects totaling more than \$10,000,000. Most projects completed for the SEMO Port were done with the assistance of state and federal grant money.



We have completed roadway and bridge projects for Perry County and Ste. Genevieve County and the cities of Cape Girardeau and Park Hills. These projects ranged in complexity from county road bridges with minimal road improvements to multi-lane arterial city streets and bridges with high traffic volumes and pedestrian walking paths. All of the bridge replacement projects have been designed and constructed in compliance with either the Off-System Bridge Replacement and Rehabilitation Program (BRO) or the Surface Transportation Program (STP) administered by the Missouri Department of Transportation.

Our design and construction experience also includes extensive work in commercial and residential subdivision development, drainage facilities, water and sewer projects, storm water management projects and ADA-compliant design. We are experienced in preparing cost estimate data, permit applications, construction plans, bid documents, specifications and construction records. All of our site development and road and bridge projects require a hydrologic analysis of local watersheds and hydraulic analysis of storm sewers, culverts and bridges and natural waterways to complete an optimized design with minimal impact to the environment and adjacent property owners.

Typical civil engineering services we provide include the following:

- Streets and Roads - New Roadway Design, Street Extensions, Widening, Rehabilitation and Resurfacing, Signalization
- Site Design - Site Layout and Grading Plans, Site Utility Plans, Stormwater Management and Collection, Stormwater Pollution Prevention Plans, Permitting
- Bridges and Culverts - MoDOT Off-System Bridge Replacement and Rehabilitation Program (BRO) compliant design, MoDOT Surface Transportation Program (STP) compliant design
- Wastewater Treatment Design - Residential and Commercial Wastewater Treatment Systems, Septic System Design, Sanitary Sewer Design
- Drinking Water - Public Water Line Extensions, Public and Private Wells
- Industrial - Port Authority Development, Railroad Design
- Structural - Foundations, Structural Design and Analysis

## Surveying

Our surveying staff includes two professional land surveyors and 3 fully equipped survey crews. We utilize the latest surveying equipment and software, including cutting edge GPS systems that collect real time data and minimize field survey costs and office processing. Our surveyors are very experienced in completing boundary, easement and topographic surveys – particularly in southeast Missouri.

We provide construction surveying services, including construction staking, earthwork surveys and as-built surveys. Our surveying clients include state and federal agencies, local municipalities, corporations, contractors, developers and private landowners.



We are the only company between St. Louis, MO and Memphis, TN to provide hydrographic surveying and we operate two fully equipped hydrographic surveying vessels and several smaller boats for accessing confined waterways. Since 2001, our firm has continually contracted with the St. Louis District US Army Corps of Engineers to provide land and hydrographic surveying services. We are currently one of only three surveying companies contracted by the St. Louis District and have completed surveys throughout eastern Missouri and western Illinois. We have completed hydrographic surveys extensively on the Mississippi, Missouri, Illinois and Kaskaskia Rivers and have surveyed major impoundments as far away as Pennsylvania and New York State.



Our staff is also experienced in collecting field data for use in Geographic Information System (GIS) applications, as well as encoding the data into Esri ArcGIS software. We have completed GIS projects that involved coordinating aerial photography with on the ground survey data to update utility maps for local public agencies. We have also completed GIS projects for the Corps of Engineers, such as collecting and processing survey data for all navigable features along 700 miles of the Missouri River.

## Testing and Inspection

Our testing and inspection staff includes professional engineers and certified technicians. Typical testing and inspection services we provide include:



- Field and Laboratory Concrete Testing
- Soils and Aggregate Testing and Classification
- Moisture / Density Testing of Soils and Asphalt
- Residential and Commercial Structural Inspection
- Construction Inspection and Monitoring
- Spray-applied Fireproofing Special Inspection

Our technicians maintain the following certifications:

- American Concrete Institute (ACI) Concrete Field Testing – Grade 1
- Humboldt Scientific / Troxler Electronic Laboratories Nuclear Gauge Training
- MoDOT Concrete Field
- MoDOT Concrete Strength
- MoDOT Aggregate Technician
- MoDOT Soil Density
- MoDOT Plasticity Index
- MoDOT T85 Absorption
- International Code Council Spray-applied Fireproofing Special Inspector

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## Contact Us

We welcome any questions and look forward to speaking with you about your next project. We are always happy to provide references or provide further information about our company that you may need during the consultant selection process. Please call us at (573) 339-5900 or visit our website at [www.bowenengsurv.com](http://www.bowenengsurv.com).