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## Header 1

[List View](#)**General Information** | Contact | Default Values | Discount | Document Information | Clarification Request

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First Name: Louise

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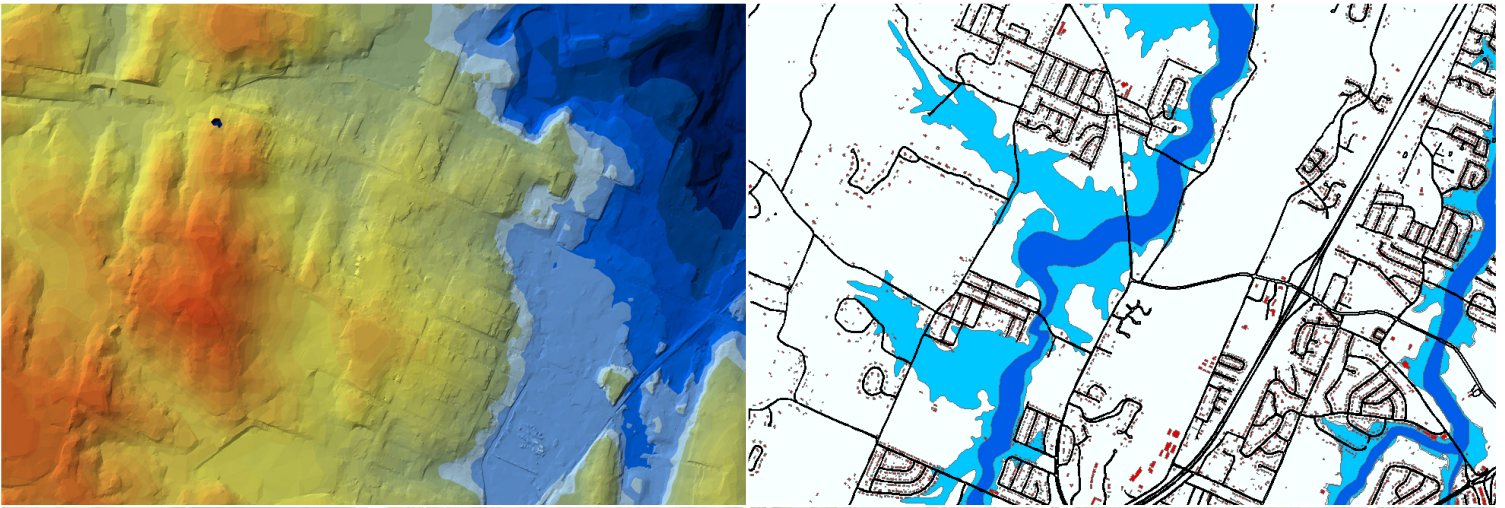
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**Commodity Line Comments:**

**Extended Description:**

Architectural/Engineering Services



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**ARCHITECTURAL/ENGINEERING SERVICES EXPRESSION OF INTEREST**

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**FEMA Program  
Support Services**

**Solicitation No.: CEOI  
0606 HSE2100000001**

West Virginia Purchasing Division  
West Virginia Division of  
Emergency Management

January 21, 2021



engineering | architecture | geospatial





engineering | architecture | geospatial

## Expression of Interest

Architecture & Engineering Services  
FEMA Program Support Services  
West Virginia Division of Emergency Management  
WV Department of Administration  
CEOI 0606 HSE2100000001

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# COVER LETTER



**GRW** | engineering | architecture | geospatial

801 Corporate Drive | Lexington, KY 40503

859.223.3999 | [www.grwinc.com](http://www.grwinc.com)

January 21, 2021

Ms. Tara Lyle, Buyer Supervisor  
Department of Administration, Purchasing Division  
State of West Virginia  
2019 Washington Street East  
Charleston, WV 25305-0130

**RE: Architectural/Engineering Services | West Virginia Division of Emergency Management  
Solicitation No.: CEOI 0606 HSE210000001**

Dear Ms. Lyle and Selection Committee Members:

Achieving the goals you've established for the comprehensive FEMA Risk MAP program is important for the state's Advisory Flood Height initiative. GRW would like to work with you on this project – and we believe we offer you the right experience and expertise to successfully deliver the results you require. GRW and our West Virginia-based subsidiary, Chapman Technical Group, would like to work with you on this project, and we believe we are the best team to provide the services you desire for a number of reasons:

- More than 50 years' experience with floodplain studies and management ranging from mapping and LiDAR services to master planning to drainage system design
- Three decades of West Virginia project experience along with regulatory knowledge
- Combined assets of more than 50 water resources professionals supported by a team of 35 geospatial (surveying, LiDAR, mapping, and GIS) experts

It will be GRW's primary function, as your consultant, to ensure that each element of your project is coordinated with you. The GRW team understands that consulting engineering is a relationship business, and we fully understand the importance of gaining your respect, proving our worth, and being there long after the successful project is completed.

Given our team's understanding of this project and successful project history serving the State, there is no doubt in my mind that GRW is the right choice for this project. We are ready to meet with you at any time to discuss our capabilities in detail, and look forward to working with the you.

Sincerely,

A handwritten signature in black ink that reads "Harvey N. Helm".

Harvey Helm, PE, LEED AP, PLS  
Vice President



**SECTION 1.0** | **GRW Introduction**

# 1.0 GRW Introduction

## About GRW

Founded more than 55 years ago, GRW is an employee-owned architectural, engineering and geospatial services firm with more than 200 employees.

At GRW, we have the ability to address your projects from nearly every angle. Because of our in-house capabilities, we can more easily tailor our approach allowing our teams to deliver more quickly, with greater potential for more accurate cost estimates, and fewer change orders.

Among our achievements, since 1972, GRW also has been recognized nationally as a top producing firm by *Engineering News-Record*.

Also, GRW is listed in *Building Design and Construction's Giants 300*

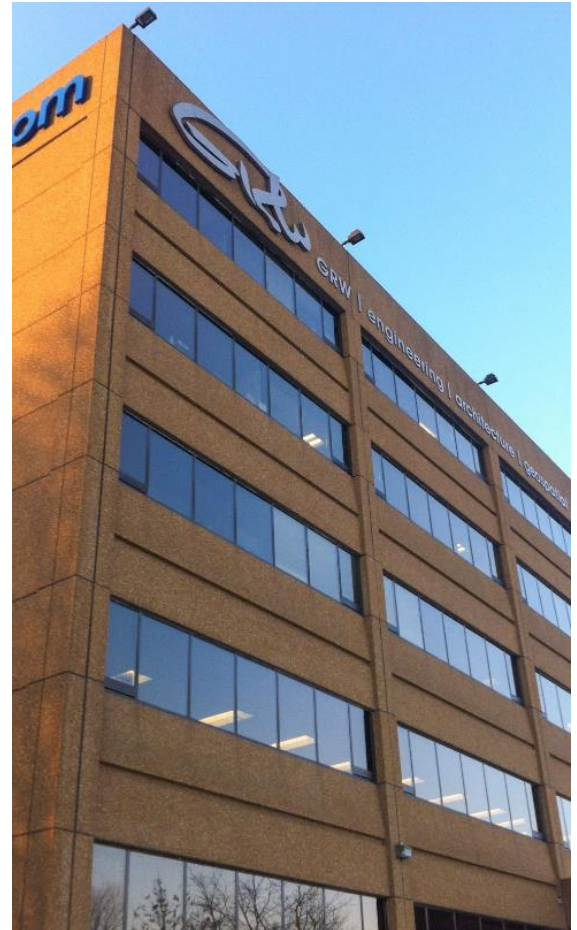
report as one of the nation's top Architecture-Engineering firms. Also,



## Our Corporate Culture

Our corporate culture is one of close collaboration with an approach that gives our project managers and their project teams a hands-on approach, as needed, from planning through construction phases.

At GRW, we know that business relationships are built on trust – the ability to trust your business partner to deliver on their promises. By choosing GRW for your professional services, you are choosing a company that delivers on our promises. You can expect our full attention starting on day one, and extending to the day of project completion and beyond. **Listening diligently to your needs, and those of your stakeholders, is the hallmark of our approach.** Delivering projects that meet our clients' goals – honestly, reliably, and efficiently, time after time – is the reason why GRW has achieved a 90% rate of repeat business.



**GRW's West Virginia offices are staffed by Chapman Technical Group, a wholly-owned subsidiary of GRW.**

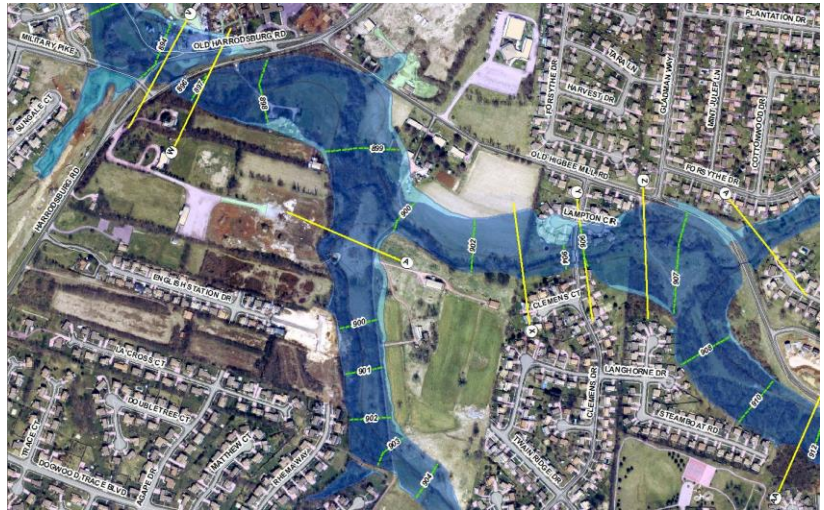
## Floodplain Management and Analysis

GRW's floodplain management experience ranges from flood insurance studies to flood mitigation priority assessment and studies to final system design. Our staff has specialized experience in the many areas of services needed for the hundreds of stormwater projects we have completed for communities large and small, as well as the U.S. Army Corps of Engineers and the Federal Emergency Management Agency (FEMA).

### Our **floodplain mitigation and stormwater master planning**

**experience** includes evaluation of existing systems for numerous communities, as well as using our survey technology to locate existing infrastructure to create a GIS system and catalogue flood complaints into a prioritized database. We also have gathered field information about the size and condition of storm sewer systems and detention facilities for use in modeling to determine the extent of flooding and identify specific problem solutions. It is critical to identify all of the factors that contribute to drainage problems, which may require looking beyond the localized area. GRW has been successful in evaluating these key factors and providing solutions that consider the effects of the project on the larger watershed.

Using software such as XPSWMM, HECRAS/HECHMS, PondPack, Civil3D, StormCad, TR55, HY8 and others, GRW routinely creates **computerized hydrologic and hydraulic modeling to evaluate existing and proposed conditions for flooding analysis** and infrastructure design. Our models typically consist of discrete computer programs and databases with the capability of accurately simulating a simple or complex watershed, with pervious and impervious areas, varying land uses, ponds, basins, and sinkholes. Hydraulic analysis can be linked to a terrain model, if necessary, to predict extent as well as depth of flooding. Depending on the modeling software used, various other types of applications, such as GIS integration and work order systems, can be incorporated. Accurate computer modeling



enables our clients to make informed decisions by simulating the system's hydraulics, performing analysis, and displaying analytical results on-screen. The models can be supplemented by field inspection and flow monitoring data, for more accurate predictions and calibration of coefficients.

GRW has also prepared **stormwater management tools** to assist communities in prioritizing infrastructure needs. The management software enables ranking of the problem severity; determines the level of effort required to resolve the issue; and allows the agency to review, update, and track all existing stormwater projects. Based on the scoring, it can be determined whether the project is a maintenance or repair issue that can be completed by the agency's own crews. Identifying and ranking the projects in this manner provides the most efficient way of dealing with and planning for stormwater infrastructure repairs. Our stormwater design manual preparation experience has allowed communities to implement design standards to ensure that stormwater infrastructure is effective and consistent as development, or redevelopment, occurs.

In addition, GRW often continues into the **design phase for the improvements recommended** by the master plans. We have designed stormwater, combined sewer and sanitary sewer improvement projects for clients such as Lexington, Louisville, and Versailles, Ky., and Indianapolis, New Albany, Muncie, Yorktown, and Bloomington, Ind. This work has included design and construction observation



of perforated drain systems, ditches, detention basins, underground retention, pipes and channels with associated roadway reconstruction, resurfacing and restorations. With LEED Accredited Professionals in key disciplines, GRW is also committed to utilizing environmentally focused and sustainable concepts in our project design. To limit disruption of natural water hydrology by reducing impervious cover, increasing on-site infiltration, reducing or eliminating pollution from stormwater runoff, GRW promotes infiltration and specifies vegetated roofs, pervious paving, and rainwater harvesting systems. Furthermore, GRW utilizes rain gardens, bioswales, rainwater recycling, and hydrodynamic flow separators to limit disruption and pollution of natural water flows by managing stormwater runoff.

Our work also includes Phase I and Phase II MS4 experience, and our staff routinely utilizes software products for sanitary/stormwater modeling applications including: XPSWMM, STORMCAD, PONDPACK, HEC-HMS, HEC-RAS, MWH Soft Infoworks, and ICPR (Interconnected Channel and Pond Routing).

A summary of GRW's stormwater planning and design experience includes:

- Flood insurance studies
- GPS inventory, GIS mapping and GIS-based land use studies

- Hydraulic and hydrologic studies
- Stormwater utility justification and implementation
- Stormwater master plans, design manuals, and ordinances
- Stormwater quality management plans
- NPDES permit applications
- MS4 assistance
- Existing systems inventory and capacity analysis
- Illicit discharge, erosion control, and post-construction runoff ordinances
- Structural and maintenance conditions assessments
- Various "green" stormwater applications, such as biofiltration swales, to reduce runoff
- Neighborhood drainage and channel improvements
- Local and regional stormwater control facilities including channels, pipes, inlets, catch basins, detention basins, etc.
- Flood protection including design of flood walls/levees, flood pumping stations and flood proofing buildings
- Operations review of existing stormwater/flood pumping stations



## Geospatial Services

Since 1976, GRW has provided comprehensive geospatial services across the nation. Offering the latest technology, we specialize in providing highly accurate data solutions. From surveys and [digital aerial photography](#) to mapping and [GIS](#), we have the expertise and resources that will ensure the success of your project. When you select the GRW team, you have access to an experienced team of certified photogrammetrists, certified GIS professionals, mapping scientists, and licensed surveyors known for delivering quality projects, within budget and schedule.

### Summary of Services

- GPS and Conventional Surveying
- Geodetic Surveys
- Monumentation Surveys
- As-Built/ALTA/Boundary Surveys
- Height Modernization
- Airport Obstruction Surveys
- Digital Aerial Photography
- ABGPS/IMU/Control
- Digital Orthophotography
- Photogrammetric Mapping
- DEM/DTM/Contours
- Aerial LiDAR
- 3D HDS Terrestrial Scanning
- Mobile Mapping
- GIS Design and Implementation
- Custom Programming
- Data Conversion
- Web-Based GIS

### Photogrammetric Mapping

We utilize an array of the latest software and hardware, including 1st-order stereo plotting instruments interfaced with the Kork Digital Mapping Software System (KDMS) for collection of digital mapping data. Experienced individuals, trained in the operation of stereo plotter instruments, softcopy technology, data conversion, and digital data base creation, ensure accurate results throughout the data collection/production process.

Such expertise is necessary for the development of an accurate digital base map, the founding blocks for a GIS. Edits to planimetric and topographic data are performed using softcopy photogrammetric workstations and MicroStation software. These workstations will be used to digitize new features, delete existing features (as required) and modify existing features. The result of this process will be a single, consistent, integrated data set covering the project area that is current as of the date of photography.

### 3D Data Options

GRW offers full 3D surveying/ mapping, CADD and GIS services utilizing the latest technology in all of our major disciplines including: Digital Terrain Modeling/Digital Elevation Modeling Airborne LiDAR Terrestrial LIDAR Mobile LiDAR 3D Base Mapping and Digital Orthoimagery Mapping 3D GIS Analysis Building Information Modeling (BIM)

Our 3D services are processed and delivered using the leading CADD and GIS software including the latest versions of Bentley Microstation, AutoDesk AutoCAD, AutoDesk Revit, and ESRI ArcGIS.

Using Airborne LiDAR in conjunction with conventional photogrammetric processes, we create precise 3D models of the earth's surface supporting a wide variety of applications including hydrological modeling, floodplain delineation, contouring, volume calculations, 3D visualization, 3D Fly-Through, shaded relief maps, and line-of-site studies.

With ground and mobile LiDAR, we are able to create full three dimensional models of project sites including the surface, above ground features (buildings, trees, bridges, pipelines, etc.) and tunnels. Our Terrestrial Scanner creates a 3D model by setting the unit in one or more stationary locations and performing the 3D survey. If multiple setups are used, the 3D models can be stitched together into a single integrated 3D model of the project site including draped 3D photographs.

Using our softcopy 3D stereo workstations, we can collect mapping features such as roads, buildings, power poles, pipes and trees in full three dimensions. Combining these 3D features with a Digital Terrain Model (DTM) produces a 3D model of the project site.

### 3D GIS Analysis

GRW utilizes the latest GIS tools to process, analyze and deliver 3D GIS databases. We have recently completed several 3D mapping projects for the Federal Aviation Administration (FAA) using a combination of ESRI 3D Analyst and custom in-house developed tools. These 3D tools automatically create the 3D airspace safety polygons surrounding an airfield and then analyze the 3D mapping features to determine if any features break the 3D surfaces. Any features that break the surfaces are classified and documented as Airfield Obstructions. The final obstruction database is field verified and delivered in spreadsheet and GIS formats.



## GIS Services

GRW offers a complete package of Geographic Information System services, from project planning and needs analysis, to design, implementation, maintenance, and on-site training. We have received several awards for GIS design and data conversion, recognizing our commitment to delivering the most accurate data. GRW specializes in comprehensive GIS services, including GIS Design, Implementation, Development, Data Conversion, Application/Programming, and Web-based GIS services. We have completed a variety of GIS projects such as utility GIS design, parcel mapping, impervious surface, and floodplain mapping.

## Surveying

In continuation of the diverse list of services Chapman Technical Group offers, the firm's clients enjoy the benefit of affordable, in-house surveying capabilities. Specializing in a variety of surveying services including boundary, commercial and residential, the professional surveyors at Chapman Technical Group ensure a successful project from the ground up. Skilled personnel offer extensive surveying experience involving site development, boundary surveys, highways, and environmental engineering, including flood related surveys.

GRW provides GPS and conventional surveying utilizing the latest technology. Our survey services include utility data collection, topographic, planimetric, GIS feature collection, obstruction surveying, height modernization, geodetic, monumentation, boundary/ALTA, and related services. We routinely perform topographic surveying and mapping which involve the location of all utilities and improvements. As a rule, every engineering project requires a topographic survey. GRW's personnel have performed thousands of topographic surveys, including utilization of a Laser Profile with GPS Pathfinder and Data Collector. The selected topographic survey technique depends on site characteristics and requirements such as terrain, vegetation, desired accuracy and physical improvements. All physical features, i.e., utilities, drainage, and spot elevations, are radially located throughout the site to adequately map the project.



## **SECTION 2.0** | **Project Experience and References**

## 2.0 Project Experience

### Floodplain Redelineation

#### Town of Shepherdstown | Shepherdstown, WV

Located along the Potomac River, historic Shepherdstown is the oldest town in West Virginia. More than six natural springs feed Town Run before it enters the south end of town and runs through the center Shepherdstown.

A Flood Insurance Study published in 1979 indicates flood hazard areas along Town Run, but its basis was not well substantiated, resulting in flood zones that do not follow topography. The mapped AO zone and X-shaded zones indicate shallow flooding, less than three feet in depth throughout the business district.

The Town Run watershed is a highly karstic area. Furthermore, Town Run is confined to man-made channels and culverts throughout the business district. Local officials and residents attest that the

flows in Town Run stay well inside the channel and flooding does not occur. With the flood zones covering much of the downtown, property owners are paying high flood insurance premiums based on the zones assigned in the 1970s that seem arbitrary.

GRW is assisting Shepherdstown with developing a flood analysis to better map the flood hazard areas. This work consists of a hydrologic model to represent the karst watershed, measurement to determine the hydraulic capacity of Town Run and a prediction of flooding frequency in the business district.

**Client Contact:** Harvey Heyser, Planning and Zoning Officer, Town of Shepherdstown, (304) 876-6858, [hheyser@shepherdstown.us](mailto:hheyser@shepherdstown.us)

### Flood Insurance Study for Lexington Fayette County - 2005

#### Lexington-Fayette Urban County Government | Lexington, KY

GRW completed a detailed digital Floodplain Redelineation project for the Lexington-Fayette Urban County Government (LFUCG) in Lexington, Kentucky in 2004 and 2005. The project involved the creation of new Digital Flood Insurance Rate Maps (DFIRMs) and profiles in compliance with the standards from FEMA's new Map Modernization Program.

As part of this project, GRW started with the information from the 1992 LFUCG flood study accomplished by GRW. We first converted the elevations from the 1992 flood study from the 1929 National Geodetic Vertical Datum (NGVD29) to the 1988 North American Vertical Datum (NAVD88). We then used 3D analysis software to intersect the new

flood elevations with the high accuracy Digital Terrain Model (DTM) that GRW helped create as part of the LFUCG mapping project. The project covered over 70 miles of stream centerlines.

The result was new detailed DFIRMs that defined the floodway, 100-year flood zone and 500-year flood zone with much greater detail and precision than the original Flood Insurance Rate Maps. The final data was delivered to LFUCG in ESRI Shape File format in compliance with FEMA standards. The final DFIRM panels were generated from the GIS database using the ESRI ArcGIS suite of products.

**Client Contact:** Greg Lubeck, PE, Municipal Engineer Sr., Lexington-Fayette Urban County Government, (859) 258-3446, [glubeck@lexingtonky.gov](mailto:glubeck@lexingtonky.gov)

## Stormwater Supplemental Environmental Project

### Lexington-Fayette Urban County Government | Lexington, KY

This Supplemental Environmental Project (SEP) resulted from a Consent Decree or settlement agreement with state and federal governments. The Consent Decree requires Lexington to resolve problems with its stormwater and sanitary sewer systems over the next 11 to 13 years. Providing a long-term strategy to manage stormwater flooding was the goal of this Lexington-Fayette Urban County Government (LFUCG) project.

GRW assisted LFUCG to develop and implement a long-term strategy to manage stormwater flooding, understand the critical nature of flooding events and stormwater problems, and consistently evaluate the severity of such occurrences across watersheds.

One part of the SEP project included an evaluation and analysis of flood prone areas and creation of a methodology for identification of future capital projects to mitigate flooding impacts on property. GRW developed a project prioritization system that is used by LFUCG staff to objectively select the highest priority projects for design and construction. The prioritization system allows new projects to be incorporated into and ranked with existing projects.

To improve on the findings and usability of the SEP, GRW developed a stormwater master planning work plan that provides field level engineering Standard Operating Procedures for consistent data collection, data management, and data storage used to develop watershed based master plans. The work plan is used to guide the program management.



In addition, GRW used web-based tools (including Newforma) and GIS to establish a project website. The website was used to give GRW and LFUCG access to the critical stormwater information developed during the project.

**Client Contact:** Charles Martin, PE, Director, Division of Water Quality, Lexington-Fayette Urban County Government, (859) 425-2455, [chmartin@lexingtonky.gov](mailto:chmartin@lexingtonky.gov)

## Flood Insurance Study for Lexington-Fayette County - 1992

Federal Emergency Management Agency, Region IV | Atlanta, GA

GRW accomplished an extensive flood study in Lexington/Fayette County, KY, including field inventory surveys, hydrology, hydraulics, mapping and report preparation. The flood study area included approximately 50 miles of streams and channels including 147 bridges, culverts and other drainage structures which were studied in detail to determine flood profiles, floodplains, and floodways. The end products included floodplain boundary maps, floodway maps, flood study report, HEC-1 models, and HEC-2 models for planning and zoning use to prevent flooding. The HEC-1 models were developed using a 24-hour duration storm that meets the ordinance and storm water regulations. Extensive coordination with FEMA, Louisville Corps of Engineers, and Lexington-Fayette County yielded a consensus on the preparation of these models so that realistic results would be attainable and they could be maintained up to date. The HEC-2 models were prepared and run to develop the flood profiles and floodways. They are easily maintainable to keep up with new development.

### The Scope of Work included the following major elements:

- Coordination with local officials to determine likely development areas around floodable waterways
- Control surveys and monumentation of control points
- Surveys of channel, valley and bridge sections for input to the HEC-2 water surface profile model
- Hydrologic analysis of watersheds and sub watersheds utilizing HEC-1 to determine discharges for various frequency storm events
- Open channel hydraulic analysis utilizing HEC-2 for 10-, 50-, 100- and 500-year storm events to determine flood profiles
- Floodway determination for 100-year flood
- Preparation of Flood Insurance Study Report
- Preparation of Flood Boundary and Flood Hazard Risk Maps

### The project included the following streams, and numerous tributaries:

- |                                    |                                       |   |
|------------------------------------|---------------------------------------|---|
| ▪ West Hickman Creek - 5 miles     | ▪ Gardenside Tributary - 1.1 miles    | ▪ North Elkhorn Creek - 3 miles         |
| ▪ Higbee Mill - 1.3 miles          | ▪ East Hickman Creek - 5.2 miles      | ▪ South Elkhorn Creek - 14 miles        |
| ▪ Tates Creek - 2.3 miles          | ▪ Reservoir Tributary - 1 mile        | ▪ U.K. Agriculture Branch - 5 miles     |
| ▪ Lansdowne Tributary - 1.1 miles  | ▪ Richmond Road Tributary - 1.6 miles | ▪ Eastland Park Tributary - 2 miles     |
| ▪ Kentucky River - 12 miles        | ▪ Reservoir Tributary - 1 mile        | ▪ Wilson Downing Tributary - 3 miles    |
| ▪ IBM Tributary - .65 mile         | ▪ Cadentown Branch - 1.9 miles        | ▪ Stonewall Estates Tributary - 3 miles |
| ▪ Tiverton Way Tributary 1.6 miles | ▪ Hume Road Tributary - 1.6 miles     | ▪ Steele Run - 5 miles                  |
| ▪ Town Branch - 12 miles           | ▪ Todds Road Tributary - 2.6 miles    | ▪ Cave Creek - 4 miles                  |
| ▪ Bracktown Branch - 2.4 miles     | ▪ Cane Run - 9 miles                  | ▪ I-75 Tributary - 4 miles              |
| ▪ Wolf Run - 4.4 miles             | ▪ Delong Road Tributary - 2 miles     |   |
| ▪ Vaughn Branch - 2.1 miles        |                                       |   |
| ▪ Big Elm Tributary - 1.1 miles    |                                       |   |

## GIS, Impervious Surface Mapping

### Lexington-Fayette Urban County Government | Lexington, KY

GRW completed a comprehensive impervious surface mapping project covering all of Fayette County, Kentucky. The data was digitized from the 2007 Lexington-Fayette Urban County Government digital orthophotography and was delivered in ESRI Personal GeoDatabase format. The impervious surface data was used by LFUCG to calculate the newly proposed stormwater tax for homes and businesses as a result of a settlement with the Environmental Protection Agency. The final database covered almost 300 square miles of land and contained almost 500,000 topologically structured GIS polygons. The impervious surfaces were classified using the following types:

- Buildings
- Roads
- Paved Driveways
- Paved Parking
- Airfield Pavement
- Bridges
- Pads
- Private Sidewalks
- Public Sidewalks
- Recreation
- Unknown
- Pervious



**Client Contact:** Greg Lubeck, PE, Municipal Engineer Sr., Lexington-Fayette Urban County Government, (859) 258-3446, [glubeck@lexingtonky.gov](mailto:glubeck@lexingtonky.gov)



## MS4 Stormwater Infrastructure Mapping

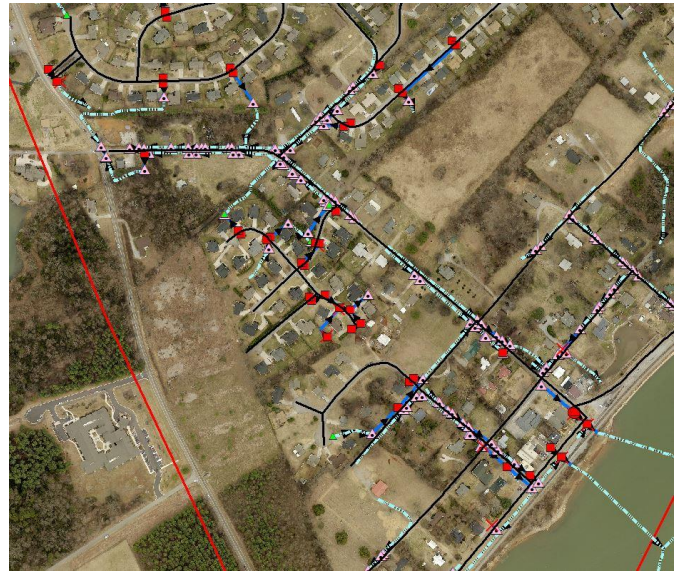
### Knox County Stormwater Management | Knoxville, TN

GRW completed a comprehensive stormwater GPS/GIS inventory project for Knox County, TN, covering approximately 170 square miles of the non-incorporated areas of the County. The project was completed from 2015 through 2018 in support of the County's Municipal Separate Storm Sewer System (MS4) permit and involved the sub-meter horizontal and vertical field collection of stormwater features including:

- Catch Basins/Inlets
- Manholes
- Pipe Ends
- Open Ditches/Channels
- Pipes/Culverts
- Spillways
- Ponds
- Junction Boxes

Stormwater features were surveyed, photographed, inventoried, and assessed as part of the field collection effort which included over 40,000 separate stormwater structures. Open channels and ditches were digitized from 3D aerial LiDAR data to connect the surveyed stormwater structures and pipes.

All stormwater data was processed and delivered in ArcGIS Geodatabase format. The stormwater structures, pipes, and ditches were delivered as part of a project-wide geometric network that fully supported upstream and downstream tracing throughout the project area. Photographs and sketches were produced for each surveyed structure and were hyperlinked to the appropriate feature in



the GIS database. The final ArcGIS GeoDatabase contained the following approximate quantities:

- 40,000 Stormwater Structures
- 26,000 Stormwater Pipes and Culverts
- 1,750 Miles of Open Ditches and Channels
- 80,000 Hyperlinked Photographs and Sketches
- 1,200 Hyperlinked Subdivision Plats

Attributes collected and delivered in the ArcGIS Geodatabase included asset ID number, pipe size, pipe material, rim elevations, invert elevations, contamination (odor, sheen, color, foam, silt, etc.), basin, sub-basin, cover type, rainfall, and TN State Plane Easting/Northing.

**Client Contact:** Tracy Jones, NPDES Project Manager, Knox County Stormwater Management, (865) 215-5811, [tracy.jones@knoxcounty.org](mailto:tracy.jones@knoxcounty.org)



## Stormwater Impervious Area Mapping

### City of Indianapolis | Indianapolis, IN

GRW was selected by the Indianapolis Department of Public Works (DPW) to map, measure and tabulate all residential impervious surfaces in Marion County, Indiana. The project covered approximately 400 square miles and 270,000 residential parcels. The resulting data was used to establish stormwater fees for all residential properties in Marion County with stormwater bills being sent to home owners in the fall of 2015. The project was initiated in February of 2015 with production being completed in June 2015 and final edits/QA/QC being completed in July of 2015. The impervious surface and billing data was published on-line for public access'

The impervious surface data was generated from existing DPW digital orthophotography from 2013 and 2014 in compliance with Marion County Impervious Surface standards and includes the following impervious surface types:

- Buildings
- Decks
- Patios
- Paved Driveways
- Paved Parking Areas
- Unpaved Driveways
- Unpaved Parking
- Private Sidewalks
- Walls
- Tanks
- Greenhouses
- Sheds
- Recreation Area
- Pools
- Detached Pads
- Compacted Earth

The production phase of the project was completed in an extremely aggressive 3-month time frame. The final impervious surface GIS database contained over 1,200,000 classified impervious surface polygons that were each assigned an individual owner based on the Marion County GIS parcel data. After the initial mapping and measurement was completed, impervious surface totals were tabulated on a parcel-by-parcel basis for the 270,000-plus residential parcels and stormwater fees were calculated based on the tabulated values. The final impervious surface tabulations were delivered in ArcGIS Geodatabase and Microsoft Excel formats with one entry in the database for each unique residential PIN number.

**Client Contact:** Michael Massonne, Project Manager, City of Indianapolis, (317) 327-8701



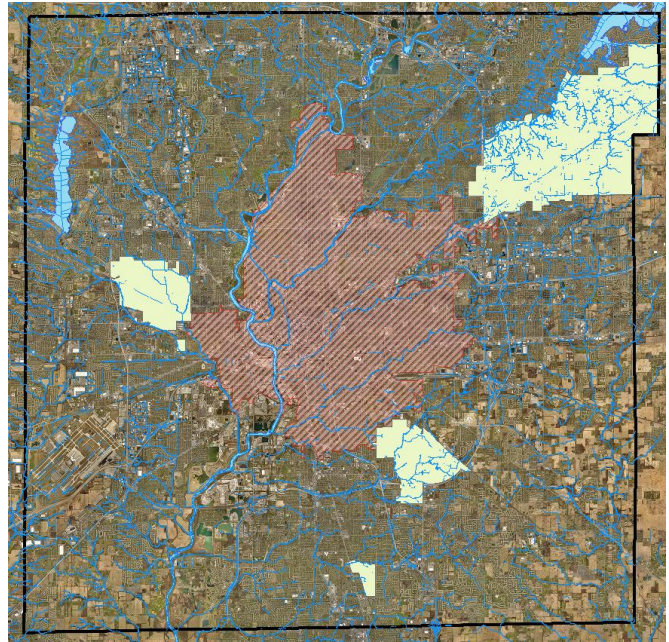
## Stormwater NPDES Illicit Discharge Detection Inspection and Mapping

### City of Indianapolis | Indianapolis, IN

For the Indianapolis Department of Public Works, GRW provided outfall inspection and mapping services for the Stormwater National Pollutant Discharge Elimination System (NPDES) Illicit Discharge Detection and Elimination Program (IDDE).

GRW responsibilities included:

- Dry weather inspection of identified outfalls from pipes and ditches along prioritized rivers and streams within the City's Municipal Separate Storm Sewer System (MS4) area in compliance with the City's MS4 NPDES permit and the City's Outfall Inspection Standard Operating Procedure
- Documentation of outfall conditions including photographs, outfall location (latitude and longitude), pipe/ditch size, pipe type, pipe/ditch condition and evidence of pollutants (flow, odors, clarity, oil sheen, floatables and/or stains. etc.)
- Notification, including inspection report and outfall location in GIS format, to City within 24 hours of outfalls that are suspected to contain illicit discharges
- Web-based GIS project tracking website that allowed the client to actively monitor the status, quality and completeness of the database while the project was ongoing
- Final delivery of outfall locations, attributes, and hyperlinked photographs in ArcGIS GeoDatabase format
- Report and analysis of collected data



**Client Contact:** Kathy Allen, Project Manager, City of Indianapolis, (317) 327-8428, [kathy.allen@indy.gov](mailto:kathy.allen@indy.gov)



## Flood Repair Project

### Clay County Schools | Clay, WV

The flood of 2016 caused considerable damage to Clay County High School including damage to the football and softball fields, restrooms and pressbox, the lower level gymnasium locker room, the gymnasium floor, and the bus garage. Chapman Technical Group was engaged to provide design services to rehabilitate the athletic fields and support facilities, repair and floodproof the lower locker room, replace the gymnasium wood floor, and replace the bus garage.

Work included the floodplain analysis of the Elk River to evaluate the impacts of the proposed improvements to the athletic fields.

The project is completely funded by FEMA and the work was broken out into several contracts. Construction will occur over a two-year period.

**Client Contact:** Joe Paxton, Superintendent, Clay County Schools, (304) 587-4266



## North Laredo Border Wall and Rio Grande River Floodplain Analysis

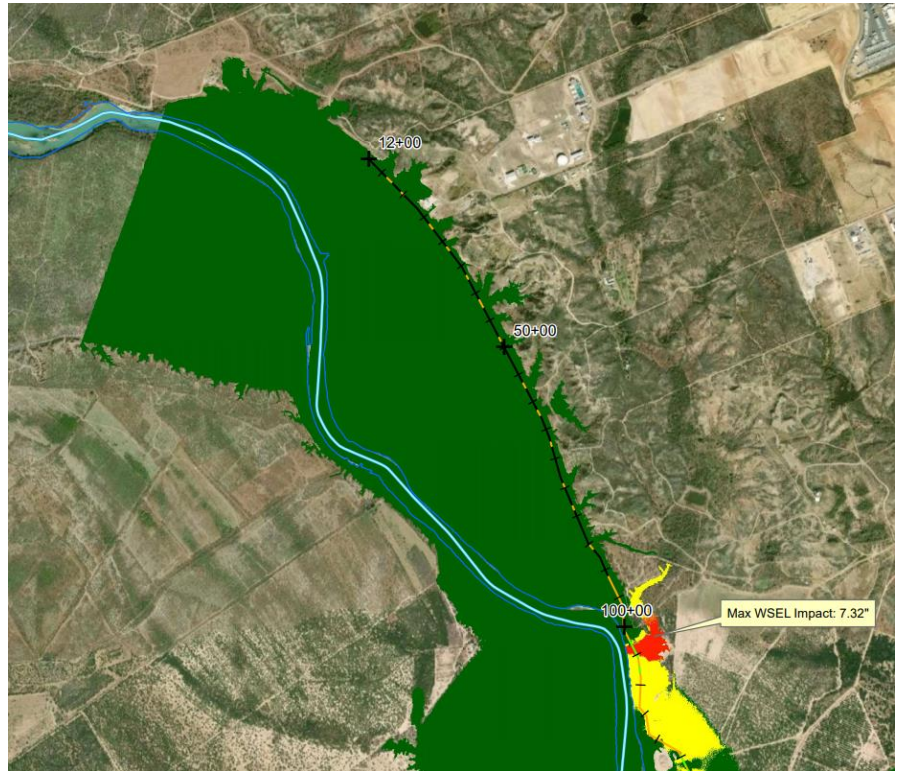
### U.S. Customs and Border Protection

GRW is leading the design team, in conjunction with Caddell Construction, for the design/build of approximately 14 miles of border wall in North Laredo, Texas. For this \$275,000,000 project, GRW's work includes roads, bridges, drainage, foundations, electrical, electronic security and telecommunications.

GRW evaluated the flooding impacts of the 14-mile border wall within the floodplain of the Rio Grande River, near Laredo, TX. A comprehensive 1D/2D floodplain model was created in HECRAS for review and approval by the US International Boundary Water Commission. The model includes a terrain model developed from bathymetry, project LiDAR and statewide LiDAR mapping. This terrain was revised to represent project grading for the proposed conditions model. The 2-dimensional flow areas consist of over 80,000 cells, with 24 lateral structures connecting to the 1-dimensional flow model. There are 163 cross sections, and 54 storage area connections to simulate the 14-mile structure.

The model was calibrated using a six-day flow record from Hurricane Alex (2010). All model runs used the full momentum equations to solve the unsteady flow hydraulic equations. Project impacts were determined by a comparison of existing and proposed maximum water surface elevations, as well as flow deflection. Review by the USIBWC is currently pending.

**Client Contact:** Gabriel Olivas, Contracting Officer, U.S. Customs and Border Protection, (202) 819-0421, Gabriel.g.olivas@cbp.dhs.gov



## Transportation Projects and Flood Analysis

GRW routinely conducts hydrologic and hydraulic modeling in support of highway design projects. Hydrology methods employed range from simplistic methods such as the rational formula and regional regression equations, to more complicated rainfall-runoff models such as SWMM. For hydraulic modeling in open channel flow cases, complicated algorithms of the momentum and continuity equations (such as HEC RAS) may be used, or simplified methods that rely on empirical equations such as Manning's equation or Leopold and Maddock type power equations. Open channel hydraulic analysis is typically one dimensional, and steady state.

GRW often conducts pressure flow analyses for drainage structures. This analysis requires computation of the hydraulic grade line and the energy grade line, with consideration of friction losses. Flow in a pipe or network can alternate between open channel flow and pressure flow and must be checked for these transitions.



GRW routinely uses the methods and software mentioned above to compute peak flows and water surface levels for transportation and commercial development projects.

## Analyze Flooding Impacts According to Local and/or FEMA Criteria

When our highway projects intersect previous FEMA flood study area, we must determine whether a project will impact the flood level. This is accomplished by calculating the before and after 100-year flood elevations. These computations require information on the 100-year discharge and the geometry of the stream channel. HEC RAS is the typical software tool employed to predict flood levels. Some local flood ordinances require the computation of other flood levels (2-year, 10-Year, 25-year, 50-year, and/or 500-year). If we compute no effect caused by the proposed highway design, we certify "no-rise" and the FEMA maps are not revised. For unavoidable impacts to the floodplain and/or floodway, we work with the owner to prepare FEMA map revisions. Coordination with the local floodplain coordinator is required for all cases of construction in a floodplain (or floodway).

Recent GRW highway projects that have required floodplain analysis:

- US 421 Clay County, Kentucky (3 floodplain crossings)
- KY1927 Fayette County, Kentucky (1 floodplain crossing)
- KY 147 Henry County Kentucky (3 floodplain crossings)
- Polo Club Drive, Fayette County, Kentucky (2 floodplain crossings)
- KY 377, Rowan County, Kentucky (3 floodplain crossings)

**Client Contact:** Doug Gesso, Chief Drainage Engineer, Kentucky Transportation Cabinet Division of Design, Drainage Branch, (502) 564-3280

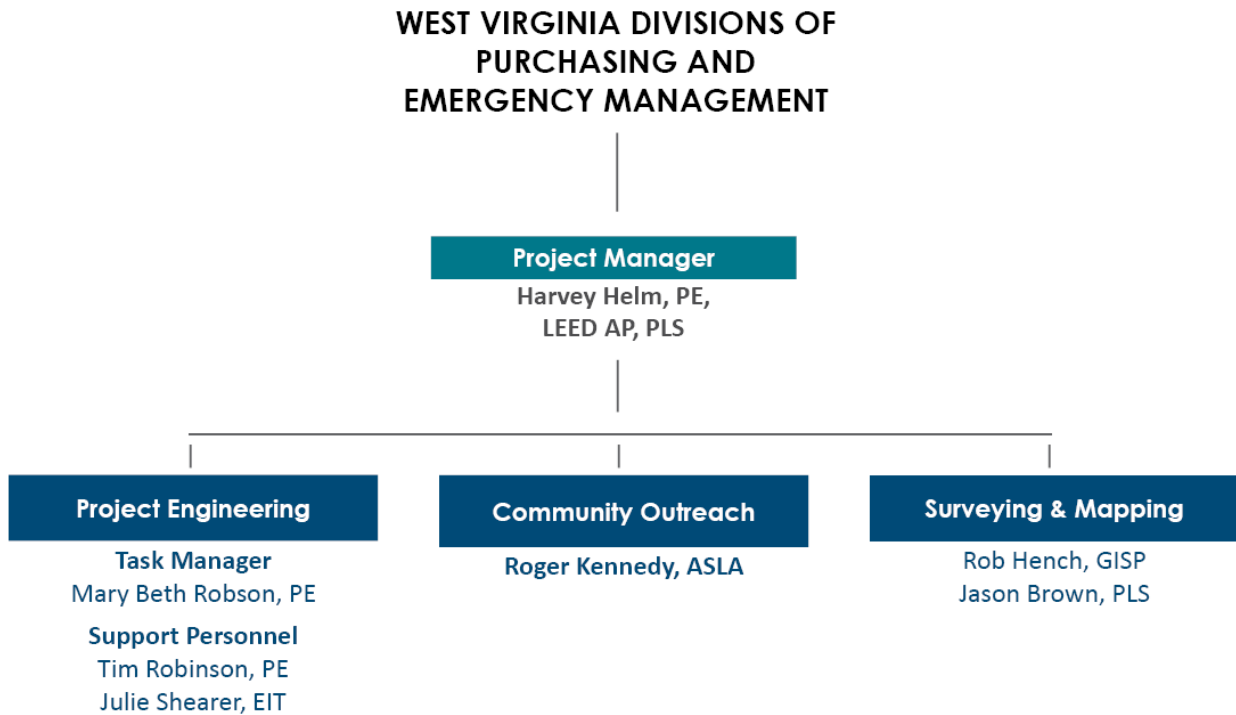
## **SECTION 3.0** | **Staff Qualifications**



### 3.0 Staff Qualifications

The organizational chart below summarizes the **key project team member** roles and responsibilities. Additional professionals from both our West Virginia and Kentucky offices are available to staff this project as well; resumes are available upon request. With nearly four decades of stormwater experience, **GRW’s Project Manager Harvey Helm, PE, LEED AP, PLS**, will provide overall project management

and technical guidance, and ensure the project team has the adequate resources to complete a successful, timely project. Assisting Harvey with the management of your project will be **Mary Beth Robson, PE (33 years’ experience)**. This project management team offers you the expertise you need and expect.



## Harvey Helm, PE, LEED AP, PLS | GRW Project Manager



### YEARS OF EXPERIENCE:

With GRW: 47

Total: 47

### EDUCATION

B.S., Civil Engineering, 1977,  
University of Kentucky

### REGISTRATION

Professional Engineer: KY, TN,  
IN, OH, MD, MS, GA, NC, AL, AR,  
**WV** ████████ NY, VA, NM, AZ,  
TX

LEED Accredited Professional

Professional Land Surveyor: KY

### PROFESSIONAL AFFILIATIONS AND TRAINING

National Society of Professional  
Engineers

Kentucky Society of Professional  
Engineers

Soil and Water Conservation  
Society

Harvey's stormwater expertise includes hydrology and hydraulics including computer analysis for flood insurance studies and stormwater master plans. He has designed numerous municipal stormwater control facilities including open channels, inlets, pipes and detention basins. These projects included coordination with local authorities, state highway departments (encroachment permits), state water departments and the Corps of Engineers when applicable. Harvey has also performed inspection and analysis for over 60 dams and reservoirs for the U.S. Corps of Engineers, making him very familiar with the USACE's permitting process for dams and reservoirs. He also has experience with engineering design for water supply reservoirs in Tennessee, Kentucky, Indiana, and Ohio. Harvey and GRW's stormwater engineers have access to and experience with software programs including XPSWMM, HEC-HMS, HEC-RAS, FlowMaster (Bentley Systems), and PondPack (Bentley Systems).

### RELEVANT PROJECT EXPERIENCE

#### **Shepherdstown Floodplain Redelineation, Shepherdstown, WV –**

Principal. Flood analysis to better map flood hazard areas. Work consists of hydrologic model to represent karst watershed, measurement to determine hydraulic capacity of Town Run and prediction of flooding frequency in business district.

#### **FEMA Flood Insurance Study for Lexington Fayette County - 2005,**

**Lexington, KY –** Civil Engineer. Mapping for a detailed digital Floodplain Redelineation involving creation of new Digital Flood Insurance Rate Maps (DFIRMs), covering over 70 miles of stream centerlines, and profiles in compliance with standards from FEMA's new Map Modernization Program. New detailed DFIRMs define the floodway, 100-year flood zone and 500-year flood zone with much greater detail and precision than the original Flood Insurance Rate Maps.

#### **FEMA Flood Insurance Study for Lexington-Fayette County - 1992,**

**Lexington, KY –** Project Manager. Engineering consulting for a flood insurance study involving 50 miles of streams and channels including 147 bridges, culverts and other drainage structures, providing floodplain boundary maps, floodway maps, flood study report, HEC-1 models and HEC-2 models for planning and zoning use to prevent flooding.

#### **Bowling Green FEMA Flood Insurance Study, Bowling Green, KY –**

Project Manager. Completed an extensive Flood Insurance Study with tasks including control surveys and monumentation of control points; survey of channel, valley and bridge sections for input to the HEC-2 water surface profile model and surveys of sinkhole limits; and mapping of sinkhole watersheds.

#### **Lexington NPDES Stormwater Permit, Phase I, Lexington, KY –**

Project Manager. Work included inventory of facilities, review of regulations, preparation of all map exhibits, development of hydrologic characteristics for seven major watersheds and selection of field monitoring points. Inventory included field inventory and GIS input of all significant stormwater facilities (pipes, channels, ditches, inlets, and outlets, etc.). Monitoring included location of logical monitoring points for pollutant discharges and a program for sample collection and testing. Hydrologic characteristics of each

watershed were determined in order to develop quantity of discharges and likelihood of certain contaminants from land use characteristics.

**Boone County Public Works County-Wide Watershed Plans, Boone County, KY** – Project Manager. Engineering consulting for development of watershed plans, in conjunction with the Stormwater Master Plan, for the Upper Gunpowder Creek Basin, leading to implementation of a county-wide study for the remaining 7 basins. Involved inventory of existing stormwater facilities, public meetings for identification of stormwater problem areas, development of HEC-1 models for basin determination of problem areas by preliminary hydraulic analysis of major structures, capital improvement plan, and identification and preliminary modeling of regional detention basin for remediation of problem areas.

**Boone County Public Works Stormwater Drainage Master Plan, Burlington, KY** – Project Manager. Engineering services for stormwater master planning including development of policy statements and sample ordinance, organization plan, operations and maintenance plan, financial plan, capital improvement plan and review of technical criteria. Conducted inventory of existing storm water facilities and HEC-1 models created for the drainage basin.

**Florence Stormwater Master Plan Update, Florence, KY** – Project Manager. Mapping for update of city's Stormwater Drainage Master Plans including significant changes in regulations, outline of series of suggested policy statements, provision of specific guidance on stream repair, and alternatives for some possible locations for new regional stormwater basins. Resulting GIS files indicate stream designations of perennial, intermittent, Waters of Florence, and other waters; jurisdictional authorities (whether Corps of Engineers, Division of Water, or City of Florence); basin and subbasin boundaries.

**Florence Surface and Stormwater Drainage Master Plan, Florence, KY** – Project Manager. Engineering consulting for a surface and stormwater drainage master plan providing policy statements and sample ordinance, organization plan, operations and maintenance plan, financial plan, capital improvements plan, inventory of existing stormwater facilities, and HEC-1 models of 4 major drainage basins.

**New Albany Stormwater Drainage Master Plan, New Albany, IN** – Project Engineer. Comprehensive city-wide stormwater drainage master plan structured to address both regional and localized management of stormwater runoff; specific drainage damage complaints investigated and developed into mini projects suitable for implementation into the state grants program.

**Owensboro Stormwater Drainage and Facilities Master Plan, Owensboro, KY** – Project Engineer. This stormwater master plan included a comprehensive inventory, analysis and recommendations for management and improvement of stormwater facilities and flood problem areas in the Owensboro metropolitan area. Work involved the development of discharge hydrographs for all drainage basins and hydraulic analysis of all major facilities of the drainage basins.

## Mary Beth Robson, PE | GRW Task Manager: Engineering



### YEARS OF EXPERIENCE:

With GRW: 16  
Total: 33

### EDUCATION

B.S., Chemical Engineering,  
1988, University of Cincinnati

M.S., Environmental  
Engineering, 1990, University of  
Notre Dame

### REGISTRATION

Professional Engineer: KY, OH,  
WV (pending)

### PROFESSIONAL AFFILIATIONS AND TRAINING

EPA Green Infrastructure, 2019

2D HEC RAS, 2018

Design of ADA Sidewalk  
Facilities, 2018

401/404 Permitting, 2014

Karst Stormwater Management,  
2010

Water Surface Profile

Computations using HEC-RAS,  
2014

Traffic Management Plan  
Training (KYTC) 2017

Kentucky Stormwater  
Association

American Council of  
Engineering Consultants

National Society of Professional  
Engineers

Kentucky Society of Professional  
Engineers (past Bluegrass  
Chapter President)

LEED Green Associate  
Preparation, June 2010

Mary Beth is experienced in fields of stormwater management, floodplain analysis, water quality, watershed and water supply management, and the effects of land use changes on streams and rivers. She has a thorough knowledge of hydrology and hydraulics which is critical in predicting flooding as well as pollutant discharges. Mary Beth's related projects include stormwater master plans, stormwater and flood modeling, detention basin analysis, and hydrology studies for water supply and pollutant discharge predictions. She uses XPSWMM, Civil 3D, HEC-HMS, HEC-RAS, FlowMaster (Bentley Systems), PondPack (Bentley Systems) and other hydrology and hydraulic modeling programs. She also has extensive expertise with federal and state stormwater regulations including FEMA floodplain regulations, and Clean Water Act Section 401 and 404 permits.

### RELEVANT PROJECT EXPERIENCE

**Shepherdstown Floodplain Redelineation, Shepherdstown, WV** – Project Manager. Flood analysis to better map flood hazard areas. Work consists of hydrologic model to represent karst watershed, measurement to determine hydraulic capacity of Town Run and prediction of flooding frequency in business district.

**Meadow River Rail Trail, Fayette & Greenbrier Counties, WV** – Project Engineer. Pedestrian/bicycle trail over 16.7 miles of rail bed, including construction of decks on four railroad trestles, and design of trailheads at strategic locations. Work included floodplain analysis of Meadow River.

**South Jackson County Wastewater Treatment Plant Improvements, Jackson County, WV** – Project Engineer. Responsible for floodplain analysis of Grass Lick Creek to evaluate proposed project impacts.

**Clay County Schools Flood Repair Project, Clay, WV** – Project Engineer. Responsible for floodplain analysis of Elk River to evaluate impacts of proposed improvements to athletic fields.

**Kentucky Transportation Cabinet – Multiple Highway Projects – 1991-Present** – Project Engineer. Projects included H&H analyses for floodplain management, permit assistance, and other major elements of the NEPA process.

**U.S. Customs and Border Protection North Laredo Border Wall, Laredo, TX** – Project Engineer. Design/build of approximately 14 miles of border wall including roads, bridges, drainage, foundations, electrical, electronic security and telecommunications. Responsible for floodplain analysis.

**Stormwater Master Plan Update, Florence, KY** – Project Engineer. Mapping for update of city's Stormwater Drainage Master Plans including significant changes in regulations, outline of series of suggested policy statements, provision of specific guidance on stream repair, and alternatives for some possible locations for new regional stormwater basins. Resulting GIS files indicate stream designations of perennial, intermittent, Waters of Florence, and other waters; jurisdictional authorities (whether Corps of Engineers, Division of Water, or City of Florence); basin and subbasin boundaries.

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**Keeneland Stormwater Basin No. 2, Lexington, KY** – Project Manager. Engineering design and permitting services for a second stormwater basin located downstream of an existing detention basin. Project involved hydrologic and hydraulic calculations, as well as a site and grading plan. Structure includes an earthen embankment with a concrete outlet structure. The basin is designed to store at a minimum of 0.5 inches for a water quality volume of 1.3 acre-feet.

**Lexington Stormwater Supplemental Environmental Project, Lexington, KY** – Project Engineer. Development and implementation of a long-term strategy to manage stormwater flooding and to help the Lexington-Fayette County Urban County Government understand the critical nature of flooding events and stormwater problems in its service areas. Tasks included: 1) development of severity scoring system for implementing Supplemental Environment Project mandated in Consent Decree; 2) development of stormwater master work plan for field-level engineering using web-based tools; and 3) development of numerous preliminary engineering reports of nuisance flooding problems.

**Versailles Wilson Avenue Flood Mitigation, Versailles, KY** – Project Manager. Developed alternatives to resolve flooding of apartment complex located in low-lying area, which occurred when storm sewer backed up from nearby detention basin. Work included evaluation of adding storage to detention basin or installation of flood valve (selected alternative). Additional storage options included several regrading alternatives and computation of stage storage curves for each.

**Warsaw Stormwater Master Plan, Warsaw, KY** – Project Manager. Preparation of comprehensive Stormwater Master Plan which addressed nuisance flooding, problems with dry wells, and construction plans for relief system. Master Plan, which included associated mapping, helped city prepare for growth.

## Tim Robinson, PE | GRW Project Engineer



### YEARS OF EXPERIENCE:

With GRW: 11

Total: 24

### EDUCATION

B.S., Engineering Science, 1993,  
University of Louisville

M.Eng., 1996, University of  
Louisville

### REGISTRATION

Professional Engineer: KY, FL

### PROFESSIONAL AFFILIATIONS AND TRAINING

American Society of Highway  
Engineers (ASHE) Member and  
Louisville Section President  
(2016-2018)

Tim has experience with roadway design, including horizontal and vertical alignment determinations, typical section alternative design, and modeling of roadway alternatives, as well as production of plan sets for preliminary line and grade review, joint inspection and drainage review, and final design. As part of his transportation experience, he has completed numerous storm sewer analyses, culvert analyses, spread analyses, grate inlet analyses, channel designs, stream impact studies, and Phase I Environmental Site Assessments for multiple projects. Tim's project management skills include project scheduling, budget, and personnel oversight. He stays up-to-date with the latest highway design software, and has particular strengths in the hydrology and hydraulics modeling arena – in fact, he has used those strengths to develop custom spreadsheets we use to streamline our design efforts for clients. Tim is proficient with InRoads, InRoads S&S, HECRAS, HECHMS, HY, PondPack, StormCAD, SedCAD, and GeoPakWord. He also served as a member of the review committee for the release of the latest KYTC drainage manual.

### RELEVANT PROJECT EXPERIENCE

**Letcher/Leslie County, KY** – Project Engineer. Performed hydrologic and hydraulic analysis as part of approximate studies for updating FEMA FIRM maps in Letcher and Leslie Counties in Kentucky. Analysis included utilizing HEC-HMS modeling for major streams in both counties, and using Kentucky DEM data to create cross section data for analysis with HEC-RAS. Flood extents were then modeled and provided for inclusion for the GIS data provided as part of the study.

**Kentucky Transportation Cabinet US 421 (KY 80 to KY 11), Clay County, KY** – Project Engineer. Design of critically needed improvements to improve safety along 4-mile-long section of heavily traveled, three- and two-lane roadway. Final design provided five-lane urban section and a three-lane rural section of highway, greatly increasing safety and level of service. Structures include 92'-long, single 12'x5' culvert built in two phases. Responsible for urban drainage design of storm sewer systems, and HEC-RAS modeling of existing and proposed conditions for structures over Horse Creek and Lockards Creek.

**Kentucky Transportation Cabinet Hurstbourne Parkway, Bardstown to Fern Valley Roads, Louisville, KY** – Project Engineer. Preliminary and final design for extension of Hurstbourne Parkway from Bardstown Road to Fern Valley Road. Designed as urban arterial with design speed of 80 km/h, a 4-lane initial/6-lane ultimate typical section was developed with a 3-meter border, 0.7 meter shared bicycle path, and a 12-meter raised median. Work also included realignment and/or improvements to five approaches totaling 2.24 kilometers.

**Kentucky Transportation Cabinet KY 146 - Henry County, Henry County, KY** – Project Manager. Design for 7.7-mile corridor to improve safety of heavily traveled two-lane roadway. Project included accident analysis, and presentation of data and multiple alternatives to stakeholders. Selected typical includes 12-foot travel lanes and 8-foot paved shoulders. Included rural and urban drainage design, hydraulic analysis and structural design of three bridges (3-span PCIB Type 2 beam bridge, single span PCIB Type 4 beam bridge and 3-span PCIB Type 2 beam bridge) and two large box



culverts, property establishment and access design for more than 200 parcels, and detailed construction phasing and traffic control plans.

**Kentucky Transportation Cabinet KY 210, Section 1, Taylor County, KY** – Project Engineer. Design and construction planning for 4.1-mile, two-lane roadway relocation, including horizontal and vertical alignment of rural arterial highway, managing project from start to finish. Entrance design to accommodate rugged terrain and 11 approach roads. Coordinated deed research for 63 parcels in three counties: Taylor, Larue and Green. Submitted right of way plans eight months ahead of schedule to allow federal funding in the scheduled year. Established existing utilities, and kept property owners apprised of project impacts, such as entrance locations.

**Kentucky Transportation Cabinet KY 864 (Beulah Church Road)**

**Widening, Louisville, KY** – Project Manager. Preliminary line and grade, and final design of widening project for 1.5-mile corridor to increase safety and improve level of service. Coordination with utility companies (gas, water, electric, fiber optic, and sewer) in area was major emphasis for project. Communication with property owners was successfully navigated to alleviate concerns. Multiple alternatives were provided, all of which included 11-foot travel lanes, a 13-foot two-way left turn lane and 5-foot sidewalks on both sides of road.

**Kentucky Transportation Cabinet KY 89, Estill County, KY** – Project Engineer. Design, planning and consulting for Phase I and Phase II design of highway project extending 2.6 miles from within the northern limits of the City of Irvine, Ky., to the Estill County High and Middle Schools. Overcame numerous geometric deficiencies that had led to inadequate sight distances and clear zones, as well as accommodated traffic forecasts that supported the need for improvement. Environmental overview prepared by Third Rock Consultants. Design work included numerous consideration including proposed sidewalks for areas likely to receive pedestrian traffic and incorporation of two bridges. Used full-width shoulders on the two-lane section and a 55 mph design speed to help cope with a potentially dangerous curve and mitigated potential acid mine drainage.

**Kentucky Transportation Cabinet U.S. 62, Nelson County, KY** – Project Engineer. Design and consulting during Phase I and Phase II of a 1.2 mile realignment of US 62, a rural collector just west of Bardstown, Ky. Overcame numerous geometric deficiencies through relocation of a two-lane highway with full width shoulders. Developed curb and gutter sections for the urban portion of the project. Authored the Environmental Assessment with input from qualified subconsultants. Minimized impacts on a local church, and several homes and businesses. Developed 5-span, PCI beam bridge over Withrow Creek, addressing public concern about the aesthetic appearance of the bridge because it's located close to historic Bardstown, a scenic tourist destination. Addressed numerous traffic concerns throughout the project.

**U.S. Customs and Border Protection North Laredo Border Wall, Laredo, TX** – Transportation Engineer. Design/build of approximately 14 miles of border wall including roads, bridges, drainage, foundations, electrical, electronic security and telecommunications.

## Julie Shearer, EIT | GRW Project Engineer



### YEARS OF EXPERIENCE:

With GRW: 4

Total: 7

### EDUCATION

B.S., Civil and Environmental Engineering, 2014, University of Pittsburgh

### REGISTRATION

Engineer-in-Training

### PROFESSIONAL AFFILIATIONS AND TRAINING

KYTC Superpave Plant Technologist & Superpave Mix Design Technologist

Julie brings experience with projects for commercial, developer, educational, and governmental clients on a variety of projects. She has experience with site/civil engineering design and has prepared construction and environmental compliance documents, and land development applications.

### RELEVANT PROJECT EXPERIENCE

**U.S. Customs and Border Protection North Laredo Border Wall, Laredo, TX** – Project Engineer. Design/build of approximately 14 miles of border wall including roads, bridges, drainage, foundations, electrical, electronic security and telecommunications. Assisted with floodplain mapping.

**Christ Church New Property Conditional Use Permit, Nicholasville, KY** – Project Engineer. Assistance with planning, site preparation, and obtaining conditional use permit for purpose of constructing church facilities on approximately 14 acres of land in Jessamine County, KY. GRW prepared a final plat, as well as conceptual development plan, for submittal to Jessamine County.

**East Kentucky Power Cooperative Spurlock Power Plant Coal Pile Runoff Pond Supplemental Storage and Pumping, Maysville, KY** – Project Engineer. Evaluation of existing conditions (storage capacity, watershed area, drainage network, force main capacities, etc.) and design and construction phase services to accommodate 10-year, 24-hour storm without overflow and to pass 100-year, 24-hour storm through combined pumping, storage and emergency spillway overflow. Improvements included embankment and bottom improvements of coal pile runoff pond; expansion of principal spillway structure to 7,000 gpm pump station; new emergency overflow structure; new road crossing culvert/bridge for 100-year storm discharge event; 3,000 LF of 24" HDPE force main for discharge to large settling pond; and all SCADA improvements.

**McDonalds Site Development** – Project Engineer. Site investigation reports, development plans and construction documents for more than 20 restaurants in Kentucky, Indiana, and Ohio. GRW designed biofiltration or underground detention for several of these sites, including a 5,000 cubic foot underground detention basin for the Harrodsburg Road McDonald's in Lexington.

**Rough River Dam State Resort Park Marina Relocation, Falls Of Rough, KY** – Project Engineer. Relocation of Rough River Dam State Resort Park marina (199 slips, head dock building with restrooms, food service, electric service, water and sewer). Construction at new marina includes: site infrastructure, re-establishing ramp access for new shore line; new anchoring system; site lighting for parking lot and access road adjacent to marina, and repairs to the marina structure.

**The Fountains at Palomar Mixed-Use Site Development, Lexington, KY** – Project Engineer. Planning and design services for 118,466 SF, mixed-use project. Work included preliminary development plan; cost estimates; zoning amendment submittal; mass grading plan; construction documents for shared access roads, sidewalks, retaining walls needed to create marketable sites, and utilities; and permitting assistance.

## Roger Kennedy, PLA, ASLA | GRW Community Outreach Specialist



### YEARS OF EXPERIENCE:

With GRW/Chapman: 31  
Total: 32

### EDUCATION

B.S., Landscape Architecture,  
1990, West Virginia University

### REGISTRATION

Professional Landscape  
Architect: [REDACTED] KY

### PROFESSIONAL AFFILIATIONS AND TRAINING

Trustee, WV Chapter, American  
Society of Landscape Architects  
Past President, St. Albans Rotary  
Member, Sigma Lambda Alpha  
Honor Society of Landscape  
Architects

WV Division of Highways  
Engineering Excellence Award,  
WV Route 10 (2013, 2011, 2000);  
Corridor H (2013)

Roger has a very diverse professional background, having been involved in parks and recreation projects, highway design, stormwater management, and trail and streetscape design. Other experience includes the use of various civil design software packages for use in site development and road design, digital terrain modeling, hydraulic analysis and related computer aided design tools, as well as the development and management of the computing resources of the company.

### RELEVANT PROJECT EXPERIENCE

**Clay County High School; Clay, WV** - Project Landscape Architect for the design of new football and softball fields including complete turf restoration, new drainage, irrigation, and lighting.

**Chief Logan State Park Cabin Access Road; Logan, WV** - Project Landscape Architect for a new 1700-foot access road serving three new cabins for the West Virginia Division of Natural Resources. The project included utility design, stormwater management, and extensive erosion and sediment control.

**Blennerhassett Boat Dock; Parkersburg, WV** - Project Landscape Architect for the development of a boat dock facility for the Island Belle Sternwheeler at the Blennerhassett Historic State Park. The project included not only the design of the boat dock, but also U.S. Army Corps of Engineers permitting, and coordination of archaeological and biological studies and permits.

**Meadow River Trail; Greenbrier and Fayette Counties, WV** - Project Landscape Architect for a multi-use rail trail being developed by the Greenbrier and Fayette County Commissions in West Virginia as a Recreation Trail Project administered by the West Virginia Division of Highways. The project includes the rehabilitation of 17 miles of compacted aggregate trail and six railroad trestles, which will be rebuilt to accommodate pedestrian, bicycle and equestrian traffic. After the initial design was complete, seasonal floods damaged the existing trail. Working with FEMA and the County Commissions, the project scope was expanded to include flood damage repair.

**Robert C. Byrd Federal Courts Complex; Beckley, WV** - Working with Project Architect Robert A. M. Stern of New York and Einhorn Yaffee and Prescott of Washington, D.C., Roger served as Project Landscape Architect and provided design and construction services for all site design including site grading and drainage, stormwater management, and utility relocation. During the first phase of construction, Roger served as the on-site construction representative to oversee all utility relocations and foundation excavations.

## Rob Hench, GISP | GRW GIS Manager



### YEARS OF EXPERIENCE:

With GRW: 36

Total: 36

### EDUCATION

B.S., Computer Science, 1985,  
Georgia Institute of Technology

### REGISTRATION

GISP

### PROFESSIONAL AFFILIATIONS AND TRAINING

Management Association for  
Private Photogrammetric  
Surveyors (MAPPS)

Kentucky Association of  
Mapping Professionals (KAMP)

Rob is the GIS Manager and Technical Advisor of our GIS Division. With over thirty-five years of experience, he has specialized expertise in all areas of GIS database design and development, ensuring quality control for GIS projects. Mr. Hench oversees GIS needs analysis, implementation, development, and data conversion. He has managed numerous complex GIS projects for utility companies, cities, counties, state, and federal clients. His skills include managing the components of a GIS, from collection to custom design and on-site support. A certified Geographic Information System Professional, he is extremely proficient with the leading GIS software.

### RELEVANT PROJECT EXPERIENCE

#### **FEMA Flood Insurance Study for Lexington Fayette County - 2005,**

**Lexington, KY** – Project Manager - GIS. Mapping for a detailed digital Floodplain Redelineation involving creation of new Digital Flood Insurance Rate Maps (DFIRMs), covering over 70 miles of stream centerlines, and profiles in compliance with standards from FEMA's new Map Modernization Program. New detailed DFIRMs define the floodway, 100-year flood zone and 500-year flood zone with much greater detail and precision than the original Flood Insurance Rate Maps.

#### **Lexington-Fayette Urban County GIS, Impervious Surface Mapping,**

**Lexington, KY** – Project Manager. Comprehensive impervious surface mapping project covering all of Fayette County, Kentucky. The data was digitized from the 2007 Lexington-Fayette Urban County Government digital orthophotography and was delivered in ESRI Personal GeoDatabase format. The impervious surface data was used by LFUCG to calculate the newly proposed storm-water tax for homes and businesses as a result of a settlement with the Environmental Protection Agency. The final database covered almost 300 square miles of land and contained almost 500,000 topologically structured GIS polygons.

#### **Lexington Stormwater Supplemental Environmental Project, Lexington,**

**KY** – GIS Manager. Development and implementation of a long-term strategy to manage stormwater flooding and to help the Lexington-Fayette County Urban County Government understand the critical nature of flooding events and stormwater problems in its service areas. Tasks included: 1) development of severity scoring system for implementing Supplemental Environment Project mandated in Consent Decree; 2) development of stormwater master work plan for field-level engineering using web-based tools; and 3) development of numerous preliminary engineering reports of nuisance flooding problems.

#### **Lexington-Fayette Urban County Government Pavement Inventory,**

**Lexington, KY** – Project Manager. Pavement inventory which included over 1,000 centerline miles of pavement condition assessment. Project began with development of topologically structure street centerline network with From/To node connectivity using ESRI ArcGIS software and compilation of variety of GIS background layers to support project including administrative boundaries, railroads, street centerlines, and land use data. GRW/ARA Team drove over 1,000 miles of road centerline collecting LiDAR data and photographs. Images were acquired at sufficient resolution to locate and identify pavement cracks as small as 2 mm. Final project data was processed

and delivered in ESRI ArcGIS format including street centerlines, condition assessments and georeferenced photographs. Pavement condition data was calculated using pavement management software and exported to Excel spreadsheet format for delivery to LFUCG.

**Knox County, TN, MS4 Stormwater Infrastructure Mapping, Knoxville, TN** – GIS Manager. Comprehensive stormwater GPS/GIS inventory project (surveys, photographs, and assessments) covering approximately 170 square miles of non-incorporated areas of County. Completed in support of MS4 permit. Involved the sub-meter horizontal and vertical field collection of more than 40,000 stormwater structures stormwater features ranging from catch basins, inlets, and manholes, to spillways and junction boxes. Open channels and ditches were digitized from 3D aerial LiDAR data to connect the surveyed stormwater structures and pipes. All stormwater data was processed and delivered in ArcGIS Geodatabase format.

**Indianapolis Public Works Stormwater NPDES Illicit Discharge Detection Inspection and Mapping, Indianapolis, IN** – GIS Manager. Scope of work included: dry weather inspection of identified outfalls from pipes and ditches along prioritized rivers and streams; documentation of outfall conditions; notification (including inspection report and outfall location in GIS format) to City within 24 hours of outfalls that are suspected to contain illicit discharges; web-based GIS project tracking website; final delivery of outfall locations, attributes, and hyperlinked photographs in ArcGIS GeoDatabase format; and report and analysis of collected data.

**Indianapolis Public Works Stormwater Impervious Area Mapping- Marion County, IN, Indianapolis, IN** – Project Manager. Services mapped and measured all residential impervious surfaces in Marion County. Project area covers approximately 400 square miles and 270,000 residential parcels; resulting data used to establish stormwater fees for all residential properties in the county.

**Avon Lake Municipal Utilities GIS and Utility Surveying, Avon Lake, OH** – Project Manager. Extensive GIS and survey services for municipal water, sanitary and storm sewer utilities. Tasks involved as-built scans, and ArcGIS GeoDatabase development, and field location of features, including fire hydrants, water valves, sanitary and storm sewer manholes, catch basins, curb inlets, headwalls, and culverts. Accomplished the design and implementation of a custom ArcIMS web page, and customized on-site GIS training.

**Avon Stormwater GIS and GPS, Avon, IN** – Project Manager. GIS development and GPS storm sewer system inventory project, including GPS field data collection to capture the pipes, ditches, inlets, and other components. The data collection included conditional assessments to direct maintenance work for system repairs and storm sewer cleaning. The final product included a storm sewer system map showing structure locations, pipe sizes, conditional assessments, and flow direction in Arc View GIS format.



## Jason Brown, PS | GRW Survey Manager



### YEARS OF EXPERIENCE:

With GRW/Chapman: 10  
Total: 25

### EDUCATION

A.S., Land Surveying, 2002  
Glennville State College, WV

### REGISTRATION

Professional Surveyor: WV, VA,  
PA, KY

### PROFESSIONAL AFFILIATIONS AND TRAINING

West Virginia Society of  
Professional Surveyors

### Water/Wastewater/Stormwater Systems

Associated surveying for the design of water systems, sanitary sewer systems, and stormwater systems, including treatment facilities for both private and public systems throughout the state. Also, field experience in the inventory and collection of attribute data using GPS equipment for uploading to GIS databases.

### Highways

Established control, site surveying, topographic surveying, courthouse research, drawing production, Right-of-Way Questionnaires, bore hole stake out, and all surveying associated with the initial and final design of WV highways.

### Site Development

Experienced in all types of surveying associated with site development, to include control, topographic boundaries, research, and drawing production. Projects include military complexes, public housing, commercial development, industrial and institutional complexes, churches, resorts and public facilities throughout the state.

### Schools

Associated surveying for new schools, additions, athletic fields, and sidewalks projects.

### Parks and Recreation

Associated surveying for projects including swimming pools, bathhouses, cabins and support facilities for the West Virginia Division of Natural Resources and similar facilities for county and municipal park systems.

### Boundary Surveys

Experienced in full boundary surveys and ALTA surveys for military complexes, private residences, prison facilities, commercial sites, and all boundaries associated with various engineering projects throughout the state.

**SECTION 4.0** | **Program Understanding  
and Approach**

## 4.0 Program Understanding and Approach

The stated goal for the project is to provide riverine flood hazard analyses, mapping, and other services to assist with the FEMA Cooperating Technical Partner program and the WV Advisory Flood Height Initiative.

The GRW Approach consists of three major elements:

### Program Management



- Risk Identification and communication
- Understanding and leveraging existing resources
- Planning, scheduling, allocation of resources
- Community Outreach
- Planning is first and foremost, to organize the efforts of the other project elements. We would kickoff the project with a collaboration meeting to begin outlining priorities and schedules, and we would plan bi-weekly project progress meetings to provide updates on work in progress.

### Mapping and Measurements

- Field Survey
- Field Reconnaissance
- Base Map development

GRW has extensive experience with these tasks and would deploy survey crews when and where needed.

**GRW is familiar with the FEMA technical guidelines as well as preparing data for use in GIS databases. Stormwater and impervious surface mapping projects rely heavily on data dictionaries so that information collected in the field is correctly coded for used in modeling and mapping. Furthermore, data dictionaries can define the precision of values collected for meaningful data.**



GRW uses the latest technology in our surveys including precision survey-grade Trimble equipment and Leica Terrestrial Laser Scanners as required to support our project needs. When available, we will use existing aerial photography, aerial LiDAR or base mapping data as a background for our survey, modelling and GIS work. If existing data is not available in some areas or does not meet the project requirements, we have in-house capabilities to produce new aerial photography, digital orthophotography, aerial LiDAR, Digital Elevation Models, photogrammetric mapping and GIS databases.

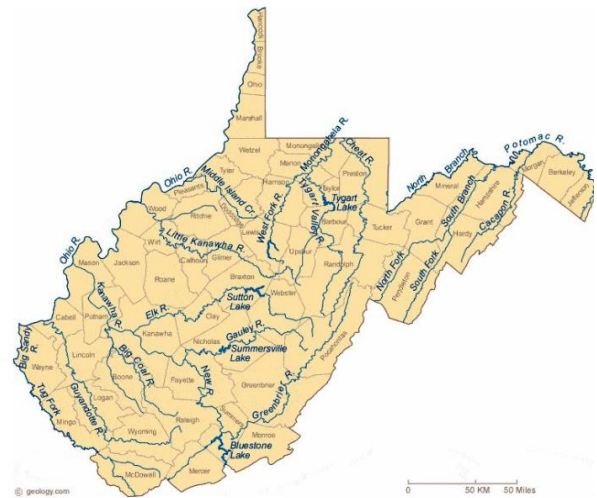
GRW will produce and deliver the project survey, mapping and modeling data in GIS format using the ESRI suite of ArcGIS products. We are an ESRI Business Partner and have been using ESRI software for over 30 years. We currently have over 30 licenses of the various ESRI products including ArcGIS Pro, ArcMap, ArcGIS Server, ArcGIS Field Maps, ArcGIS On-line, 3D Analyst, Spatial Analyst and Network Analyst. The final data will be delivered in ArcGIS GeoDatabase format compatible with the appropriate FEMA data standards.

### Floodplain Modeling and GIS Data Link

- Office-based, using the resources collected in mapping and measurement
- Hydrological models to determine flows (HECHMS)
- Hydraulic modeling to determine water surface elevation (HECRAS)
- Mapping to depict the extent of flooding

GRW has the applicable models and technical personnel, including senior engineers, to conduct the modeling efforts, efficiently and accurately.

GRW will collaborate with the Division of Emergency Management, the West Virginia GIS Technical Center (creators of the WV Flood Tool) to identify roles and responsibilities and leverage existing information.



We understand that many rivers and stream in WV have up to date FEMA flood maps, but also that many have only Advisory Flood Height information, and some have no regulatory or non-regulatory information regarding flooding. We can assist WV DEM with bringing priority areas up-to-date.

The GRW team provides the unique combination of mapping capabilities and hydrology/hydraulic modeling expertise. In addition, we have significant program management expertise as shown in our Project Experience section. We have managed priority ranking programs for LFUCG, and in West Virginia, and we have long standing projects with the Army National Guard, the WV State Parks, and many communities. We look forward to assisting WV Department of Emergency Management with the Cooperating Technical Partners program, and reducing flood risk throughout West Virginia.

## **SECTION 5.0** | **West Virginia EOI Forms**





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

State of West Virginia  
 Centralized Expression of Interest  
 Architect/Engr

<b>Proc Folder:</b> 825717			<b>Reason for Modification:</b>
<b>Doc Description:</b> Architectural/Engineering Services			
<b>Proc Type:</b> Central Contract - Fixed Amt			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2021-01-04	2021-01-21 13:30	CEOI 0606 HSE2100000001	1

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

**Vendor Customer Code:** 000000218570  
**Vendor Name :** GRW Engineers, Inc.  
**Address :** 801 Corporate Drive  
**Street :**  
**City :** Lexington  
**State :** KY **Country :** USA **Zip :** 40503  
**Principal Contact :** Harvey Helm, PE, PLS, LEED AP  
**Vendor Contact Phone:** (859) 223-3999 **Extension:** 241

**FOR INFORMATION CONTACT THE BUYER**  
 Tara Lyle  
 (304) 558-2544  
 tara.l.lyle@wv.gov

**Vendor Signature X**  **FEIN#** 610665036 **DATE** 01/15/2021

All offers subject to all terms and conditions contained in this solicitation

**ADDITIONAL TERMS AND CONDITIONS  
(Architectural and Engineering Contracts Only)**

**1. PLAN AND DRAWING DISTRIBUTION:** All plans and drawings must be completed and available for distribution at least five business days prior to a scheduled pre-bid meeting for the construction or other work related to the plans and drawings.

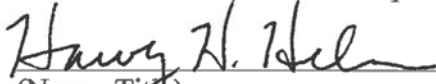
**2. PROJECT ADDENDA REQUIREMENTS:** The Architect/Engineer and/or Agency shall be required to abide by the following schedule in issuing construction project addenda. The Architect/Engineer shall prepare any addendum materials for which it is responsible, and a list of all vendors that have obtained drawings and specifications for the project. The Architect/Engineer shall then send a copy of the addendum materials and the list of vendors to the State Agency for which the contract is issued to allow the Agency to make any necessary modifications. The addendum and list shall then be forwarded to the Purchasing Division buyer by the Agency. The Purchasing Division buyer shall send the addendum to all interested vendors and, if necessary, extend the bid opening date. Any addendum should be received by the Purchasing Division at least fourteen (14) days prior to the bid opening date.

**3. PRE-BID MEETING RESPONSIBILITIES:** The Architect/Engineer shall be available to attend any pre-bid meeting for the construction or other work resulting from the plans, drawings, or specifications prepared by the Architect/Engineer.

**4. AIA DOCUMENTS:** All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the attached AIA documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein. The terms and conditions of this document shall prevail over anything contained in the AIA Documents or the Supplementary Conditions.

**5. GREEN BUILDINGS MINIMUM ENERGY STANDARDS:** In accordance with West Virginia Code § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: Provided, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.

**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

 Vice President  
\_\_\_\_\_  
(Name, Title)  
Harvey Helm, PE, PLS, LEED AP, Vice President  
\_\_\_\_\_  
(Printed Name and Title)  
GRW, 01 Corporate Dr., Lexington, KY 40503  
\_\_\_\_\_  
(Address)  
(859) 223-3999 / (859) 223-8917  
\_\_\_\_\_  
(Phone Number) / (Fax Number)  
hhelm@grwinc.com  
\_\_\_\_\_  
(email address)

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

GRW Engineers, Inc.  
\_\_\_\_\_  
(Company)  
 Vice President  
\_\_\_\_\_  
(Authorized Signature) (Representative Name, Title)  
Harvey Helm, PE, PLS, LEED AP, Vice President  
\_\_\_\_\_  
(Printed Name and Title of Authorized Representative)  
\_\_\_\_\_  
(Date)  
(859) 223-3999 / (859) 223-8917  
\_\_\_\_\_  
(Phone Number) (Fax Number)

STATE OF WEST VIRGINIA  
Purchasing Division

# PURCHASING AFFIDAVIT

**CONSTRUCTION CONTRACTS:** Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

**ALL CONTRACTS:** Under W. Va. Code §5A-3-10a, 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: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

**EXCEPTION:** The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. 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.

**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.

**"Employer default"** means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

**"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 exceeds five percent of the total contract amount.

**AFFIRMATION:** By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

**WITNESS THE FOLLOWING SIGNATURE:**

Vendor's Name: GRW Engineers, Inc

Authorized Signature: *Harry H. Helms* Date: 01/15/2021

State of Kentucky

County of Fayette, to-wit:

Taken, subscribed, and sworn to before me this 15 day of January, 2021.

My Commission Expires on August 1, 2022.



NOTARY PUBLIC *Louise Godshall*



West Virginia Ethics Commission  
**Disclosure of Interested Parties to Contracts**

(Required by W. Va. Code § 6D-1-2)

Name of Contracting Business Entity: GRW Engineers, Inc. Address: 801 Corporate Drive  
Lexington, KY 40503

Name of Authorized Agent: Ron Gilkerson, PE Address: 801 Corporate Dr., Lexington, KY 40503

Contract Number: CEOI 0606 HSE2100000001 Contract Description: Architectural/Engineering Services

Governmental agency awarding contract: WV Division of Purchasing / Division of Emergency Management

Check here if this is a Supplemental Disclosure

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below (attach additional pages if necessary):

**1. Subcontractors or other entities performing work or service under the Contract**

Check here if none, otherwise list entity/individual names below.

**2. Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**

Check here if none, otherwise list entity/individual names below.

**3. Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**

Check here if none, otherwise list entity/individual names below.

Harvey Helm, PE, PLS, LEED AP

Signature: Harvey H. Helm

Date Signed: 01/15/2021

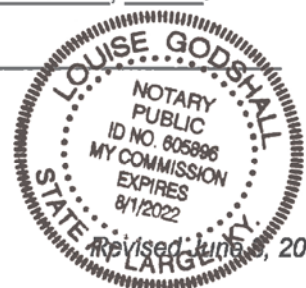
**Notary Verification**

State of Kentucky, County of Fayette:

I, Harvey Helm, PE, PLS, LEED AP, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 15 day of January, 2021.

Louise Godshall  
Notary Public's Signature



**To be completed by State Agency:**

Date Received by State Agency: \_\_\_\_\_

Date submitted to Ethics Commission: \_\_\_\_\_

Governmental agency submitting Disclosure: \_\_\_\_\_