

**AGENDA**  
**CITY OF CENTRALIA, MISSOURI**  
**Board of Aldermen**  
**Special Meeting**

Tuesday, September 2, 2014

7:00 P.M.

City Hall Council Chambers

- I. ROLL CALL
- II. PLEDGE OF ALLEGIANCE
- III. APPOINTMENT OF NEW POLICE OFFICER AND EFFECTIVE DATE OF APPOINTMENT
- IV. SETTING SALARY FOR NEW OFFICER  
BILL NO. \_\_\_\_\_ ORDINANCE NO. \_\_\_\_\_
- V. AUTHORIZING BOONE COUNTY NATIONAL BANK AGREEMENT FOR MERCHANT BANK  
CUSTOMER DEBIT CARD AND CREDIT CARD PAYMENT SERVICES—ORDINANCE  
BILL NO. \_\_\_\_\_ ORDINANCE NO. \_\_\_\_\_
- VI. AS MAY ARISE
- VII. ADJOURN

**PUBLIC WORKS AND PUBLIC UTILITIES COMMITTEE**

Tuesday, September 2, 2014

7:00 P.M.

City Hall Council Chambers

- I. ROLL CALL
- II. COMMENTS FROM CITIZENS
- III. ELECTRIC DEPARTMENT
  - A. Activity Report
  - B. BHMG Engineers quote on planning for electric bore
  - D. Other
- IV. WATER AND SEWER DEPARTMENT
  - A. Activity Report
  - B. Water
  - C. Sewer
  - D. Other
- V. PUBLIC WORKS
  - A. Activity Report
  - B. Streets
    - 1. Sidewalk repair/construction progress
    - 2. Sidewalk cooperation policy
  - C. Sanitation
    - 1. Extra pickups for commercial customers
    - 2. Recycling trailer update
    - 3. Recycling program review
  - D. Stormsewer
  - E. Other
- VI. OTHER
- VII. AS MAY ARISE
- VIII. ADJOURN

BILL NO. \_\_\_\_\_

ORDINANCE NO. \_\_\_\_\_

A BILL TO CREATE AN ORDINANCE ENTITLED:

“AN ORDINANCE TO FIX THE COMPENSATION OF A CERTAIN EMPLOYEE OF THE CITY OF CENTRALIA, MISSOURI AND TO ASSIGN A CERTAIN JOB POSITION WITH A CERTAIN PAY GRADE IN THE CITY PAY SCHEDULE.”

BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE CITY OF CENTRALIA, MISSOURI, as follows:

SECTION 1. The compensation of a certain appointive officer of the City of Centralia, Missouri is hereby fixed and established by ordinance, as follows:  
Jerry N. Stoebe, is hired as Patrol Officer, and his salary shall be set at Grade G, Step 1 of the adopted pay schedule.

SECTION 2. Compensation for Officer Stoebe shall be effective September 2, 2014 at 7:30 p.m.

SECTION 3. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

PASSED this 2nd day of September, 2014.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

This ordinance approved by the Mayor this 2nd day of September, 2014.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

BILL NO. \_\_\_\_\_

ORDINANCE NO. \_\_\_\_\_

A BILL TO CREATE AN ORDINANCE ENTITLED:

“AN ORDINANCE AUTHORIZING AND DIRECTING THE MAYOR AND CITY CLERK OF THE CITY OF CENTRALIA, MISSOURI TO EXECUTE A CERTIFICATION AND RESOLUTIONS OF PUBLIC ENTITY INSTRUMENT TO OBTAIN BANK CARD PRODUCTS AND SERVICES FROM THE BANKCARD CENTER OF BOONE COUNTY NATIONAL BANK.”

BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE CITY OF CENTRALIA, MISSOURI, as follows:

SECTION 1. The Mayor and City Clerk of the City of Centralia, Missouri are hereby authorized and directed to execute on behalf of the City of Centralia, Missouri a Certification And Resolutions Of Public Entity instrument from Boone County National Bank for the City of Centralia, Missouri to obtain bank card products and services from bank card service provider BankCard Center of Boone County National Bank. Adoption of this ordinance shall hereby constitute adoption of the Resolutions set forth in said instrument. City Administrator Matt Harline, City Clerk Heather Lockett and Park Director Erle Bennett are hereby designated and authorized as the Authorized Representatives of the City of Centralia, Missouri concerning said instrument, with the authority for any of them individually to execute any and all BankCard Center documents necessary and desirable to obtain such bank card products and services.

SECTION 2. This ordinance shall take effect and be in full force and effect from and after the date of its passage and approval.

PASSED this 2<sup>nd</sup> day of September, 2014.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

This ordinance approved by the Mayor this 2<sup>nd</sup> day of September, 2014.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

**ELECTRIC DEPT.**  
**AUGUST 2014 ACTIVITY REPORT**

1. Hauled brush/yard waste – 5
2. Mowed @ shop & WSS - 3
3. Repaired street lights – Rollins/Wigham, Switzler/Allen, City Square, Allen/RR tracks, 525 Orchard, Lot 5 Tidball Trailer Court
4. Re-reads – 14
5. Disconnect Day – 27
6. Total monthly readings – 61
7. Total monthly locates – 38
8. Trimmed trees – 607 Pool
9. Removed tree - 147 Burnett
10. Central COLT 2014 – pulled short span of UG primary @ Lakeview riser pole & terminated, worked on trench, tilled dirt, planted grass on main trench
11. Pulled wire and connected new service @ 324 N. Collier
12. Replaced ballasts and bulbs at Police Department
13. Burnett/Allen St – Set pole 2 529 S Allen, installed anchor and guy wire, trenched and installed 2” conduit along front of 529, pierced under tree, trenched and installed conduit across front of 535 S Allen, installed secondary pedestal, installed transformer, 529 S Allen – trenched and installed conduit from pad mount transformer to existing meter base on house, strung #2 primary from feeder circuit pole three spans to Allen St. Pulled UG primary from riser pole to transformer @ 535 S. Allen, pulled secondary from transformer to pedestal, terminated primary, installed CO & LA, connected secondary wires @ transformer and pedestal, Energized new pad mount transformer, Set anchor for dead end pole along Burnett St, installed down guy, 535 S Allen – pulled service wire from pedestal to meter base, 529 S Allen – pulled wire and connected underground service, 147 Burnett – set new lift pole, 535 S Allen – connected new house service, disconnected temporary service, 147 Burnett – strung service drop to new poles on Burnett St, connected new transformer, energized service and secondary mains along Burnett, connected 145 Burnett to secondary mains, disconnected transformer behind 145 Burnett
14. 702 Early – pulled wire and connected new service to detached garage
15. 601 Green – connected wire @ pole to energize new service on house
16. 145 W. Burnett, tree limb on transformer, repaired stinger wire and installed fused cutout, restored power @ 2 am
17. Pulled pumps @ Fountain Rd Lift Station
18. Fountain Road lift station – installed ground grid, four ¾” x 10’ ground rods w/ 40’ of 4/0 copper
19. 814 Chris Ct – connected new house service, disconnected temporary service
20. Assisted Street Department with sidewalk along South Columbia St
21. Water Plant – worked on lime pump connections
22. Assisted Park Department with installation of Bicentennial West scoreboard
23. Sprayed weeds @ WSS & BSS
24. Corrected marking of phases along Lakeview in switches and @ riser poles
25. 611 Pool – pulled wire and connected new house service, disconnected temp service
26. 991 W Lakeview – installed anchor and straightened transformer pole at Well #6/Water Tower site
27. 401 W Kennan – set new lift pole to feed 401, re-routed service crossing 403’s backyard to allow for detached garage to be built

**MEMORANDUM OF AGREEMENT**

**PROJECT DATA**

Date August 28, 2014

Project Name City of Centralia, MO – Design of Substation Exits and Railroad Crossings

Owner's Project Number \_\_\_\_\_

BHMG Project Number \_\_\_\_\_

Description of Service

**Professional services provided to design substation exits and railroad crossings. The specific scope of work is listed in Exhibit A to this agreement.**

**AGREEMENT DATA**

Name Mark Mustain  
City of Centralia  
Address 114 South Rollins Street  
City Centralia, MO 62540

Phone 573-682-5658

Status:  Estimate  
 Quotation  
 Revision to Original

Fee Basis:  Cost Multiplier  
 Lump Sum \$13,000  
 Other \_\_\_\_\_

Dates: Start upon execution of agreement

Complete December 31, 2014

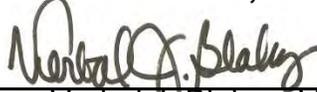
If the above status is indicated as an estimate, our fee will be based upon the time expended and unusual problems or difficulties may necessitate a higher fee. The terms and conditions under which we are providing these services shall apply. Such terms and conditions are set out on the reverse side of this page and incorporated herein by reference.

**BILLING DATA**

Monthly 30 days net

The above is intended as a summary of our agreement for the performance of the work described. Please examine it carefully and, if accurate, indicate your approval and acceptance in the space provided below.

**BHMG ENGINEERS, INC.**

By   
Verbal J. Blakey, Vice President

**ACCEPTED**

The undersigned hereby states that they represent the owner(s) of the above described project and that the terms and conditions stated above are understood by them and herewith agreed to and accepted. You are hereby authorized and directed to proceed with the work outlined above.

Date \_\_\_\_\_ Signature \_\_\_\_\_

\_\_\_\_\_  
(Print Name & Title)

Date \_\_\_\_\_ Attest \_\_\_\_\_

\_\_\_\_\_  
(Print Name & Title)

**TERMS AND CONDITIONS**  
**Barnes, Henry, Meisenheimer and Gende, Inc.**

To assure an understanding of matters related to our mutual responsibilities, these terms and conditions for services are made a part of this agreement for our services:

**AMENDMENTS**

This agreement may be amended in writing providing both the Owner and Company agree to such modifications.

**COMPENSATION FOR SERVICES**

The basis for compensation will be as identified in the agreement.

When "Lump Sum" or "fixed fee" payment is utilized, it shall include all labor and expenses (for the scope of work as defined in the agreement) incurred by the Company and shall not exceed the fixed payment amount without prior authorization of the Owner.

When a "Payroll Costs" payment is utilized it shall be computed by a multiplier factor times payroll cost plus reimbursable expenses.

The "Payroll Costs" means the salaries and wages paid to all personnel engaged directly on the work plus the cost of customary and statutory benefits including social security contributions, unemployment, health, sick leave, vacation, workmans compensation, incentive and holiday pay applicable thereto.

"Reimbursable Expenses" means the actual expenses incurred directly or indirectly in connection with the work including but not limited to the following: Transportation and subsistence, toll telephone calls, telegrams, reproduction or printing, and computer time. The cost for outside consultants will be increased by five percent to facilitate administrative overheads.

The "Multiplier" is a factor for general direct overhead, indirect costs, profit and other costs. The Multiplier factor rate shall be identified in the agreement.

When an "Hourly" charge is utilized it shall mean the standard flat hourly employee rate as published at least annually by the Company.

**TIME OF PAYMENT**

The Company may submit monthly statements for services and expenses based upon the proportion of the actual work completed at the time of billing. Unless provided for otherwise, payments for engineering services will be due and payable thirty (30) calendar days from the issuance of the Company's statement.

**LATE PAYMENT**

If the Owner fails to make any payment due the Company for services and expenses within the time period specified, a service charge of 1-1/2% per month will be added to the Owners account. This is an annual rate of 18%.

**LIMITATION OF LIABILITY**

The Owner agrees to limit the Company's liability to the Owner and to all construction contractors, subcontractors and others where applicable, on this work, for damages to them due to the Company's negligent acts, errors or omissions, such that the total aggregate liability of the Company to all those named shall not exceed \$50,000 or the Company's total fee for services rendered on this work, whichever is greater.

**TERMINATION**

This agreement may be terminated by either party upon written notice. Any termination shall only be for good cause such as for legal, unavailability of adequate financing or major changes in the work. In the event of any termination the Company will be paid for all services and expenses rendered to the date of termination.

**REUSE OF DOCUMENTS**

All documents including drawings and specifications furnished by Company pursuant to this Agreement are instruments of his services in respect of the work. They are not intended or represented to be suitable for reuse by Owner or others on extensions of this work, or on any other work. Any reuse without specific written verification or adaptation by Company will be at Owner's sole risk, and without liability of Company, and Owner shall indemnify and hold harmless Company from all claims, damages, losses and expenses including attorneys fees arising out of or resulting therefrom. Any such verification or adaptation will entitle Company to further compensation at rates to be agreed upon by Owner and Company.

**ESTIMATES OF COST**

Since the Company has no control over the cost of labor, materials or equipment or over a Contractor(s) method of determining prices, or over competitive bidding or market conditions, his opinions of probable Project Cost or Construction Costs that may be provided for herein are to be made on the basis of his experience and qualifications and represent his best judgment as a design professional familiar with the construction industry, but Company cannot and does not guarantee that proposals, bids or the construction cost will not vary from opinions of probable cost prepared by him. If the Owner wishes greater assurance as to the construction cost, he shall employ an independent cost estimator.

## EXHIBIT A

### Description of Basic Engineering Services

This Exhibit is attached to and made part of the Memorandum of Agreement dated \_\_\_\_\_, 2014 between the City of Centralia, Missouri (Owner) and BHMGE Engineers, Inc. (Engineer or BHMGE) providing for professional services.

The Project Scope includes: Design for the construction of three (3) 4.16 kV underground electric railroad crossings, including the associated substation exits.

Design Phase: Engineer will prepare design documents, schematic drawings, and complete the applications for obtaining crossing permits from the affected railroads. Should the Owner choose to seek formal bids for this work. All engineering services required to develop bidding documents suitable for obtaining bids for the project, and evaluation of such, will be additional services, not in the scope of the design fee.

If all, or nearly all, of the construction work is completed by an outside contractor, Engineer will provide bidding documents for this construction work as additional services with the design phase, not included in the design fee. Bid conferences and subsequent construction-related engineering work will be performed under the Construction Phase.

Construction Phase: Engineer will arrange and conduct a pre-bid conference, attend construction bid opening and other construction related meetings; provide staking of the lines; provide periodic construction observation, prepare and process contractor pay requests and prepare record drawings of the completed construction from the contractor's field sketches and marked engineering drawings.

#### Engineer's Compensation

Compensation for the Design Phase services provided in accordance with this Agreement shall be a fixed fee of \$13,000 including out of pocket/actual expenses. The Engineer shall submit for payment based on monthly progress of the work.

Compensation for the Construction Phase will be based upon the actual hours worked and out of pocket/actual expenses associated with the Engineer's work during this phase, and billed at the Engineer's regular hourly rates for such work. Actual cost is dependent upon the qualifications, schedules, and quality of work produced by the construction contractor; factors beyond the direct control of the Engineer. However, the Owner will always have final authority over the time and cost of the Engineer's field services.

#### Additional Services of Engineer

At the request of the Owner, the Engineer can provide additional services, either directly or through its affiliates, at regular hourly rates for such work. This work may include items not otherwise provided for by construction contractors or the Owner's staff; for example, startup and testing assistance; special reports; assistance and support for obtaining financing; assistance in the preparation of or acquisition of easements; attendance at meetings of the City Council or other services requested by the Owner from time to time.

***STREET and SANITATION DEPARTMENT***  
***Activity Report for August 2014***

1. Daily trash routes
2. Weekly cardboard and bi-weekly curbside recycling routes
3. Hauled off 4 loads of plastic to Ryan Ent. in Millersburg
4. Met with homeowner at 321 Southwest Circle about ditch in front of their house and drainage
5. Took dump truck #77 to Meyers Truck Service in Mexico for recall repair
6. Piled brush and grass at the drop off site several times
7. Assembled and delivered 5 trash cart to city resident
8. Cleaned up the shop
9. Mowed ditch that runs thru the golf course and billed them
10. Mowed street ditches around town
11. Loaded several trucks and trailers with mulch
12. Hauled off 1 load of recycling to Civic Recycling in Columbia
13. Serviced the loader and the 1 ton dump truck
14. Worked on drainage around town
15. Repaired and filled suck hole by inlet at Clark and Barr
16. Cleaned and did maintenance on 3 dump trucks
17. Repaired and filled suck hole by inlet on Southgate
18. Picked up and hauled off brush around town
19. Did lots of locates this month
20. Took 1 ton dump truck to D&D Tire for new front tires and alignment
21. Spent 12 days digging out and forming up and pouring and finishing 776ft of sidewalk on s. Columbia, and then backfilled, stripped forms, and saw cut
22. Cleaned out and straightened up both work trucks
23. Spent several days and spraying weeds around town
24. Got light bar set up and installed on new work truck and took down and had radio installed and everything wired up
25. Went to Hughes Bros and picked up new recycling trailer, then removed all of the dumpsters from the water dept. trailer and set all the dumpsters on the new trailer and got it all set up
26. Took pickup to D&D Tire and got new tires and front alignment
27. Built rack inside of street barn and stacked all of the forms from sidewalks on them
28. Tore out old sidewalk at 605 Clayton
29. Patched some potholes
30. Added gravel and smoothed up several shoulders and alleys
31. Delivered barricades for bike time trials
32. Did maintenance on both trash trucks
33. Met with Ben Randolph about installing 2 culverts on Maple
34. Hauled 5 loads of dirt to the bicentennial park and spread around new sidewalk by the bathroom

# CENTRALIA, MISSOURI

## Midland GIS Solutions Proposal

To GPS Locate and Map the City's Storm Water Utility Network



**Matt Harline**

City Administrator  
City of Centralia, MO  
114 S. Rollins St.  
Centralia, MO 65240

**Dear Matt,**

Midland GIS Solutions respectfully submits this proposal to the City of Centralia, Missouri to provide professional GPS and GIS mapping services. Midland GIS stands ready to assist in the City's efforts to develop a GIS program for their stormwater utility network.

Midland GIS Solutions proposes developing a comprehensive GIS program for Centralia for use in maintaining and managing their utility infrastructure assets. The following characteristics make Midland GIS Solutions uniquely capable of overseeing this project for Centralia:

- Midland GIS offers complete utility asset management solutions, from accurate GPS data collection and GIS mapping to web-based GIS solutions with editing capabilities for easy and efficient system maintenance.
- Midland GIS Solutions has provided GPS and GIS services to over one hundred cities and utilities in the Midwest. Our dedicated field staff has **GPS located hundreds of thousands of utility assets** for seamless GIS integration for use in utility maintenance, daily workflow management and engineering models.
- Midland GIS will dedicate an experienced project team of GPS Field Staff, GIS Technicians, GIS Specialists and Analysts, Programmers, Professional Land Surveyors and ArcGIS Server developers to ensure project efficiency and overall product quality.
- Kirk Larson, Sr. Vice President will personally manage and oversee your GIS project, which ensures open and complete communication throughout project development and implementation.

Thank you for the opportunity to present our Company for this very important project for your City. Our team of professionals has the experience and capabilities to make your GIS program successful and stands ready to continue our partnership with the City of Centralia in that success.

**Respectfully Submitted,**

**MIDLAND GIS SOLUTIONS**



**Ethan Herbek, Municipal Project Supervisor**

## COMPANY OVERVIEW

Midland GIS Solutions is an industry-leader in providing exceptional GIS and GPS mapping services to municipalities, utility companies, counties and private organizations. Our firm offers a wide-range of comprehensive geospatial services, such as GPS data collection and inspections, GIS data development and conversion services, consulting, training and technical support.

Additionally, Midland GIS has developed Integrity™, an intuitive web-based GIS solution to provide our valued clients with the necessary tools to increase efficiency in asset management and maintenance, workflow and overall productivity. We offer our clients a distinct commitment to high-quality, professional standards, and a forward-thinking perspective we believe is unique in this industry.

**Corporate Office Address:** Midland GIS Solutions, LLC  
501 N. Market Street  
Maryville, Missouri 64468  
Phone: 660.562.0050  
Facsimile: 660.582.7173



**Corporate Office  
Maryville, Missouri**

**Contact for Proposal:** Ethan Herbek  
Office: 660.562.0050  
Cell: 660.254.4132  
Email: [ethan.herbek@midlandgis.com](mailto:ethan.herbek@midlandgis.com)

**Ownership:** Midland GIS Solutions is a Missouri-based Corporation owned by Troy Hayes PLS, Matt Sorensen and Kirk Larson

**Office Locations:** Maryville, MO and Kansas City, MO

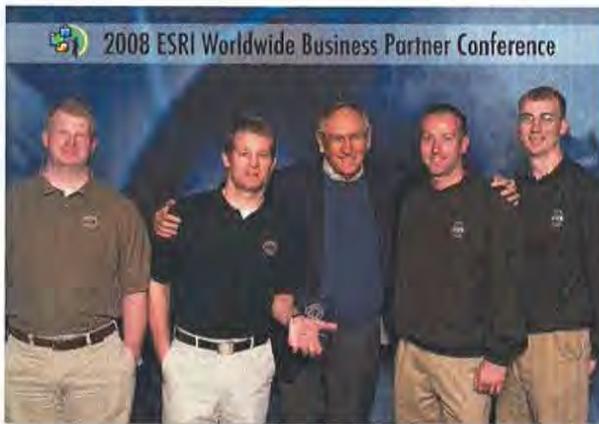
## COMPANY HISTORY

Owned and operated by Professional Land Surveyors, Midland GIS Solutions was established in 2000 under the corporate structure of Midland Engineering, Inc., which existed as a highly-respected mapping, surveying and engineering company in the Midwest for nearly 30 years. In 2000, Midland sold the engineering division of the company and re-organized their professional structure to include the companies of Midland GIS Solutions and Midland Surveying, Inc. The purpose of this restructure was to establish two firms that provided specialized, yet complimentary services in Geographic Information Systems and land surveying.

Today, Midland GIS Solutions is the most qualified and diverse GIS development company in the Midwest and has developed more successful GIS programs in Missouri, Iowa, and Kansas than any other firm. In addition to the longevity of our firm, Midland GIS Solutions maintains a professional staff of project managers, dedicated GPS field staff, GIS technicians, analysts and specialists, programmers and web administrators.

Headquartered in Maryville, Missouri, Midland GIS is the largest full-service GIS firm in the Midwest. Since 2007, the company has operated with state of the art equipment and software in a 7,000 square foot building dedicated solely to GIS program production, utility data collection and web-based application development.

Since 2005, Midland GIS Solutions has been a licensed reseller of Esri software and is an Esri Silver Business Partner. Midland GIS Solutions' personnel have extensive experience with Esri's ArcGIS software, utilize state-of-the-art software and GPS collection equipment, and routinely take advantage of the latest training opportunities, all significant steps towards efficiency in GIS data collection and development.



Midland GIS Solutions was awarded the **2008 Esri Business Partner of the Year** Award at the Worldwide Business Partner Conference in Palm Springs, CA.

From left to right: Kirk Larson, Matt Sorensen, **Jack Dangermond – President and CEO of Esri**, Tylor Hardy and Ryan Schieber.

***"[Midland GIS Solutions] brought an innovative product to market, and brought ESRI into a new market with their specialized knowledge and expertise that distinguished them from other partners." :: Esri***

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# CAPACITY TO ACCOMPLISH WORK

Midland GIS Solutions has teams of full-time, trained GPS field technicians that are dedicated to GPS locating municipal utilities and completing inspections for the sole purpose of GIS data integration.

All GPS Field and Technical Staff at Midland GIS Solutions are highly trained in all areas of GPS field collection and utility inspections, utilize survey and mapping grade GPS equipment and Esri software, and follow OSHA and Federal Traffic Safety regulations. Midland GIS Solutions maintains five (5) field crews, each led by a GPS Field Party Chief.

Midland's GPS field crews travel throughout the four state Region of Missouri, Iowa, Kansas and Nebraska providing GPS utility collection services on a daily basis. Our typical service area extends more than 500 miles from our home office in Maryville, Missouri. Our ability to provide these services with frequent travel, while adhering to strict budgets and time constraints, is unsurpassed.



Midland GIS Solutions has the capacity to provide technical support to more than 100 clients on an annual basis and manages 15 on-going GIS maintenance contracts that include routine GPS field updates, GIS parcel maintenance and 911/addressing maintenance.

In 2012, Midland GIS was awarded a five (5) year Master Agreement with the City of St. Joseph, Missouri to provide on-call GIS consulting and development services for the St. Joseph Department of Public Works and Transportation. This is the third consecutive Master Agreement awarded to Midland GIS Solutions by the City of St. Joseph, Missouri since 2003. Since that time, Midland has completed two large projects involving the GPS collection, inspection and mapping of the city's sewer and stormwater systems.

In late 2013, Midland GIS Solutions was selected based on qualifications by the City of Topeka, Kansas to GPS locate, inspect and map more than 22,000 stormwater and combined sewer features within the City's 11 drainage districts. These examples demonstrate Midland's experience and capacity to provide exceptional GIS data collection services to large and small communities, while providing timely and outstanding technical support to all of our valued clients.

Midland's professional staff specializes in numerous GIS technologies and performs tasks daily utilizing Esri's ArcView 10.0, ArcEditor and 3-D Analyst, as well as Global Positioning System (GPS) technologies. Personnel are also experienced with ArcEngine, ArcGIS Server, ArcObjects, the latest version(s) of AutoCAD and SQL Server. Our staff has also set up and configured Enterprise GIS

programs with ArcSDE for clients. GIS programmers and technicians are skilled in numerous programming languages that include Visual Basic .NET, HTML, Java, JavaScript C# and Silverlight.

## PROJECT MANAGEMENT

Midland's experience and successful completion of utility GIS projects has proven that Midland GIS Solutions understands the importance of information exchange and communication during the entire life of the project. As a result of this understanding, Midland GIS Solutions' project management team will synchronize all technical activities and communication with Centralia.

Midland's "client-focused" approach, and experience in project management has been the cornerstone of success for Midland GIS Solutions in a market that does not expect, but rather demands a high level of service. At the foundation of this approach is Midland GIS Solutions' proactive management philosophy, which anticipates challenges, revolves around listening, and is committed to partnering. On every project, Midland utilizes a team approach and encourages open communication channels with the client and their stakeholders.

Midland GIS Solutions' effective project management procedures are demonstrated in our ability to successfully manage and complete multiple projects simultaneously, while meeting all cost standards and parameters under aggressive schedules. Midland GIS Solutions proposes an experienced and professional team to oversee and execute the utility GIS mapping project for the City of Centralia.



Kirk Larson, Vice President of Operations will serve as Project Manager for the GPS data collection and GIS mapping project for the City of Centralia. All communications will be directed through Kirk

for the duration of the project. He will oversee the Midland GIS Solutions team as they work with the City to finalize project specifications. Additionally, Kirk will conduct meetings with appropriate staff to determine final data requirements, finalize all project schedules, and coordinate data delivery requirements.

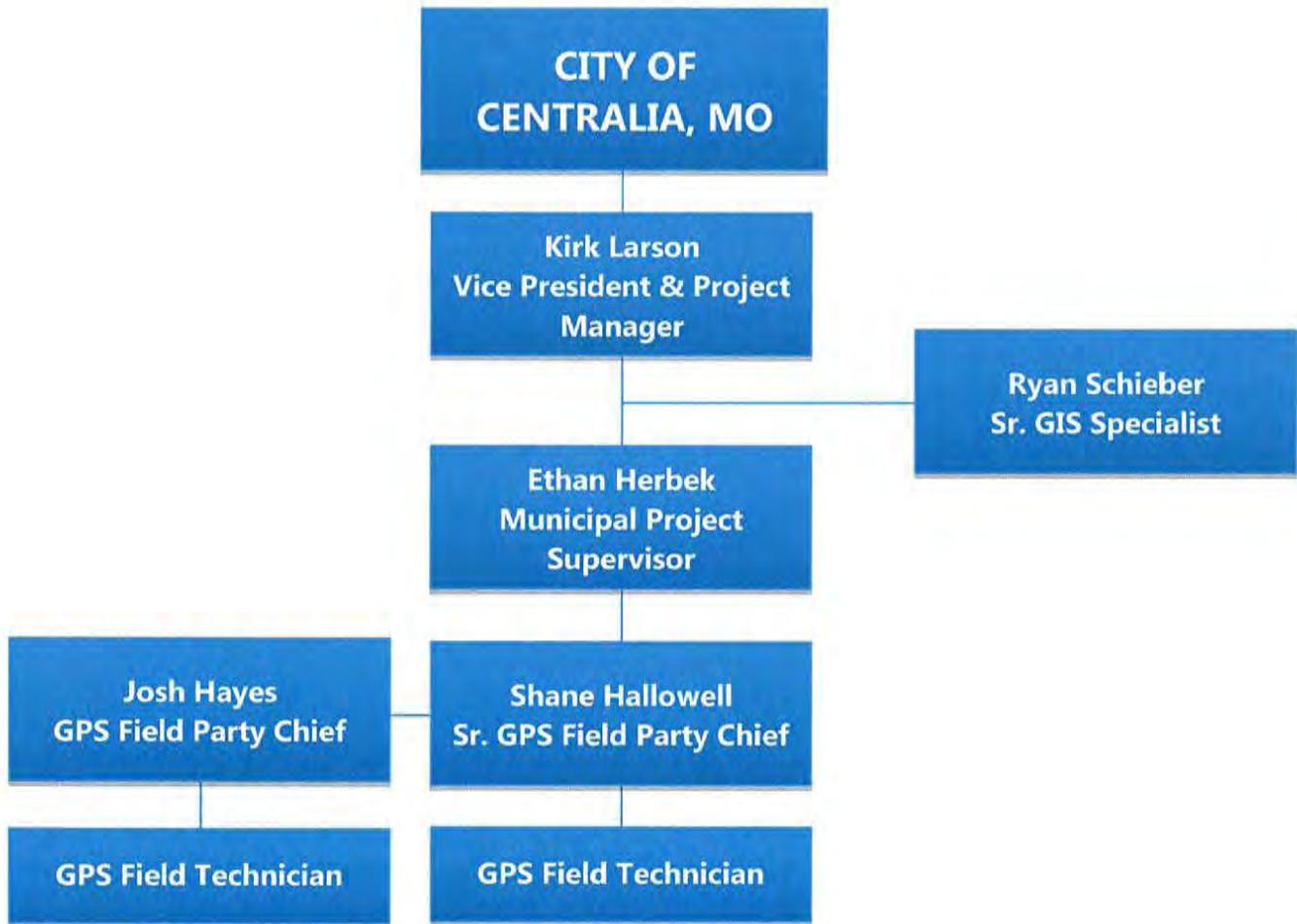
The Midland GIS Development Team proposed for this project will include Kirk Larson, Project Manager, one (1) Municipal Project Supervisor, one (1) GIS Specialist, two (2) GPS Field Party Chiefs and multiple Field Technicians. The proposed team members for this project have a unique combination of experience and skill in project management, data collection, quality control procedures and GIS mapping as well as utility infrastructure knowledge.

Midland GIS Solutions routinely provides all of the GPS data collection and GIS data development services proposed. All project requirements and specifications will be met by the key personnel identified in this section.

Midland GIS Solutions' project management procedures include a specific and tactical approach to communication amongst City staff and Midland's field and project management personnel. To ensure the successful outcome of any data collection and utility GIS mapping project, our field staff will maintain active communication with the City of Centralia through various means, including while conducting GIS data collection in the field, and attending onsite project status meetings.



Midland GIS Solutions will be available to meet with City staff to review data collection and utility GIS mapping progress upon request by Centralia at various times throughout the project. The following organizational chart demonstrates the flow of communication and project management of Midland's proposed Project Development Team for The Centralia GIS project:



## KEY PERSONNEL

Our diversified staff routinely applies innovative mapping solutions to real-world problems through custom program enhancements, specialized data development, efficient program implementation, and comprehensive support and consulting services. ***The integrity and knowledge of our staff is unsurpassed in municipal GIS program development.***

The following pages identify the names and qualifications of the individuals primarily responsible for services to be provided under this proposal. The education of all key personnel involved in project management and field/project supervision includes, at a minimal level, a college degree in geography or other related certification of expertise, from an accredited university.

## **KIRK LARSON, PROJECT MANAGER**

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[KLARSON@MIDLANDGIS.COM](mailto:KLARSON@MIDLANDGIS.COM)



### **EDUCATION**

Bachelor of Science Degree in Geography & Geographic Information Systems (GIS) – Northwest Missouri State University (Maryville, Missouri)

### **LENGTH OF SERVICE WITH FIRM**

2005 – Present (Midland GIS Solutions - Principal Owner)

As Vice President of Operations at Midland GIS Solutions, Kirk oversees the development of utility GIS programs, GPS Field Collection and web-based GIS applications. While at Midland GIS, Kirk has successfully managed and overseen development of more than 100 municipal and utility GIS programs. Kirk has served in the mapping and GIS industry since 1995, working for five (5) years as a GPS field technician and working in both local government and private sector as a GIS Coordinator. Kirk developed a nationally recognized Enterprise Wide GIS program for the growing county of Sarpy County, Nebraska where he served as GIS Coordinator from 2002 to 2005.

On an annual basis, Kirk typically gives ten or more presentations at regional and statewide water, wastewater and electric utility conferences and training seminars to City Administrators, Public Works Directors, Utility Superintendents and Field Operators. Continuing education credits are typically offered to attendees in his educational presentations. Kirk's unique understanding and knowledge of utility asset management and GPS field collection position him as an expert in those fields.

### **PROJECT RESPONSIBILITY**

Kirk Larson will serve as the main point of contact throughout the project between Midland GIS Solutions and the City of Centralia. Kirk will be responsible for day to day project management tasks and ensure that all project staff, technical planning, project schedules, budgeting, client communication and quality control expectations are being met and/or exceeded.

### **PROFESSIONAL TRAINING**

- Esri Training Certificates:
  - Intro To ArcGIS I & II, Creating & Editing Parcels with ArcGIS, Creating & Editing Geodatabase Features, Creating & Editing Geodatabase Topology,; Working with Geometric Networks for utilities; Parcel Fabric Workshop
- Autodesk Training Courses: AutoCAD & Autodesk Map 3D
- OSHA Certified in Occupational Safety and Health Training & Confined Spaces Certification (2009 & 2013) and Traffic Control for Field Engineering & Surveying (2013)

## **RYAN SCHIEBER, SR. GIS SPECIALIST**

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[RYAN.SCHIEBER@MIDLANDGIS.COM](mailto:RYAN.SCHIEBER@MIDLANDGIS.COM)



### **EDUCATION**

Bachelor of Science Degree in Geography & Geographic Information Systems (GIS) – Northwest Missouri State University (Maryville, Missouri)

### **LENGTH OF SERVICE WITH FIRM**

2002-Present

### **EXPERIENCE**

Ryan has 12 years of GIS experience at Midland GIS Solutions and provides a wide range of GIS development and conversion services, as well as customer support to Midland's valued clients. As Sr. GIS Specialist, Ryan manages the geodatabase design and coordinates the data development of all GIS projects, oversees and assists with quality control procedures and provides technical support for more than fifty (50) GIS and web GIS clients. Ryan is trained in the latest ArcGIS and ArcGIS Server software and applications.

### **PROJECT RESPONSIBILITY**

Ryan's experience with GIS data integration and development is extensive. As Sr. GIS Specialist, Ryan will be responsible for overseeing all aspects of GIS program development and will work directly with GIS Technicians to ensure all development schedules and development procedures are adhered to. Ryan will also lead in quality control and quality assurance to ensure that the final project deliverables meet and/or exceed the client's requirements.

### **PROFESSIONAL TRAINING**

- Esri Training Certificates:
  - Creating & Editing Parcels with ArcGIS, Creating & Editing Geodatabase Features, Creating & Editing Geodatabase Topology, Intro to ArcGIS Server, Intro to the Multiuser Geodatabase, Managing Editing Workflows in a Multiuser Geodatabase, Intro to PLTS; Working with Geometric Networks for utilities; Developing Applications with ArcGIS Server Using the Microsoft .NET Framework; Parcel Fabric Workshop
- Autodesk Training Courses: AutoCAD 2002 & Autodesk Map 3D 2007

## **ETHAN HERBEK, UTILITY PROJECT SUPERVISOR**

[ETHERBEK@MIDLANDGIS.COM](mailto:ETHERBEK@MIDLANDGIS.COM)



### **EDUCATION**

Bachelor of Science Degree in Geography, Minor in GIS – Northwest Missouri State University (Maryville, MO)

### **LENGTH OF SERVICE WITH FIRM**

2004-Present

### **EXPERIENCE**

Ethan Herbek has been with Midland GIS Solutions for 10 years. Ethan is experienced in GIS data development and GPS field collection, serving in multiple management roles that include Municipal Project Supervisor, Field Supervisor, Utility GIS Specialist and Quality Control Manager. Ethan is capable of supervising all aspects of municipal and utility GIS projects, from field data collection and utility inspections to geodatabase modeling and GIS data integration. As a Project Supervisor, Ethan has a vast understanding of water, wastewater, electric, gas, and storm water utility operations and management. This knowledge positions Ethan to successfully apply GIS technology to solve real world utility management and maintenance problems by better understanding the challenges our clients deal with on a daily basis.

### **PROJECT RESPONSIBILITY**

As Municipal Project Supervisor, Ethan will be responsible for the overall daily management of field data collection and GPS field personnel, as required by the City of Centralia. Ethan will ensure that all aspects of the GPS data and attribute collection are synchronized with the overall project plan for the City of Centralia. Ethan will oversee and monitor all safety procedures and supervise day-to-day quality control during the GIS data creation portion of the project.

### **PROFESSIONAL TRAINING**

OSHA Certified in Occupational Safety and Health Training & Confined Spaces Certification (2009 & 2013) and Traffic Control for Field Engineering & Surveying (2013); Creating and Editing Parcels with ArcGIS (16 hrs.); Esri Intro to ArcGIS (16 hrs.)

## **SHANE HALLOWELL, SR. GPS FIELD PARTY CHIEF**

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[SHANE.HALLOWELL@MIDLANDGIS.COM](mailto:SHANE.HALLOWELL@MIDLANDGIS.COM)



### **EDUCATION**

Bachelor of Science in Geographic Information Systems - Northwest Missouri State University (Maryville, MO). Currently enrolled in Master's Program for GIS at NWMSU.

### **LENGTH OF SERVICE WITH FIRM**

2010-Present

### **EXPERIENCE**

Shane Hallowell has more than four years of GPS field data collection and utility inspection experience. As a Sr. GPS Field Party Chief for Midland GIS Solutions, Shane is very knowledgeable in GPS data collection procedures and quality control measures to ensure accuracy and efficiencies on every project. Shane is also responsible for training GPS field technicians to utilize all GPS equipment and techniques with survey grade (RTK) and mapping grade units. Shane is trained and experienced with Esri software and OSHA safety regulations.

### **PROJECT RESPONSIBILITY**

Shane will lead a GPS field crew to collect data for the City of Centralia and field check all data prior to processing and mapping the data in the office. Shane will also be responsible for utility GIS mapping and overseeing all quality assurance and quality control procedures for all mapping and data conversion projects. He will also maintain active communication with Centralia City staff when providing onsite GPS and/or GIS services.

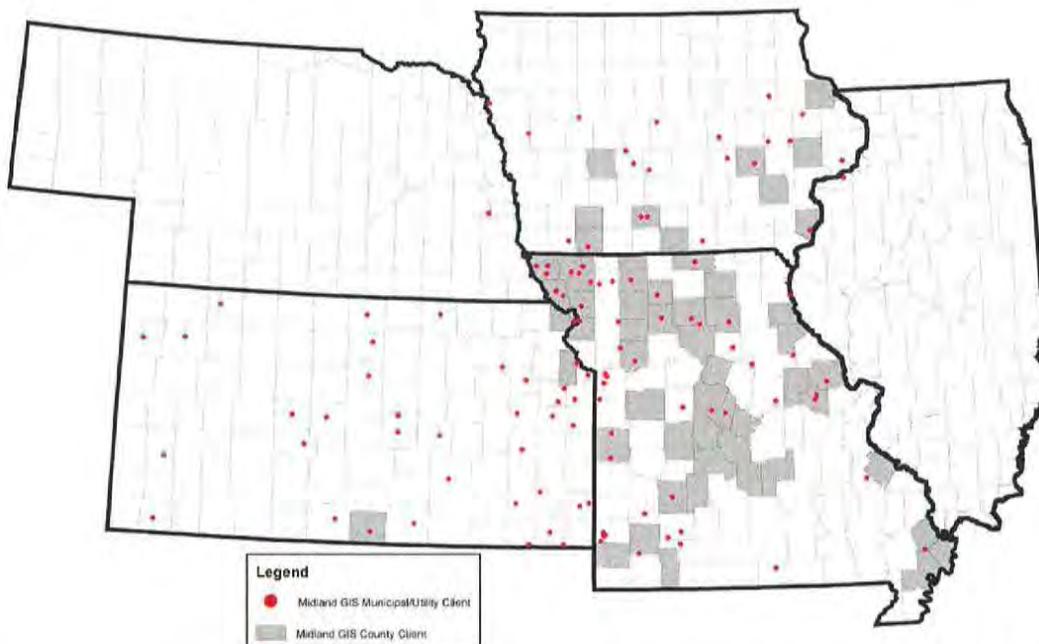
### **PROFESSIONAL TRAINING**

OSHA Certified in Occupational Safety and Health Training & Confined Spaces Certification (2009 & 2013) and Traffic Control for Field Engineering & Surveying (2013)

# PROJECT EXPERIENCE

As a full-service professional GIS firm, Midland GIS Solutions provides a solid geospatial foundation for all of our valued clients to ensure the integrity and longevity of their municipal GIS program. Midland GIS Solutions has the experience and technical knowledge to provide the professional services desired by the City of Centralia for this project. **Midland GIS Solutions' field staff has GPS located hundreds of thousands of utility assets for utility GIS mapping projects.**

The following map demonstrates our level of experience in GIS and GPS mapping, data development and utility asset management solutions throughout the counties and cities in Missouri, Iowa, Kansas and Nebraska. **To date, Midland GIS Solutions has completed more than 100 municipal and utility GPS/GIS projects.**



The successful outcome of any GIS project requires a solid foundation for the program to thrive on and it starts with the accurate collection of field data. Our approach to data collection is to collect complete and accurate GPS locations for utility assets and utilize in-house data collection application to streamline data attribution.

Midland GIS Solutions proposes to GPS locate, attribute and inspect the stormwater utility features in Centralia to create a comprehensive GIS mapping program. As the following project examples will demonstrate, Midland has successfully developed utility data for cities throughout the Midwest region. Midland's professional field experience on similar projects is unsurpassed for quality and meeting aggressive project schedules.

## SIMILAR PROJECTS

### ST. JOSEPH, MISSOURI

Storm water Network Located & Mapped

**SERVICES PROVIDED:** 2009 (Midland currently has 5-year GIS Master Agreement with City)

**PROBLEM:** The Missouri Department of Natural Resources (DNR) requires that industries have MS4 (Municipal Separate Storm Sewer System) Permits for storm water runoff that is not treated prior to entering a public waterway. The City of St. Joseph needed to locate and map their storm water utility features and tributaries in industrial areas near the Missouri River.

**SOLUTION/DELIVERABLES:** Midland GIS Solutions was selected by the City of St. Joseph in October 2009 to begin Phase I of a three phase MS4 Project, which consisted of GPS locating and field verifying all storm water structures and tributaries within various industrial sites along the Missouri River. The project also included the development of 3D terrain models to accurately depict storm water runoff areas within the drainage basins on individual industrial site locations. Midland GIS Solutions GPS located all features with survey grade (+/- 2 cm) level accuracy.

In 2011, the City of St. Joseph elected to have their entire storm water infrastructure mapped east of the City's Belt Highway in the 102 River Basin. This project concluded in August 2012 and included GPS data collection and utility mapping for each watershed within the 102 River Basin. This area is highlighted on the map (left). Midland GIS was recently selected to continue the storm water collection in the Missouri River Drainage Basins, with work scheduled to begin in October 2012.

Storm water features collected for all storm water projects include junctions, manholes, curbside drop inlets, grate inlets, culvert boxes, and outlets and outfalls. All storm water features are opened, inspected and attribute data is collected. Attribute features, such as structure depth, GPS coordinates, rim elevation, diameter, height, downstream invert, length, material, shape, slope, etc. were collected and seamlessly integrated into the City's GIS program and their GIS website.



[www.stjosephmogis.com](http://www.stjosephmogis.com). (Utility data is closed to public)

## SEDALIA, MISSOURI

### Sanitary Sewer and Storm Sewer Networks Located & Mapped

#### **SERVICES PROVIDED:** 2011

**PROBLEM:** The City of Sedalia was seeking a GIS services provider to fulfill various mapping and utility management needs to ultimately separate their combined sanitary sewer and storm sewer networks. Sedalia needed accurate locations and inspections of the City's utilities so that they could provide that data to a large engineering firm for modeling and engineering studies regarding the city's combined system infrastructure. Secondly, the City needed up-to-date GIS data to effectively manage their utility infrastructure assets to increase internal efficiencies and for the ability enhance reporting capabilities to regulatory agencies, such as the MO DNR and the EPA.

**SOLUTION/DELIVERABLES:** The City of Sedalia, MO contracted with Midland GIS Solutions as part of a substantial sanitary sewer project in the city of more than 20,000 residents.



Midland GIS Solutions was selected based on qualifications to GPS locate and inspect the city's sanitary sewer and storm sewer utility networks, including 2,200 manholes and 2,400 storm water features. All survey grade collected data was integrated into a comprehensive GIS program for the city and provided to their engineering firm for full system modeling in preparation for treatment facility combination and combined system separation.

One of the challenges that Midland GIS faced in collecting this utility data for the City was traffic control. The Missouri State Fair in Sedalia overlapped with the project schedule and Midland's professional field staff often worked throughout the night when the highways and roadways could be safely shut down by local law enforcement for our field collection staff.

The City of Sedalia elected to maintain and manage their GIS program with Midland's Integrity™ web GIS solutions. Approximately 60% of the sewer lines in Sedalia had been inspected with video cameras. Midland was able to integrate those videos into the GIS program through Integrity and make them spatially accurate and easily accessible. The City has also classified their sewer lines based on PACP standards and that data was integrated into Integrity as well.

<https://sedalia.integritygis.com> (Closed access site)

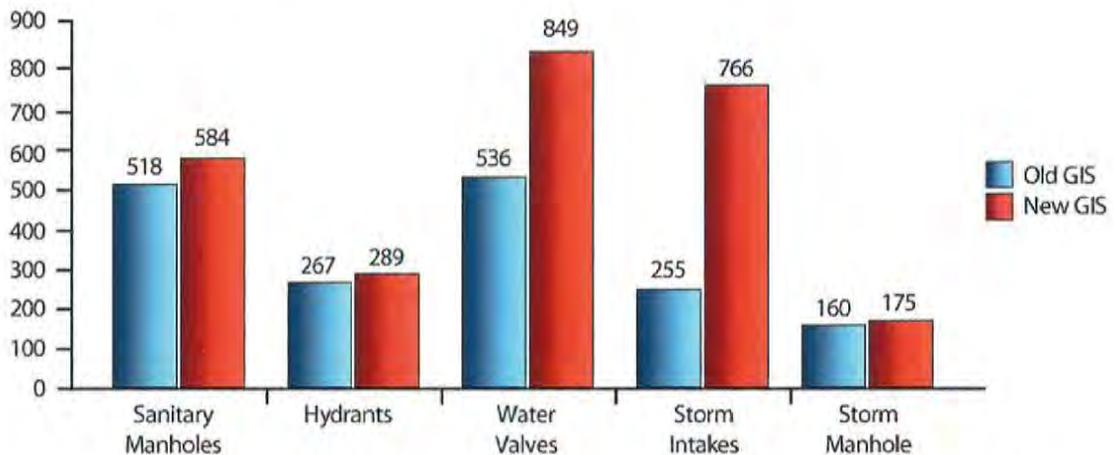
## PERRY, IOWA

Water, Sanitary Sewer & Storm Water Networks Located & Mapped

### SERVICES PROVIDED: 2011

**SCOPE:** The City of Perry, Iowa entered into GIS in 2006 with an engineering firm that provided GIS services. The City struggled to utilize the GPS data they received for managing their utilities and years after the initial program was created, Perry learned the data they were provided was not accurate and essentially useless in developing a comprehensive utility management program for their community. In addition to having inaccurate data, the City also had an aging utility staff nearing retirement.

**SOLUTION/DELIVERABLES:** The City of Perry wanted to take an active role in the re-development of their GIS program and hired Midland GIS Solutions to re-locate all utility assets for water, sanitary sewer and storm water networks utilizing RTK GPS units. Below is a graph demonstrating the disparity of utility features that had initially been included in the City's GIS program (in blue) and the actual number of features after Midland GIS located them (in red). For the first time the City of Perry had a true depiction of their water, sewer and storm water networks.



The goal of the city was to have all of their utility data centrally stored in one virtual location, but exist in a multi-user environment. Midland GIS Solutions developed an Integrity™ web GIS program for the City of Perry so that data could be accessed by multiple, authorized users. Maintenance of the City's GIS program is streamlined with Integrity's editing features.

<https://perry.integritygis.com> (Closed access site)

## MT. VERNON, IOWA

Sanitary Sewer, Storm Sewer and Waterline Networks Located & Mapped

### SERVICES PROVIDED: 2012

**PROBLEM:** The City of Mt. Vernon, Iowa was maintaining their utility networks with outdated maps and did not have reliable maps of their sanitary sewer, storm sewer and waterline infrastructure. The City wanted to obtain accurate locations of their utility features and establish a system to manage and maintain the data that would generate a return on investment over time.

**SOLUTION/DELIVERABLES:** Midland GIS Solutions contracted with the City of Mt. Vernon to provide professional GPS and GIS services. Midland began the project by providing a geodatabase workshop, integrated digital aerial photography and GIS data layers from Linn County, Iowa. GPS field technicians conducted research document acquisition and geodetic control to ensure a solid foundation for the utility GIS program.

All above ground sanitary sewer, storm sewer and water network features were GPS located utilizing RTK GPS methods to obtain survey grade horizontal (x,y) and vertical (z) positions for utility assets. Midland's experienced field personnel collected attribute data for all utility assets and conducted detailed inspections of all sanitary sewer manholes.

Once GPS data collection and GIS mapping was complete, Midland GIS developed an Integrity GIS website for the City to easily maintain and manage their utility GIS data. With Integrity, the City of Mt. Vernon can conduct advanced queries, run detailed reports, print maps to scale and maintain and edit utility attribute data. The City's Integrity website pulls GIS services from Linn County, Iowa's GIS website, providing the City with instantly updated GIS data from the County. The Integrity website can be accessed at <https://mtvernon.integritygis.com>. The Linn County, IA GIS data is publicly available and all utility data is password protected within the Integrity GIS website.

The City of Mt. Vernon, Iowa is located just east of the Cedar Rapids metropolitan area and has a population of about 3,400.



# PROJECT APPROACH

The following explanation outlines the products and services Midland GIS Solutions will provide to the City of Centralia, Missouri.

## KICK-OFF MEETING

Midland GIS Solutions will provide a half (1/2) day "Kick-off" meeting and Geodatabase Design Workshop for Centralia. The Kick-off meeting is essential to developing open communication with the client and will help establish Midland GIS Solutions' guidelines and procedures for coordinating with Centralia staff. The following important topics will be discussed and/or determined at the Kick-off meeting.

## COLLECT EXISTING DATA

Midland GIS Solutions will acquire copies of available, relevant GIS data, AutoCAD drawings, hard copy utility maps, as-built information, and historical utility drawings from Centralia for use as reference during the project.

## SAFETY AND PROCEDURES

Midland GIS will review safety and field procedures with staff during the Kick-off meeting to ensure the safety of not only our staff and the staff of the City, but the citizens of Centralia as well. Midland GIS follows a strict safety and procedures manual and also requires all field staff to attend OSHA safety classes to obtain confined space certification. All Midland GIS employees are required to attend internal quarterly safety meetings to review procedures and concerns.

At all times, field staff will be wearing the required Class II traffic safety vests and all field vehicles will be clearly marked with company information and have the required safety lights for operation while in public right-of-way. All GPS field personnel have acquired OSHA training for "Traffic Control for Field Engineering & Surveyors". Proper traffic control signage will be utilized when necessary while operating in public right-of-way. If required, due to traffic concerns, Midland GIS will operate during non-peak hours to obtain field locates and inspections. If Midland GIS staff has concerns about their safety, the appropriate Centralia staff or local law enforcement will be contacted.

## PROJECT TIMELINE AND MILESTONES

Midland GIS will review and discuss the anticipated project timeline and milestones with Centralia staff. Any modifications to the project schedule at the request of the City will be discussed during the Kick-off Meeting.

## WORK SECTOR DEFINITION

Midland GIS will work with Centralia staff to define a grid and identify work sectors by drainage basin for the entire project area. The creation of these work sectors serves two very distinct and important roles during the project. First, the project sectors will be utilized by Midland GIS field staff as a quality control measure during the field collection of each drainage basin. Field staff will work within each sector and complete all locates and inspections required prior to moving on the next sector. This allows for a very efficient method of data collection and translates into cost saving and quality for the City. The second aspect of working within project sectors is to allow Centralia staff an easy method to track progress and know exactly what part of the drainage basin Midland GIS field staff is in. It also allows for pre-planning during morning meetings for traffic control and City staff assistance.



**SAMPLE PROJECT  
SECTORS BY  
DRAINAGE BASIN**

## PUBLIC NOTIFICATION

Midland GIS will work with Centralia staff to ensure proper citizen notification. It has been our experience on similar large scale projects that informing the citizens as best as possible can help to alleviate any concerns local residents may have. Notifications at City Hall, utility billing offices and the local newspaper or public access channel (if available) is highly recommended. Midland GIS field staff will carry an informational letter on letterhead from the City of Centralia describing the project and the proper contact information at the City. It is also recommended that local law enforcement be notified about the project and that Midland's field staff will be working in town.

# TECHNICAL WORK PLAN

## GEODATABASE DESIGN

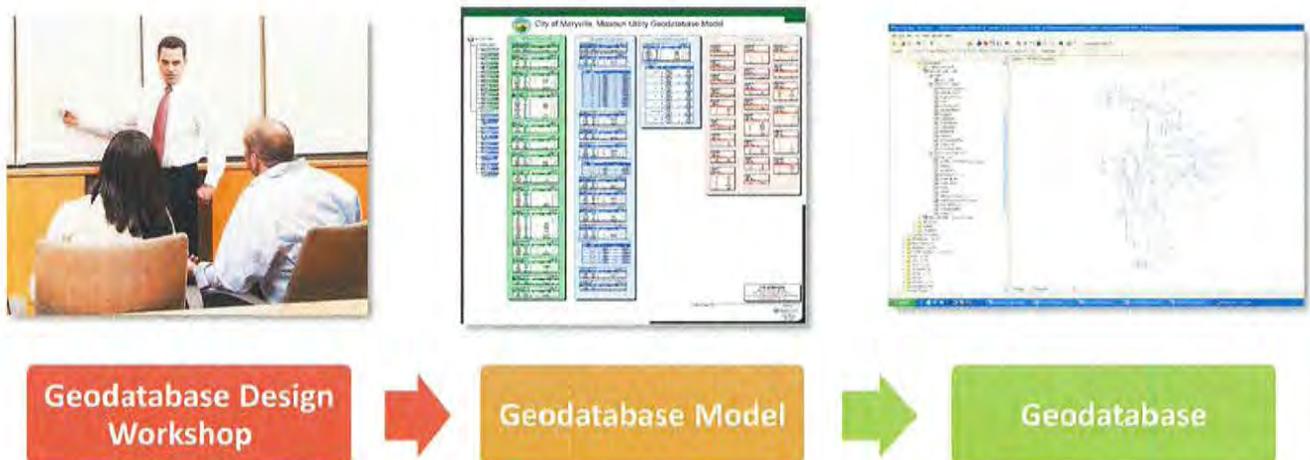
Midland GIS will work with Centralia staff to design a utility geodatabase model to meet the City's current and future utility asset management needs, as well as identify and define the logical structure for the geodatabase model.

***"A geodatabase can be defined as the centralized environment for storing and managing spatial data and is the core component of developing a GIS program."***

When creating the overall design of the geodatabase for Centralia, Midland GIS Solutions will take into consideration the best model and structure to meet the needs of the City. The geodatabase will also be based on Midland's previous models, the published Esri utility model and future GIS needs, as identified by Centralia. Developing an accurate and functional geodatabase will allow Centralia to:

- Store all GIS-related data in a centralized location
- Apply rules and relationships to the data
- Create a consistent and accurate database of spatial data
- Define relationship classes and topological enforcement rules
- Work in an environment that supports multi-user access and editing

Midland's upfront design process enables field personnel to collect data in a rule-based environment. This minimizes field coding errors by pre-defining the attribute tables that are used in the field and also keeps the data collection process consistent.



## DIGITAL AERIAL PHOTOGRAPHY INTEGRATION

Midland GIS Solutions will integrate digital aerial photography of the City of Centralia (provided by the City) into the GIS program. The raster datasets created will be viewed as a continuous, seamless image across the entire project area.



After the datasets are created, the aerial photography will be adjusted for color and contrast to meet specifications set by Centralia.

Midland GIS Solutions will provide Quality Assurance and Quality Control (QA/QC) on the provided aerial photography. This process will involve "heads-up" on-screen visual inspection of the photography by trained GIS Specialists. Midland GIS Solutions will immediately notify the City if any visual banding, warping, gaps, or distortions are discovered.

Unless otherwise requested by Centralia, Midland GIS Solutions will not be performing any additional field ground control checks in relation to the spatial accuracy of the aerial photography.

## INCORPORATE COUNTY GIS DATA LAYERS

Midland GIS Solutions will incorporate all available cadastral map data layers from Audrain and Boone Counties in Missouri into the GIS program upon request. Centralia is responsible for any cost associated with acquiring the GIS data from Audrain and Boone Counties. Incorporating these data



layers will establish a base map for the City's GIS program, minimizing time and cost associated with independently developing this data to integrate into the GIS program.

## GPS PROJECT PLANNING

Midland GIS will employ its in-house mission planning process and software for the City of Centralia's utility GIS project. Mission planning for GPS surveys includes the evaluation of satellite ephemeris data (data showing where GPS satellites are located) for the best satellite coverage. This helps ensure the highest quality GPS accuracy during the project and also minimizes down time.

## STORMWATER GPS FIELD DATA COLLECTION

Midland GIS will locate, through RTK (survey grade) GPS methods, the City's stormwater facilities contained within the defined project limits. Captured features through GPS surveys will include all attributes designated by the City of Centralia during the planning phase of the project. GPS surveys will be referenced to the Missouri State Plane coordinate system to allow for direct insertion into the City's GIS program.

Horizontal (x,y) coordinates and vertical (z) elevations will be obtained in the field for the stormwater facilities. Features will be collected at sub-centimeter horizontal and vertical accuracies.

Midland GIS Solutions will GPS field locate above ground utility features for the stormwater network within the project limits. (The exact project boundary will be agreed upon before commencement of the project).



## STORMWATER STRUCTURES TO BE LOCATED FOR THE CITY OF CENTRALIA:

- **Manholes**
- **Inlets**
- **Junctions**
- **Boxes**
- **Outfalls**



Inlets that are inaccessible by GPS due to tree cover or satellite visibility will be noted and shot utilizing traditional survey methods. All data will be coded in reference to method of collection utilized.

## STORMWATER FIELD ATTRIBUTE COLLECTION

Midland GIS will collect the stormwater attribute data during this phase of the project. Any stormwater structures that require further assistance in opening or gathering attribute data will be noted and Midland GIS will work with City staff to gain access to the identified stormwater structures.

Midland GIS will utilize our customized stormwater ArcPAD field application that has been successfully used on various other similar projects.



All field data will be predefined for field staff to ensure accurate and consistent attribute collection. Field staff will run the custom ArcPAD application on a Trimble Yuma GPS unit to allow for quick and easy identification and navigation of the stormwater features. All data will be downloaded nightly and transferred via the internet to the Maryville office and inserted in to the project geodatabase. All data will be backed up nightly.

The stormwater features to be collected will be defined in preliminary meetings with the City. Storm water features will be opened, inspected and attribute data will be collected. Attribute features to be collected will correlate with the required attribute fields to allow for seamless integration with the Esri ArcGIS software.

### STORM WATER ATTRIBUTES TO BE COLLECTED INCLUDE:

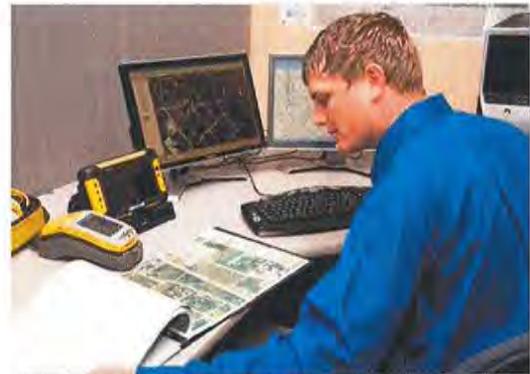
- Date
- Inspector
- Feature number
- Inspected (Y/N)
- Pipe Sizes
- Pipe Materials
- Reason not inspected
- Feature Type
- Structure elevation
- Cover type
- Depth To F/L
- Type
- Condition
- Invert depths

Strict safety procedures will be followed by Midland GIS during this phase of the project. Proper signage and cone placement will be utilized when stormwater features are being located and inspected.

## GIS FEATURE CREATION

Midland GIS Solutions will develop an Esri ArcGIS Desktop v.10.x geodatabase file for the stormwater distribution network for the City of Centralia. Unique feature class data layers and custom domains will be created for the layers that are defined during the Geodatabase Design Workshop portion of the project. Custom domains will be added to Midland GIS Solutions' custom field inspection application to ensure that our field staff collects clean and consistent data throughout the utility survey project. These domains will also be utilized by Centralia staff for future management of the geodatabase to help simplify the editing and data management processes.

Midland GIS will acquire copies of all available existing mapping records for Centralia's stormwater utility infrastructure, in addition to the existing GIS dataset. These records may include historical maps, as-build records and AutoCAD drawings. All hard-copy maps will be scanned so that they may be returned to the City in a timely manner.



Storm water line segments will be created utilizing custom, in-house editing tools developed by the Midland GIS development team. These tools will incorporate inspection data collected by field staff and will auto-generate stormwater line segments illustrating flow direction, slope and exact length measurements. Quality assurance warnings have been built into these tools to verify positive slopes and to check for inconsistencies with pipe material and diameter.

## QUALITY ASSURANCE & QUALITY CONTROL



Quality Control and Cost Control issues involved with this project are of paramount importance to Midland GIS Solutions and to the overall integrity of the proposed project. These issues range from GPS accuracy and data development precision to successful database integration, which potentially affect every aspect of the project. Through the combined efforts of our project team, an emphasis on quality control will remain at the highest level of importance during the development and implementation of the City's

GIS program. Our efforts to ensure the highest quality products and services to the City of Centralia, Missouri include:

- Custom QA/QC ArcGIS tools
- "Heads-up" QA/QC against base data or aerial photography
- Digital and hard copy checks against field notes and as-built drawings
- 5% redundancy check of all GPS collected data
- Printed check plots for review by Centralia staff
- Assurance that end product shows complete connectivity

### GPS REDUNDANCY CHECK

As part of the quality control process, Midland GIS Solutions will GPS locate five (5) percent of the features previously shot during the project. This process is part of the Midland GIS field protocol and will be employed during the Centralia project. Midland GIS will compile and process the results against the other data set and verify the required accuracy tolerance is being met.

# DELIVERABLES

After the staff at the City of Centralia, Missouri has reviewed and approved all GPS located and attributed data, Midland GIS will present a full set of deliverables to the City. All collected and mapped stormwater data will be uploaded into the City's existing geodatabase and also integrated into the City's Integrity GIS website.

## PROPOSED DELIVERABLES INCLUDE:

- (4) Sets of bound 11x17 Truck Books
- (1) Full system 42" high gloss wall map
- (6) Months free Tech Support that includes:
  - Phone Support
  - Remote Web Support
  - Email Response
  - Dedicated Project Contact

## REFERENCES

### ST. JOSEPH, MISSOURI

**Sean DeWeese, Environmental Services  
Coordinator**

Water Protection Administration Building  
3500 759 Highway  
St. Joseph, MO 64504  
(816) 271-5318  
[sdeweese@ci.st-joseph.mo.us](mailto:sdeweese@ci.st-joseph.mo.us)

### SEDALIA, MISSOURI

**Devin Lake, Public Works Project Mgr.**

Municipal Building, Ste. 203  
200 S. Osage Avenue  
Sedalia, MO 65301  
(660) 827-3000, Ext. 162  
[dlake@cityofsedalia.com](mailto:dlake@cityofsedalia.com)

### PERRY, IOWA

**Josh Wuebker, Asst. Public Works Dir.**

1102 Willis Avenue  
PO Box 545  
Perry, IA 50220  
(515) 465-2675  
[josh.wuebker@perryia.org](mailto:josh.wuebker@perryia.org)

### MT. VERNON, IA

**Dan Boggs, PE, City Engineer**

213 1<sup>st</sup> Street NW  
Mt. Vernon, IA 52314  
(319) 895-0880  
[dboggs@cityofmtvernon-ia.gov](mailto:dboggs@cityofmtvernon-ia.gov)

### SERGEANT BLUFF, IOWA

**Mark Huntley, Public Works Director**

401 4<sup>th</sup> Street  
PO Box 703  
Sergeant Bluff, IA 51054  
(712) 943-9615  
[Mark@CityofSergeantBluff.com](mailto:Mark@CityofSergeantBluff.com)

### TRENTON MUNICIPAL UTILITIES

**Chad Davis, Utility Director**

1100 Main Street  
PO Box 108  
Trenton, MO 64683  
(660) 359-2281 x27  
[utildirector@trentonmo.com](mailto:utildirector@trentonmo.com)

# FEE SCHEDULE

## GPS DATA COLLECTION & GIS DEVELOPMENT

Storm Water Utility Network \_\_\_\_\_ \$32,065.00

**ACTIVITY REPORT  
WATER DEPARTMENT  
AUGUST 2014**

- Filled in around manholes in three yards to level to grade – settled
- Dug up service at Bryson / Briarwood and repaired leak
- Completed meter radio installation in town – 126 completed
- Installed new air actuator in backwash line at Plant
- Installed new secondary blowdown motor in blowdown room
- Made water tap at 617 Pool
- Made water tap at 611 Pool
- Dug hole at Chance's for 12" insert valve. Valve showed up too small, had to refill hole for later date
- Checked hydrant at South Street hit by truck. Fixed broken cap and straightened
- Reset service at 119 Walnut after being hit by plumber and updated
- Worked on fire hydrant at Railroad / Hickman – bad lead nozzle
- Assisted street department with recycling
- Hauled brush to landfill
- Call out to 806 Booth for reconnect of services
- Assisted electric department repair sewer at 525 S. Allen
- Bac T samples collected and delivered to Mexico
- Worked on new lime sled hook up piping and electrical
- Pulled pumps at Fountain Road Lift Station – twice with assistance from electric dept
- Mowed at N.W. and N.E. Lagoon and around lift stations
- Checked leak at 545 S. Rollins – residents
- Worked and corrected CO2 regulator for camera truck
- Flushed and ran camera in sewer main at Head and Walnut
- Mowed at overland flow fields
- Dug up meter jar at 1026 E. Lakeview and reset to grade and replaced broken meter jar lid
- Replaced valve box hit by mower at Rec Center
- Hauled dirt to meter at Joann Ball's to insulate for winter
- Changed key valve at Lot # 38 Tidball's
- Ran sewer camera and flushed lines on Booth and Howard Burton
- 27 disconnects for nonpayment
- 30 plus high/low readings for September Billing
- Repaired Hale's meter (rock work)
- Filled sink holes at Keith Keller Repair
- Did dirt work around Ball's meter
- Repaired water valve at Rec Center that was hit by mower
- Repaired meter jar at 10 26 Lakeview
- Call out Tuesday evening for water leak at 428 Collier. Repaired on Wednesday on service side
- Mowed for 8 hours at the NE Lagoon
- Sewer flush and camera work