MINUTES FOR SEPTEMBER 16, 2013

BOARD OF CHEROKEE COUNTY COMMISSIONERS

CHEROKEE COUNTY, KANSAS

CONVENE

Commissioner Pat Collins called the regular session of the Cherokee County Board of Commissioners (The Board), to order and led all in attendance in the Pledge of Allegiance at 9:03 AM on Monday, September 16, 2013 in the Commission Room, #109 of the Cherokee County Courthouse located at 110 W Maple St., Columbus, Kansas. Commissioners Richard Hilderbrand, Charles Napier, Pat Collins, and County Clerk Rodney Edmondson were present.

Members of the press present: Larry Hiatt, Patrick Richardson, Phillip Wade

Leonard Vanatta - County Road Supervisor
Gene Langerot - County Lot Supervisor

They appeared before the Board on routine county business. They presented a proposal from Crossland Construction Co. to recycle concrete located at the lot. The proposal is based on 10,000 tons to be recycled at a maximum price of $68,500. After comparing the cost of $6.75/ton to purchase, and fuel costs to haul AB3 rock, the Board approved the proposal.

Daniel Coltrane - Shafer, Kline & Warren
Ray Greece - Ace Pipe

They appeared before the Board regarding a Sanitary Sewer Evaluation Study for the Sewer District in Riverton and Lowell. They presented a plan to do video inspections and smoke testing of the sewer lines, as well as to locate and map all manholes if needed. In addition, each service connection will be inspected and photographed so residents can be notified if there is a potential problem with their service lines. The cost estimate does not allow for any cleanout that is needed in order to complete the testing.

They left a proposal and a sealed bid to be considered by the Board.

Chris Zimmerman - Cherokee County News Advocate

She appeared before the Board to present a written proposal for advertising for the 150th Anniversary of the Civil War Battle of Baxter Springs and the Attack on Ft. Blair being held in Baxter Springs on October 4-6, 2013. They are expecting thousands of visitors for this event. She asked if the Board would consider running an ad to invite visitors back to Cherokee County. She is printing 6,000 copies for the Historic Society to pass out to the visitors that will be attending the 3 day event.

A motion was made by Commissioner Hilderbrand to purchase a full page ad at a cost of $325 in the Cherokee County News Advocate. The motion was seconded by Commissioner Collins. The motion carried 3-0 with all voting yes.

RK

Alan Mauk - Quapaw Tribe

He appeared before the Board asking them to consider a letter of support to be sent to the Governor of Kansas to allow the Quapaw Tribe to extend gaming in the State of Kansas. They would like to do a revenue share with Kansas similar to the one they have with Oklahoma. It would provide funds to local entities, not the State of Kansas.

The Board took his request under advisement.

A motion was made by Commissioner Hilderbrand to amend the agenda for Janelle Bowman from 10:45 AM to 10:30 AM. The motion was seconded by Commissioner Napier. The motion carried 3-0 with all voting yes at 10:30 AM.

Janelle Bowman - The State Theater

She appeared before the Board regarding the State Theater that she purchased two years ago. It's being renovated to create an event center that will hold 400 people when finished. Her desire is to keep the building as historical as possible. She provided the Board with a business plan and would like to be considered for any funds available for economic development.

The Board took her plan under advisement.

A motion was made by Commissioner Collins to approve the Minutes of the September 9, 2013 BOCC Meeting as written. The motion was seconded by Commissioner Napier. The motion carried 3-0 with all voting yes.

Kevin Cure - Cherokee County Counselor

He appeared before the Board regarding legal issues concerning Cherokee County. He is wrapping up the last issues with the next tax sale for the county. He recommends the Board consider passing a resolution that would prevent the combining of parcels of property if any of them have back taxes due. He'll draft a resolution for them to consider.

A motion was made by Commissioner Collins to enter an Executive Session with the Board and Mr. Cure for a period of 10 minutes for the purpose of Non/Elected Personnel. The motion was seconded by Commissioner Napier. The motion carried 3-0 with all voting yes at 11:46 AM.

The meeting reconvened at 11:56 AM.

No action was taken as a result of the Executive Session

A motion was made by Commissioner Hilderbrand to recess for lunch until 1:15 PM. The motion was seconded by Commissioner Collins. The motion carried 3-0 with all voting yes at 11:57 AM.

The meeting reconvened at 1:15 PM.

Carol Stone, Sandra Friend - Shawnee Township

They appeared before the Board concerning issues facing the township. They have four cemeteries in the township and some of them need trees taken down, but their funds are limited. They are also in the process of sending letters to the taxpayers asking for their advice on the fate of the old Crestline School.

The Board took their concerns under advisement.

Commissioner Collins went on record to voice his opposition to the government closing of the Social Security Office in Pittsburg that services several counties in Kansas. Citizens are being instructed to go to Joplin, Missouri for services.

Commissioner Hilderbrand made a motion to adjourn until the next regularly scheduled meeting set for September 23, 2013 at 9:00 AM. The motion was seconded by Commissioner Collins. The motion carried 3-0 with all in attendance voting yes at 1:37 PM.

ATTEST: Resolved and ordered this day, September 23, 2013

Cherokee County Clerk

Commissioner

Commissioner

Commissioner

Cherokee County News Advocate

1242 Military Baxter Springs 620-856-4081, 620-429-2773

Dear Advertiser;
October 4th, 5th and 6th the Baxter Springs Historical Society is sponsoring a commemorative event marking the 150th anniversary of the Civil War Battle of Baxter Springs and the Attack on Ft. Blair. These are the actual dates of the battles in 1863. We are publishing a keepsake souvenir tab that will be inserted into the paper on September 25th, we will also run an extra 6,000 copies for the Historical Society to pass out to the visitors that will be attending the event those 3 days. This special full color tab will be printed on heavy high bright paper, and will include the schedule for the 3 days, a history of the battles, along with Civil War photos and history facts during that time.

They are expecting thousands of visitors to Baxter Springs for this Sesquicentennial Civil War Celebration. Attached with this letter are the different ad sizes that can be purchased for this special keepsake tab. The deadline for reserving space is September 16th. If you have any questions please feel free to call me.
Thank You

Publisher
Chris Zimmerman
Cherokee County News-Advocate
620-856-4081 phone
417-825-3745 cell
www.sekvoice.com

CIVIL WAR 150th

150TH COMMEMORATIVE OBSERVANCE OF QUANTRILL'S ATTACK ON FORT BLAIR & BAXTER SPRINGS MASSACRE

OCTOBER 4 - 5 - 6

SPECIAL KEEPSAKE EDITION TAB

SEPTEMBER 25, 2013

Full Page - $325 full color

1/2 Page - $200 Black & White
add $50 for color

1/4 Page - $150
add $50 for color

1/8 page - $75

AN EXTRA 6,000 WILL BE PRINTED TO BE HANDED OUT

Cherokee County
News-Advocate

Proposal

Crossland Construction Co., Inc.

P.O. Box 45 833 SE Avenue
Columbus, Kansas 66725
(620)429-1414
FAX (620)429-1017

PROPOSAL SUBMITTED TO:	PHONE:	DATE:
Cherokee County		11-Sep-13
STREET:	JOB NAME:	
E. Country Road	Recycle Concrete in Yard	
CITY, STATE AND ZIP CODE:	JOB LOCATION:	
Columbus, KS 66725	Columbus KS	
ARCHITECT	DATE OF PLANS:	JOB PHONE:
N/A	N/A	Contact Colby Mitchell 620-762-2220

Included: Crusher
Excavator
Conveyor
MOB and Set Up
Fuel
Labor

Guaranteed max price of $68,500 to be completed in 15 days based on 10,000 tons.
If we complete work in less than 15 days due to less tonage than anticipated $3,500 per day will be returned to the customer.
If it takes more than 15 days due to additional tonage an additional $3,500 per day will be added to the lump sum price. Crossland will work 10 hour days to complete the project.

Excluded: Loader, operator and fuel to move material
Water truck, operator, fuel and water
Breaker, hoe, operator and fuel to reduce size of large concrete to 24" or less

Terms: Crossland Construction Net 10 Days.

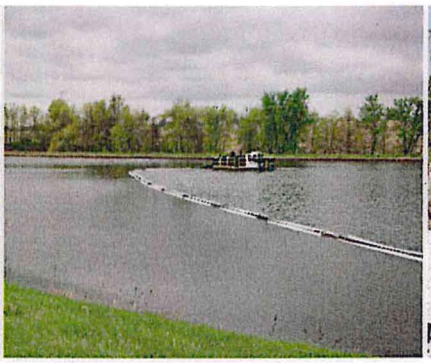
Authorized Signature: _____

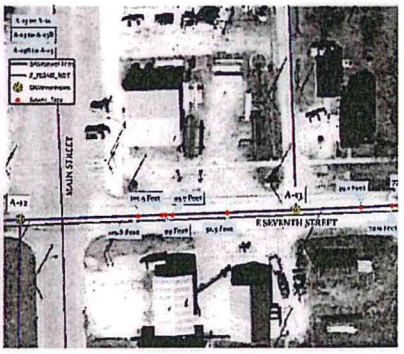
Acceptance of Proposal: The above prices, product, and conditions are satisfactory and are hereby accepted. We agree to make payment as outlined above.

Signature _____

Date of Acceptance:

Forming Partnerships.
Delivering Results.
www.skw-inc.com



Professional Services for Cherokee County, Kansas

Sewer Assessment and Repair

August 30, 2013

SKW®

Energy
Pipeline
Infrastructure
Development

SHAFER, KLINE & WARREN, INC.

September 16, 2013

Richard Hilderbrand, Commissioner
Cherokee County, Kansas
110 West Maple Street
Columbus, KS 66725

The Environmental Protection Specialists

Web Site: www.caryloncorp.com

A Carylon Company

Ray Greek
Division Manager

ACE PIPE CLEANING, INC.
4000 Truman Road
Kansas City, Missouri 64127-2290

Phone: (816) 241-2891
Toll Free: 1-800-325-9372
Fax: (816) 241-5054
Cell: (417) 483-6531

E-mail: rgreek@acepipe.com

Dear Mr. Hilderbrand:

Cherokee County, Kansas is undertaking this effort to make improvements to the City's sanitary sewer. You need a firm that can design your system to operate at optimum capacity while maximizing the use of available funds. Shafer, Kline & Warren, Inc. (SKW) is the right choice for you to achieve these goals. Our current experience with other similar-sized communities includes monitoring conditions of existing system facilities and implementing plans for improvements. We will actively apply this knowledge and lessons learned to Cherokee County's project with a team that has proven its ability to add value to your project.

We believe you will find SKW the best qualified consultant for the following reasons:

- **Experience:** In recent years, SKW has performed consultant services for more than 302 water supply projects, 390 wastewater projects, and served clients in finding solutions to more than 227 stormwater related issues. Our recent project history speaks to our experience and success with this type of project and our commitment to your community.

- **Project Team Experience:** SKW has assembled a project team that includes Ace Pipe Cleaning (Ace) and TREKK Design Group (TREKK) that has performed similar projects for similar sized cities in the Kansas – Missouri region. SKW recently finished a sewer evaluation and rehabilitation project for the City of Chetopa, KS that included CCTV and manhole inspections. This information was used to develop a rehabilitation plan with recommendations and estimated costs. SKW has worked on over 20 sewer cleaning and CCTV projects with Ace Pipe Cleaning including projects in Lexington, MO and New Florence, MO. SKW has also worked with TREKK on sewer evaluation projects that have included manhole inspections, smoke testing and CCTV including projects in Wellsville, KS and Grandview, MO. Our team will utilize those experiences to provide Cherokee County Sewer District with a coordinated effort to evaluate your sewer system.

- **Capacity and Availability:** The SKW team has the capacity to begin work immediately on the District's sewer evaluation study and I&I reduction plan. Our team has resources in several offices to draw upon to ensure that your project is adequately staffed and completed in a timely manner. We will be utilizing team members that have worked together in the past and will commit themselves to your project.

Enclosed you will find our response that demonstrates an ability to provide exemplary services and confidently manage the project. We welcome the opportunity to continue our relationship and further earn your trust. If you have any questions while reviewing our qualifications, or if you desire additional information concerning our capabilities, please contact us at 913-888-7800.

Sincerely,
Shafer, Kline & Warren, Inc.

Phil Burns, P.E.
Project Manager, Primary Contact

Daniel L. Coltrane, P.E.
Manager Water Resources, Secondary Contact

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Project Approach

INTRODUCTION

As Cherokee County initiates a system-wide Inflow and Infiltration (I&I) reduction program, the need for personalized, detail-oriented engineering services to provide the required technical solution is of the utmost importance. Shafer, Kline & Warren, Inc. (SKW) offers an engineering team that has developed a proven approach and will provide the Sewer District with the best in personalized service and highly qualified professional staff. We will meet and exceed the technical requirements of the project and deliver an appropriate engineering solution that is consistent with the District's desires and budget. The District's goal is to reduce wet weather related inflow and infiltration in the sanitary sewer system.

A key to our team's philosophy for the I&I Reduction Project is to study and coordinate the project components to be technically sound, economically feasible, and functionally consistent to meet the combined requirements of the Sewer District, KDHE and EPA. Key elements to this approach will be:

1. Maintenance of project budgetary costs and schedule tracking.
2. Communications with the District and public throughout the various work tasks of the project.
3. Regular progress and review meetings with the District Staff to keep them informed of the progress and direction of the evaluation and resulting recommendations.
4. Management of collected data and reports to be compatible with the District's electronic software.
5. Development of a rehabilitation plan that will reduce the I&I and that is appropriate for the District's budget.

The remainder of our project approach will highlight our team's approach and evaluations necessary to complete the I&I reduction project.

MEETINGS WITH CITY STAFF

We will begin this project with an initial kick-off meeting between the District and the project team. The purpose of this project meeting will be to discuss the District's project goals and objectives, establish lines of communication and a regular schedule for project meetings, and develop a team relationship with all concerned parties. During the course of the field portion of this project, the District's Project Manager will be kept informed of progress via telephone and/or e-mail updates. On a regular frequency, not to exceed bimonthly, progress meetings will be conducted by SKW with the City staff to ensure the project is progressing normally. Issues that will be included in these progress meetings will be progress since the last meeting, progress planned in the next period, contract issues, and status of unresolved issues. Prior to project completion, a final review meeting will be scheduled to discuss the draft submittals before the final submittals are delivered to the City.

The project will be conducted in three major phases as follows:

PHASE I – LOCATE EXISTING MANHOLES

In order to conduct a sewer system evaluation, it is necessary to have accurate locations of all of the manholes. A major problem in collection systems similar to the District's collection system is having record drawings that accurately indicate the location of the existing manholes. Many times, during construction, there are changes made to the location of manholes and these changes are not documented on the drawings. Another issue is manholes that have been buried and/or covered up with road surfacing or other site improvements. In order to most efficiently and economically conduct a sewer system evaluation, these manholes must be located.

SKW proposes to work with the District staff to field locate all of the manholes prior to beginning the CCTV and manhole inspections. SKW will provide a surveyor and field technician with a metal detector, GPS unit and tapes to assist the District in this effort. We estimate that approximately half of the manholes are visible and will be easily located. The manholes that are not easily found will require more effort:

- **Some of the manholes may be covered with leaves, brush or overgrown. These can be found by utilizing the original construction drawings with distances and bearings from a known manhole.**

- **Some of the manholes may be buried with soil. Utilizing distances and bearings from known manholes, metal detectors and shovels or back hoes, these can be located.**

- **Some of the manholes may be covered with road surfacing such as asphalt, concrete or gravel. These may be more difficult to find if they are in busy streets. Again, we will use distances and bearings from known manholes to determine approximate locations. Then we will use metal detectors to verify location and a shovels or backhoes to gain access to the top of the manhole. Depending upon the depth, a temporary patch may be required until the sewer field investigation is complete.**

SKW assumes that the District staff will be available to assist with locating manholes and will provide a backhoe and street patching for those manholes that are buried under soil or covered with road surfacing. The consultant costs for this phase of work can be reduced if the District wants to utilize their own staff to locate and spray paint the tops of all of the buried manholes.

SKW can provide in-house surveying services needed to verify manhole locations, manhole elevations, low floor elevations, property searches or easement preparation. After the manholes are located, SKW will follow up with GPS survey of the location and top elevation of the manholes. If GPS satellites are not attainable, we will conduct an offset survey. A good reliable survey is key to the design of sewer rehabilitation projects. Having survey services in-house will allow our team to control costs and preserve the integrity of the survey information.

PHASE 2 – CONDUCT FIELD INVESTIGATION OF SEWER SYSTEM

After all of the manholes have been located and identified on a map, then we would be ready to begin our field investigation of the condition of the sewer system. Ace Pipe and TREKK Design Group will work together to inspect the manholes, perform CCTV inspection of the inside of the pipe and smoke test the sewer system:

MANHOLE INSPECTIONS

For manhole inspections, we would sub-contract with TREKK for the manhole inspection services. This decision is based upon the number of manholes, the urgency for completion of the manhole inspections, and the best economic decision for the District. TREKK has successfully provided similar services with SKW for Wellsville, KS as part of a sewer rehabilitation plan.

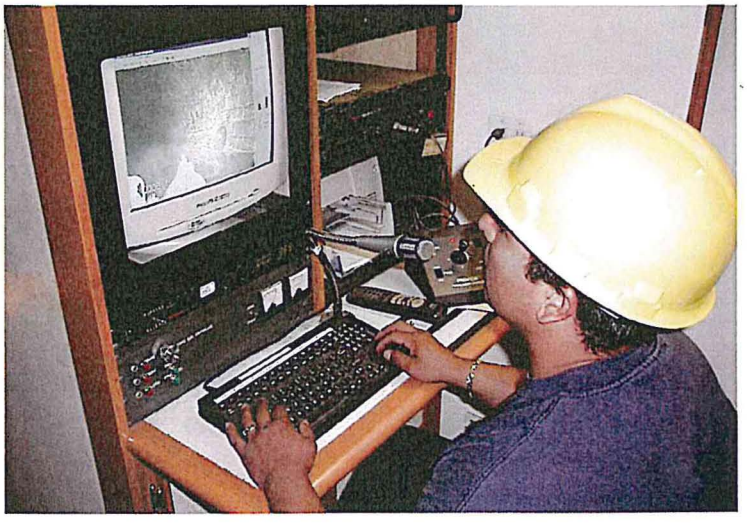
Depending upon the depth of the manhole, we would conduct a top side inspection of the manhole with the assistance of digital cameras, mirrors and high powered spot lights. Deep manholes will be inspected internally. Visual inspections will also be conducted of all incoming and outgoing pipes.

TREKK's manhole inspectors are trained in confined space entry and have all the necessary equipment to complete manhole inspections. Manhole inspections will be completed by a two-person crew, with one crew member being a National Association of Sewer Service Companies (NASSCO) certified Manhole Assessment and Certification Program (MACP) inspector. Manhole defects will be identified and ranked according to the MACP ranking system. Photographs will be taken of each of the pipe penetrations into the manhole and will be annotated and attached to the inspection record. All manhole inspections will be recorded on standardized field forms and will be input into an ACCESS database that is compatible with the District's electronic software.

CCTV SEWER MAIN INSPECTIONS

Due to the age of the sanitary sewers and reported problems, SKW proposes to televise all of the sanitary sewer with closed circuit television (CCTV). SKW will utilize the services of Ace Pipe to conduct the CCTV inspection of the sewer pipe. Ace Pipe owns and operates their own CCTV equipment and has employees who are NASSCO certified Pipeline Assessment and Certification Program (PACP) operators. Ace Pipe successfully provided similar services with SKW at Sunrise Estates as part of the facility study for Boone County Regional Sewer District.

The CCTV inspection will be conducted utilizing a camera with pan and tilt capabilities. The camera will be equipped with a footage meter so that the location of the camera and point of observation will be known at all times with reference from the starting manhole. The camera will move at a uniform rate through the sewer stopping when necessary to insure proper documentation of the sewer condition. Pipe defects will be identified and ranked according to the PACP ranking system. The report will also include any notes from the inspector that would be a concern for rehabilitation of the sewer main and will be annotated and attached to the inspection record.
Each line segment will have a digital video made on DVD with a report detailing the condition (pipe run report). The video submittal will be capable of playing on Windows platforms. All of the data from the CCTV inspections will be recorded and input to an ACCESS database that will be compatible with the District's electronic software.



SMOKE TESTING

TREKK will conduct smoke testing of the sewer system in the study area to identify potential sources of inflow into the sanitary sewer system. Potential inflow sources of concern include roof drains, cleanouts, miscellaneous drains, lateral connections, sewer pipe defects and storm manholes and pipes.

Each positively identified source of smoke will be documented photographically and located and referenced to allow it to be marked for future repair or evaluation. The data collected from the smoke testing will be used to identify potential I&I sources from public and private sources.

Smoke testing sewers in urban areas requires significant advance planning as well as public notification prior to executing the work. Our team will prepare a smoke testing plan for the District to review at the kick-off meeting. In addition to standard operating procedures, the smoke testing plan will include a schedule for conducting an initial meeting with the Public Works, Fire, and Police Departments of the District to get approval of the standard

operating procedures. This meeting will be at least 30 days prior to initiating the smoke testing. The smoke testing activities will include a minimum of 48 hours (longer if required by the District) advance notification to all residents in the study area. Notifications will be made by placement of door hangers on homes and businesses. The door hangers will include contact information, a description of the testing procedure, and instructions to fill infrequently used traps with water to prevent smoke from entering structures via lateral service lines. In addition to the door hangers, we will prepare draft press releases, prepare interim progress reports and coordinate daily with the applicable District Departments.

Photographs will be utilized to supplement smoke testing observations. All of the data from the smoke testing inspections will be recorded on field forms and input to an ACCESS database that will be compatible with the District's electronic software.

DYED WATER TESTING

If required, our team can provide dye water tests in order to verify: defects identified in CCTV inspections and smoke testing activities; service lateral connections; storm sewer cross connections; and, private property source I&I connections (roof drains, area drains, etc). This will be accomplished by washing fluorescent dye directly into the identified source and running an adequate amount of water to ensure that the dye has a sufficient amount of time to be observed in the downstream manhole. The presence of dyed water in the downstream sewer system verifies the existence of an I&I source connection.

Photographic records will be made of each confirmed source identified during the dyed water test. Detailed notes of all investigations will be kept and turned into the District with the final report. All data collected during field investigations will be entered in an ACCESS database structure compatible with the District's electronic software.

PHASE 3 – PREPARE AN I&I REDUCTION PLAN

Following completion of the field investigation, SKW will review the field data and begin evaluating the condition of the existing sewer system. This information will be utilized to prepare an I&I reduction plan for the District that will include a summary of the sewer condition, alternatives for repair/rehabilitation of the sewer, prioritization of the recommended repairs/rehabilitation and an estimate of the probable construction cost.

The I&I Reduction Plan will include:

DATA MANAGEMENT

SKW will provide the District with paper and electronic copies of all inspection reports, data and video prepared as part of the I&I study. We will provide the electronic inspection reports and data in an ACCESS database format that is compatible with the District's electronic software. All photos that are taken as part of this study will be neatly organized and provided in .jpg format.

REHABILITATION RECOMMENDATIONS

SKW will prepare a summary and prioritization of the I&I source defects that are identified in this study. The source defects will be prioritized based upon the amount of infiltration expressed as gallons per minute. The defects will be organized in a tabular format that indicates the infiltration rate and cost to remove infiltration along with a running total of I&I removed and the cost of I&I removal. From this information, a "knee of the curve" graph will be prepared to determine the break point for cost effective defect repairs.

SKW will compile the information collected as part of this study into an I&I reduction report. The report will summarize the monitoring and inspection activities and make recommendations for rehabilitation of the sanitary sewer system. The report will include a prioritization schedule for sewer rehabilitation, a plan for reducing I&I and an estimate of probable construction cost for the sewer rehabilitation. A draft copy of the report will be submitted for review and approval by the District. Following a draft report review meeting and resolution of comments, final copies of the report will be submitted to the District.

REHABILITATION DESIGN & SPECIFICATIONS

After the I&I Reduction Plan is completed, SKW can provide design services for implementing the repair/rehabilitation plan . If required, SKW will prepare and submit a bid ready package of technical specifications and a bid form to implement the sewer pipe rehabilitation recommendations approved in the I&I Reduction report. District standard specifications will be used where appropriate and other technical specifications will be prepared as needed. SKW will also prepare an estimate of probable construction cost estimate.

Relevant Experience

SUNRISE ESTATES WASTEWATER IMPROVEMENTS - BOONE COUNTY, MO

Boone County Regional Sewer District | Mr. Thomas Ratermann, P.E. | 573-443-2765

The Boone County Regional Sewer District (BCRSD) hired SKW to investigating options for wastewater improvements in the Sunrise Estates neighborhood, located east of the City of Columbia, MO. The subdivision utilized two separate lagoons and an activated sludge plant for wastewater treatment. The facilities had been constructed 20 to 30 years earlier by the developers. These systems eventually became overloaded, especially when wet weather exacerbated the severe Inflow and Infiltration (I&I) problems in the collection system. The initial project had concentrated on the older portion of the collection system. In order to improve funding eligibility, the scope was later expanded to the entire subdivision and a nearby mechanical plant that had recently been conveyed to the BCRSD. All phases of the project were funded through the State Revolving Fund (SRF) loan program.

Under **Phase 1**, SKW completed two periods of initial flow monitoring to quantify wet weather flows. A number of treatment options were evaluated, including natural systems, activated sludge treatment, and connection to the City of Columbia collection system. Conveying the flow to the City became the chosen option. The initial Facility Plan was completed in 2002. SKW later prepared several addenda to make subsequent project phases also eligible for SRF financing.

To fulfill the connection agreement with the City of Columbia, a comprehensive Sanitary Sewer Evaluation Survey (SSES) study was performed and followed up with sewer rehabilitation design.

Under **Phase 2** of the project, the SSES included smoke testing and televising the sewage collection system as well as a visual evaluation of the manholes. In order to identify lines that may require replacement, SKW performed field surveys to determine the slope and capacity of each main. SKW further conducted home inspections to identify those that had sump pumps and foundation drains connected to the sanitary sewer. The study and inspection results were used to identify and quantify the defects and illicit discharges in need of repair and to determine which repairs may best be performed by a contractor and which by District forces.

Phase 3 Construction: South Fork of the Grindstone

The third phase of the project consisted of realizing the chosen option from the Facility Plan - connection of the Sunrise Estates neighborhood to the Columbia's collection system. In 2006, SKW was hired by the BCRSD to design approximately 10,200' of gravity interceptor sewer to transfer the wastewater from the two aging mechanical plants. The interceptor sewers ranged in size from 12" to 24". Related services provided by SKW included the preparation of easement descriptions, permitting, coordination of a cultural resources survey and construction administration services. The project was a joint effort between the City and the BCRSD, designed to serve existing and future developments on both sides of the city limits.

Phase 4 Construction: Sunrise Pump Station Interceptor aka North Fork of the Grindstone

Similarly, the fourth phase of the Facility Plan covered the addition of a gravity sewer between the western side of the Sunrise Estates subdivision and an existing City of Columbia sewer. This phase eliminated a lift station and was designed by SKW to serve developments around the city limits. Like Phase 3, this was a joint effort be the City of Columbia and the BCRSD. SKW facilitated coordination of the project, permitting and related services. Construction was completed in 2011.

Phase 5 Construction: Sunrise Estates Rehabilitation

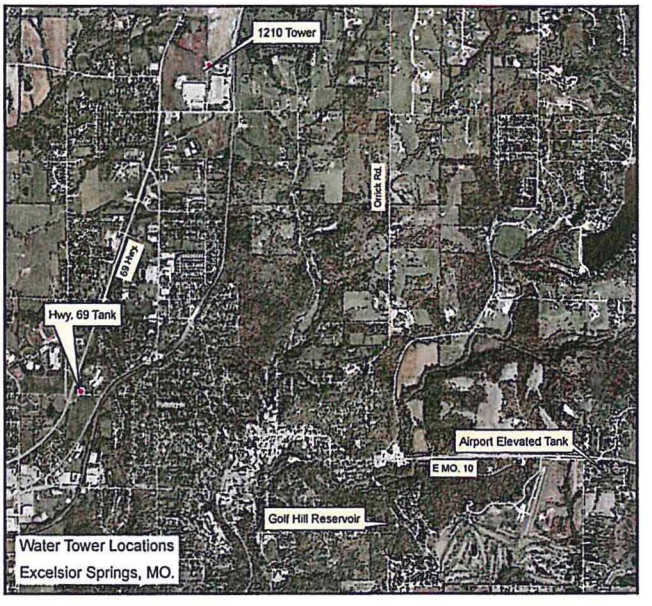
The fifth phase consisted of performing the sewer collection system repairs identified during the SSES. Homeowners were required to repair their own service lateral connections to the main, if found to be defective. System rehabilitation performed by the District included a combination of manhole and pipe lining, excavated spot repairs, manhole replacements, and pipe-to-manhole seal repairs. Construction of the sewer rehabilitation phase was completed in 2009. Follow-up flow monitoring performed in 2010, showed a significant reduction in I&I. Peak hourly flows following rainfall events were reduced 35% in the northeastern portion and 73% in the southern half of the subdivision.

SEWER IMPROVEMENTS - EXCELSIOR SPRINGS, MO

City of Excelsior Springs, MO | Tom Wall | 816-630-0755 x 224 | twall@ci.excelsior-springs.mo.us

The Utility Services Department of Excelsior Springs, MO, contracted with SKW to provide professional engineering and surveying services for Water System and Wastewater Collection System Improvements. The scope of this project included an analysis of their wastewater collection system, recommendations for sewer rehabilitation, designing sewers for non-sewered areas, surveying and construction phase services. These are being authorized as separate tasks by the City. To date, the City has authorized tasks for and SKW has completed or nearly completed the following individual tasks under this contract with the City:

- **Wastewater Collection Systems Facility Plan.** SKW was authorized to develop a long-term comprehensive wastewater sewer evaluation, an inventory of the collection system and a rehabilitation program to upgrade its sanitary sewer collection system. Ten temporary flow meters and two rain gauges were installed during a 60-day flow monitoring period. The field inspection of the collection system included inspection of 1,280 manholes, smoke testing of 312,000 l.f. of sewer, and CCTV inspection of 62,500 l.f. of sewer. The results of the data analysis were incorporated into a comprehensive facility plan with recommendations and costs for rehabilitating the collection system.
- **Seybold Road Sewer Extension.** SKW has completed the survey and 80% of the design of a combination low pressure sewer and gravity sewer system for non-sewered areas in the southeast area of Excelsior Springs. The low pressure sewer will be installed in the road right-of-way except where it crosses a private property from Seybold Road to Highway N. The gravity sewer extension will require approximately 22 easements on private properties. The scope of work includes design and layout of 9,700 l.f. of low pressure sewer and 5,200 l.f. of 8" gravity sewer.
- **Highway H Sewer Extension.** SKW has completed the survey and 80% of the design of a gravity sewer system for non-sewered areas in the south central area of Excelsior Springs except two small areas that require low pressure sewers to pump over the ridge line to the gravity sewer. The new sewers will be installed in the road right-of-way except along Highway H. The gravity sewer along Highway H will be installed on private property outside the MoDOT right-of-way. The gravity sewer extension will require approximately 10 easements on private properties. The scope of work includes design and layout of 4,700 l.f. of 8" gravity sewer and 1,100 l.f. of low pressure sewer.
- **Highway 92 Sewer Extension.** SKW has completed the survey and 80% of the design of a sewer, extension for non-sewered areas in the northern area of Excelsior Springs. The scope of work includes 3,800 l.f. of 8" gravity sewer, 1,600 l.f. of low pressure sewer and a pump station. The new sewers will be installed in the road right-of-way where possible and will include a MoDOT highway crossing and 10 new permanent easements.
- **Highway 69 Sewer Improvements.** SKW has begun survey, design and layout of a new sanitary sewer system to service for a planned expansion on the west side of Excelsior Springs. The improvements will consist of 2,500 l.f. of new 15" gravity sanitary sewer along the north side of Highway 69 Highway. The new sewer will connect into the existing sanitary sewer interceptor along Williams Creek.



SANITARY SEWER EVALUATION STUDY & COMPREHENSIVE REHABILITATION - CLARENCE, MO

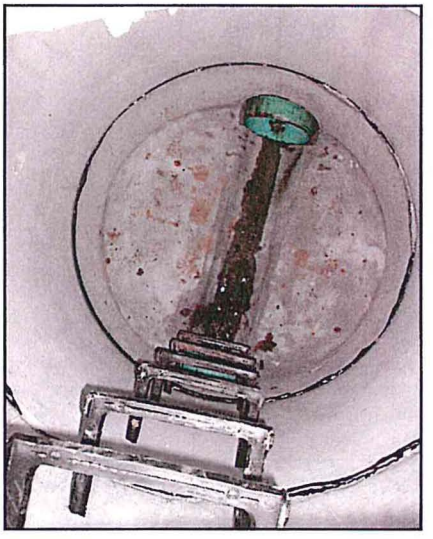
City of Clarence, MO I Ms. Cindy Bowman, City Clerk/Director - Economic Development I 660-699-2378

The sanitary sewer system of the City of Clarence, MO, experienced severe Inflow and Infiltration (I&I) problems which frequently caused surcharging in the collection lines and overloaded the treatment system. In 2007, SKW reviewed a flow monitoring and closed-circuit television (CCTV) report for 16,000 l.f. of clay pipe, mainly located in the oldest section of the sewer system. A lack of grant funding in relation to project size prompted the expansion of the project to the next oldest segment of the collection lines.

The follow-up study was conducted in 2008 and included a brief field survey by SKW to determine the locations, elevations, and conditions of the manholes, and a CCTV inspection of 14,000 l.f. of clay pipe (SKW coordinated the televising, which was performed by a subconsultant). The project also included lagoon sludge measurements. The information from both studies was combined into one comprehensive report, which included recommendations for improvements based upon the locations, sizes, slopes, and conditions of the pipes and manholes. In 2009, SKW completed a survey and plans and specifications for the rehabilitation project. This included over 160 point and service connection repairs, the replacement of inadequate main lines, and internal cast-in-place lining or joint grouting for others. Mainline construction consisted of over 16,700 l.f. of 8'' through 12'' line. More than 11,000 l.f. of pipe and nearly 350 manholes were to be lined. This project also included over 2,700 l.f. of gas main replacements and removal of sludge from the City's treatment ponds.

SKW used the final report to assist the City in obtaining project funding. Clarence was approved for a grant from the Rural Development Program (RD) of $765,000, an RD loan in the amount of $2,000,000, and a grant through the Community Development Block Grant (CDBG) of $500,000. The City had obtained voter approval to sell $2,000,000 worth of Revenue Bonds to cover project cost.

While Clarence was already approved for funding through RD and CDBG, SKW helped the City apply for funding through the American Recovery and Reinvestment Act of 2009 (ARRA), because this source offered a chance to obtain 75% grant money. The final project scenario with ARRA funding resulted in a reduction of more than $1,000,000 in loan amount over the MWWRC funding while rehabilitating the entire older sewer system and also including lagoon sludge removal.

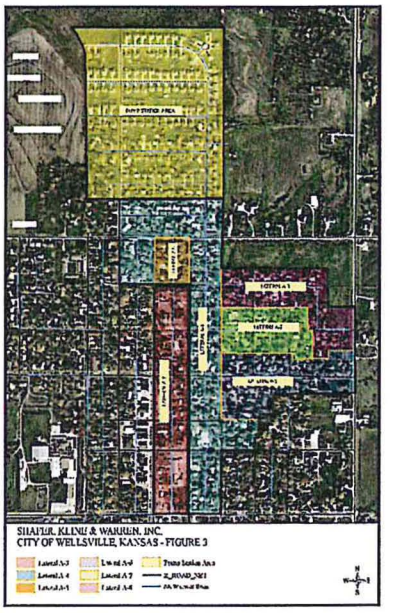


SANITARY SEWER INVESTIGATION & REHABILITATION - WELLSVILLE, KS

City of Wellsville, KS I Mr. Mike Brungardt, P.E., City Engineer I 785-883-2296

SKW was retained by the City of Wellsville, KS, to investigate a critical gravity sewer line in the alley between Maple and Locust Streets, from 1st Street to 7th Street. TREKK Design Group, LLC was retained to complete the field investigation work. The work included surveying the existing gravity sewer location, depth, and pipe slopes. The gravity lines were cleaned and televised to assess the condition of approximately 4,800 l.f. of gravity sewer line and 20 manholes. Deficiencies were located, identified, and prioritized. The sewer was analyzed to determine the hydraulic capacity and compared to the wastewater flows from the developed service area.

One or more rehabilitation methods were identified to restore the sewer lines and manholes to good condition and optimal hydraulic capacity. A report included the findings, recommendations for rehabilitation, and the estimated project cost was prepared and submitted for approval. The rehabilitation design, bid and construction occurred in phases as the City's annual budget allowed.

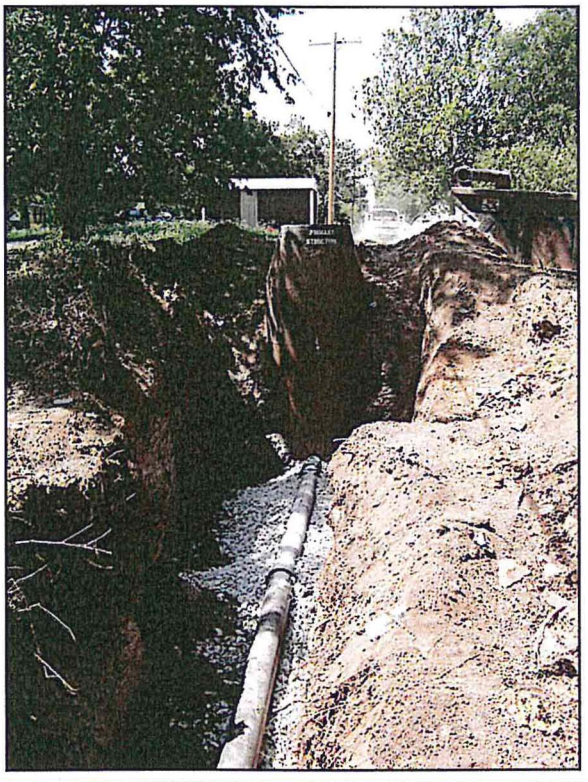


WASTEWATER COLLECTION & TREATMENT IMPROVEMENTS - CHETOPA, KS

City of Chetopa, KS I Mr. Ron Wood I 620-236-7511

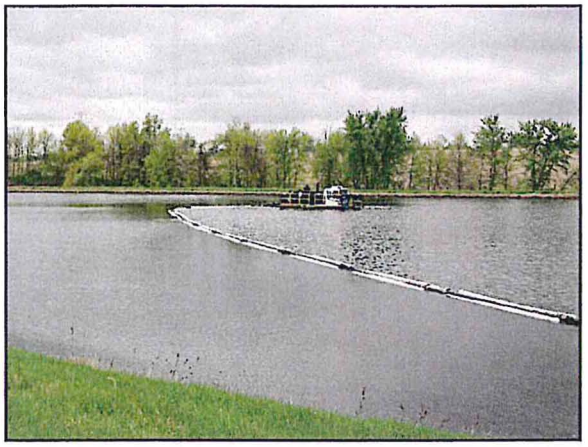
The City of Chetopa's three-cell, waste stabilization lagoon had become overloaded with accumulated sludge, trees grew on eroded embankments and wave actions had caused serious erosion of the dikes. The collection system had a high rate of infiltration and inflow (I&I) with some line collapses, the lift station pumps were worn out, and replacing pumps in several lift stations required entry into the wet well.

Initially, SKW prepared a preliminary engineering report (PER) to: identify necessary repairs, make recommendations and provide cost estimates. The PER was also used to successfully secure a CBDG grant ($500,000) and Rural Development loan ($3,000,000) and to determine rate increases to pay for the improvements.



Collection system improvements included: designing modifications to the structure of the main lift station, replacing three pumps, adding VFD drives and replacing emergency generator. Two other lift stations were replaced with new, larger wet wells featuring new pumps and controls. An additional lift station and 1750' of 4" force main were added to serve an RV park in the northeast corner of the City. Three individual grinder pumps were added to the system. Other changes included replacing 1,430' of 4" force main and approximately 33,250' of 8" and 10" sewer pipe, 63 manholes and raising 27 manholes.

SKW also provided construction administration and observation services for this $3.5 million project was completed in summer 2012.



SKW evaluated the City of New Florence's wastewater collection and treatment system to develop a plan to allow the City to meet its non-discharge NPDES permit requirements. The City treatment system consists of a single storage pond followed by two independent center pivot land application fields. The City had recently purchased one of the application sites, but the lease on the other site expired and this area was not available for application of wastewater. To compound the problem the sewer system experienced severe Inflow and Infiltration (I&I) problems. As a result the pond frequently discharged to the adjacent creek. In addition, the receiving stream was located so close to the pond that high stream flows undermined the berm of the storage pond. This problem would have led to eventual failure of the berm.

The preliminary engineering report investigated several options to bring the wastewater system into permit compliance and to mitigate the erosion problem. During the design process the improvements were divided into three sub-projects: Sludge removal from the storage pond, streambank stabilization and collection system rehabilitation.

SKW assisted the City in obtaining $3,000,000 in funding through the American Recovery and Reinvestment Act of 2009 (ARRA); 50% of this was grant money. The City did not have to raise rates to fund the project.

Sludge Removal: This project consisted of the removal and disposal of sludge accumulated in the wastewater stabilization lagoon. Nearly 1,000,000 gallons (228 dry tons) were removed and applied to nearby farmland to augment the soil with nutrients. As a result, the City has gained valuable storage space in the pond. The sludge was removed in April 2010.

Sewer Rehabilitation & Treatment System Upgrades: The preliminary engineering report found that the volume of wastewater that could be land applied was limited by the capacity of the existing pump station rather than soil parameters. During the design stage, the capacity of the pump to the City owned application site was doubled and the center pivot was retrofitted to handle the larger flow. Electricity to the site was upgraded accordingly.

SKW further determined that the flow to the treatment system could be greatly reduced by rehabilitating the collection system. After conduction a detailed examination of over 100 manholes and closed-circuit televising of over 40,000 l.f. of collection lines, SKW prepared the plans and specifications for the repairs. The rehabilitation consisted of cast-in-place lining of approximately 16,100 l.f. of pipe, numerous service tap and collection line point repairs, replacement of approximately 1,700 l.f. of sewer main, and lining, grouting, and various other repairs to most of the City's manholes.

The project was completed in October of 2010. The I&I was reduced so much that the City is now able to dispose of all of the wastewater on the land it owns, without the use of the formerly leased second site.

WASTEWATER SYSTEM IMPROVEMENTS & MANHOLE INSPECTIONS - ATLANTA, MO

City of Atlanta, MO I Ms. Janis Diamond, City Clerk I 660-239-4890

Wastewater System Improvements: The City of Atlanta, MO, a town of 450 in Macon County, hired SKW to prepare a preliminary engineering report to address the new permit limits for the City's wastewater lagoon, including dissolved oxygen, fecal coliform and ammonia. The report provided an in-depth analysis of full-cycle cost of several discharging and non-discharging systems. The existing collection system was evaluated to determine the extent of needed repairs. SKW performed flow monitoring and manhole inspections, and through a subcontractor, closed-circuit television inspection of the sewer pipes.

SKW has further assisted the City in obtaining $1,070,578 in funding through the American Recovery and Reinvestment Act of 2009 (ARRA). $969,578 of this amount came from Green Reserve Funds. The City received 50% grant money. Funding is projected to cover all project expenses without an increase in sewer rates.

SKW also provided design and construction services to convert the existing lagoon outfall structure into a pump station and construct approximately 4,000 l.f. of forcemain to a 120 sprinkler head land application system. Also included is the rehabilitation of the sanitary sewer collection system. This includes 123 tap and sewer main point repairs, 85 manhole repairs, and lining of nearly all of the City's manholes (71 are to be lined).

Manhole Inspections: SKW was selected to perform a visual inspection of the manholes and lampholes within the City limits and log the observation on the appropriate manhole inspection sheet. The inspection sheet showed manhole number, diameter, depth, elevation in relation to grade, materials, pipe connection information, and manhole/ lamphole condition. SKW will record one flow depth in the center of each manhole, except where there is an obvious difference in invert elevations of incoming and outgoing sewer connections. In these cases, SKW will measure and record additional invert depths for the deviating line elevations. The inspection records will not include photographs.

WASTEWATER FACILITY PLAN WITH I&I STUDY - LEXINGTON, MO

City of Lexington, MO I Mr. Jerry Brown, Mayor I 660-259-4633

SKW completed and submitted a comprehensive wastewater system Facility Plan to the Missouri Department of Natural Resources for the City of Lexington, MO. The plan included expanding the collection system in four areas to serve houses with on-site systems, as well as serving areas to be annexed into the City of Lexington.

SKW'S work included developing maps, plans, and profiles and combining aerial photography and topographic contours for 8- to 12-inch sewer line improvements. SKW recommended design involved new gravity sewers, force mains, and lift stations to service residential areas. This project also included conducting a comprehensive infiltration and inflow (I&I) study to develop recommendations to rehabilitate the City's existing collection system. Total improvements are estimated to be $3.2 million.

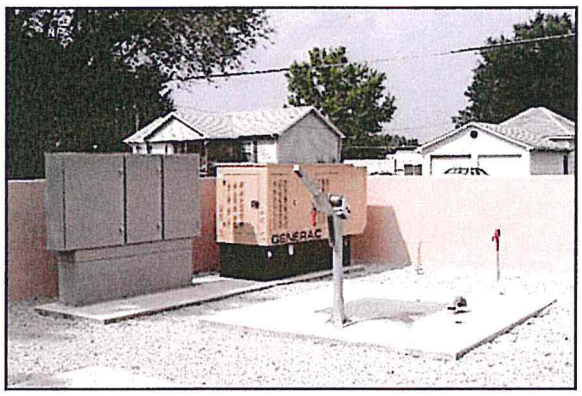
CALAMITY CREEK SEWER IMPROVEMENTS - OLATHE, KS

City of Olathe, KS I Ric Gere I 913-971-9119 I rgere@olatheks.org

Due to the severity of structural deterioration and ongoing operations and maintenance issues in the area of Calamity Line Park from Cedar Street to Santa Fe Street, rehabilitation work was evaluated by SKW. The condition of the sanitary sewer lines created an inflow/infiltration (I&I) problem for the City. The first task order evaluated the hydraulic capacity and elevation feasibility of abandoning an existing 12" sanitary sewer and redirecting the flow through adjacent larger sanitary sewer lines. SKW evaluated relocating an existing sanitary sewer creek crossing which required an evaluation of the condition of the bottom and banks of the creek in the vicinity of the abandoned and new crossing. SKW is designing sewer extensions in three areas as part of the abandonment of the 12" sanitary sewer.

WATER & WASTEWATER SYSTEM IMPROVEMENTS - TRACY, MO

City of Tracy, MO I Julie Thomas I 816-858-5555 I CityofTracyMO@kc.rr.com



For over 10 years, the City of Tracy, MO has retained SKW to provide a variety of engineering services including, but not limited to, water system, wastewater system, stormwater, survey, transportation, structural, and GIS improvements. SKW has been involved in a range of projects including:

Wastewater System Improvements. SKW assisted City staff in responding to several infrastructure needs which included abandoning a package wastewater treatment facility plant by proposing approximately 5,920 l.f. of 8" gravity sewer system, a submersible pump station with a standby generator and a flood wall, and approximately 2,760 l.f. of 4" force main (including a bored river crossing) to convey wastewater to Platte City for treatment. That collection system was constructed and provides reliable sewer service for the entire City.

SEWER SYSTEM IMPROVEMENTS - GARDEN CITY, MO

City of Garden City, MO I Earsholl Brown I 816-862-8208 I ebrown1@fairpoint.net

SKW revised a previous Preliminary Engineering Report (PER) to include a fourth option to improve the City's collection system and reduce Infiltration and inflow (I&I), as well as address capacity and maintenance issues. SKW provided the design, bid and construction phase services for the improvements; based on Alternative #4 of the PER. The project included abandoning Lift Station #2, install approximately 2,320 feet of 12" gravity sewer to the northeast under Highway 7, installed a new submersible pump lift station with a 1,300 foot long 6" force main installed to the influent box of the existing WWTP. The lift station includes a wet well with two submersible pumps with a firm capacity of 450 gpm, a valve vault, an emergency generator, and connected to the new SCADA system

These system improvements effectively separated 1/3 of the total wastewater flow through the new 12" interceptor sewer, lift station and 6" force main into the WWTP. The city-wide system capacity was enhanced by replacing an old lift station with a larger lift station and increased the system reliability and flexibility to handle future flows from new development. The project was funded through the State Revolving Loan funds and ARRA stimulus funds.

Project Facts:

- Start-up: 2010
- Total Project Cost: $931,000 (estimate)
- Funding Type: SRF loan and ARRA stimulus funding
- 2,550 l.f. of new 12" interceptor sewer
- New lift station with submersible pumps (two pumps at 425 gpm)
- Stand-by generator
- 1,600 l.f. of 6" force main

Good JUDGEMENT COMES

"TREKK will meet and exceed your project goals of reducing I/I by 35%" **- Cliff Cate, Project Manager**

TREKK has been a leader in the development of successful Inflow and Infiltration (I/I) reduction programs for a variety of clients facing similar issues. We are the recognized I/I expert, with a master plumber leading private I/I programs for cities and municipalities.

We are the only firm in the Midwest region that can undertake an I/I Reduction Program from start to finish with a single source of contact. TREKK has completed over 150 sewer inspection projects throughout the Midwest, and we have the people, equipment, knowledge, expertise and understanding to proactively hit the ground running and deliver a successful program.

Sewer Utility - Inflow and Infiltration Reduction Program

VIDEO Part 1 - What is inflow and infiltration?

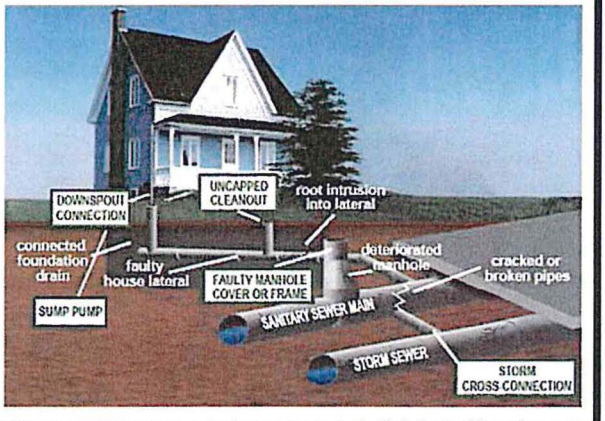
Learn more about inflow and infiltration with this *informative video* produced by the City Channel in cooperation with City of Columbia Public Works Department and Trekk Design Group.

What is Inflow and Infiltration?

Inflow and Infiltration (I&I) are terms used to describe the ways groundwater and stormwater ("clear water") enter the sanitary sewer system.

- Shown above is a sanitary sewer overflow during a rain event. -

Inflow: Inflow is stormwater that enters the sanitary sewer system directly through connections such as roof downspouts, driveway drains, sump pumps, and cross connections with storm drains. Peak inflow can occur during heavy storm events or snow melts causing sanitary sewer surcharges resulting in sanitary sewer overflows and basement backups.



Infiltration: Infiltration is groundwater or groundwater that is influenced by surface water that enters sanitary sewer pipes and manholes through holes, breaks, joint failures, connection failures and other openings. Infiltration quantities often exhibit seasonal variation in response to groundwater levels. Storm events can trigger a rise in groundwater levels and increase infiltration flows. The highest infiltration flows are observed following significant storm events or following prolonged periods of precipitation.

VIDEO Part 2 - What is being done to find a solution?

Learn more about inflow and infiltration with this *informative video* produced by the City Channel in cooperation with City of Columbia Public Works Department and Trekk Design Group.

TREKK has demonstrated our ability to successfully simplify complex technical, legal, regulatory, and institutional issues to produce clear, concise, cost-effective, and implementable recommendations. Our professionals provide cost-effective solutions that utilize existing infrastructure to the greatest extent possible while limiting alternatives and capital expenditures to only the most reliable and easy-to-implement options. Over the past 8 years, TREKK has inspected over 50,000 sewer structures, including manholes, sewer mains, and service laterals. In addition, TREKK has conducted over 5,000 building inspections and smoke tested over 2,000,000 linear feet of sewers. Results from these inspections have led to the successful remediation of both public and private I/I sources saving our clients millions of dollars in relief sewers, operation and maintenance and treatment costs.

Recently, TREKK has produced I/I reduction programs for the cities of Belton, Columbia, Grain Valley, North Kansas City, Springfield, Missouri, as well as the city of Hiawatha, Kansas, Johnson County Wastewater, and the Unified Government of Wyandotte County/Kansas

FROM EXPERIENCE

City, Kansas. Shown in the table at right is a representative listing of our I/I reduction program experience.

SIMILAR WORK PERFORMED BY TREKK IN THE LAST 8 YEARS

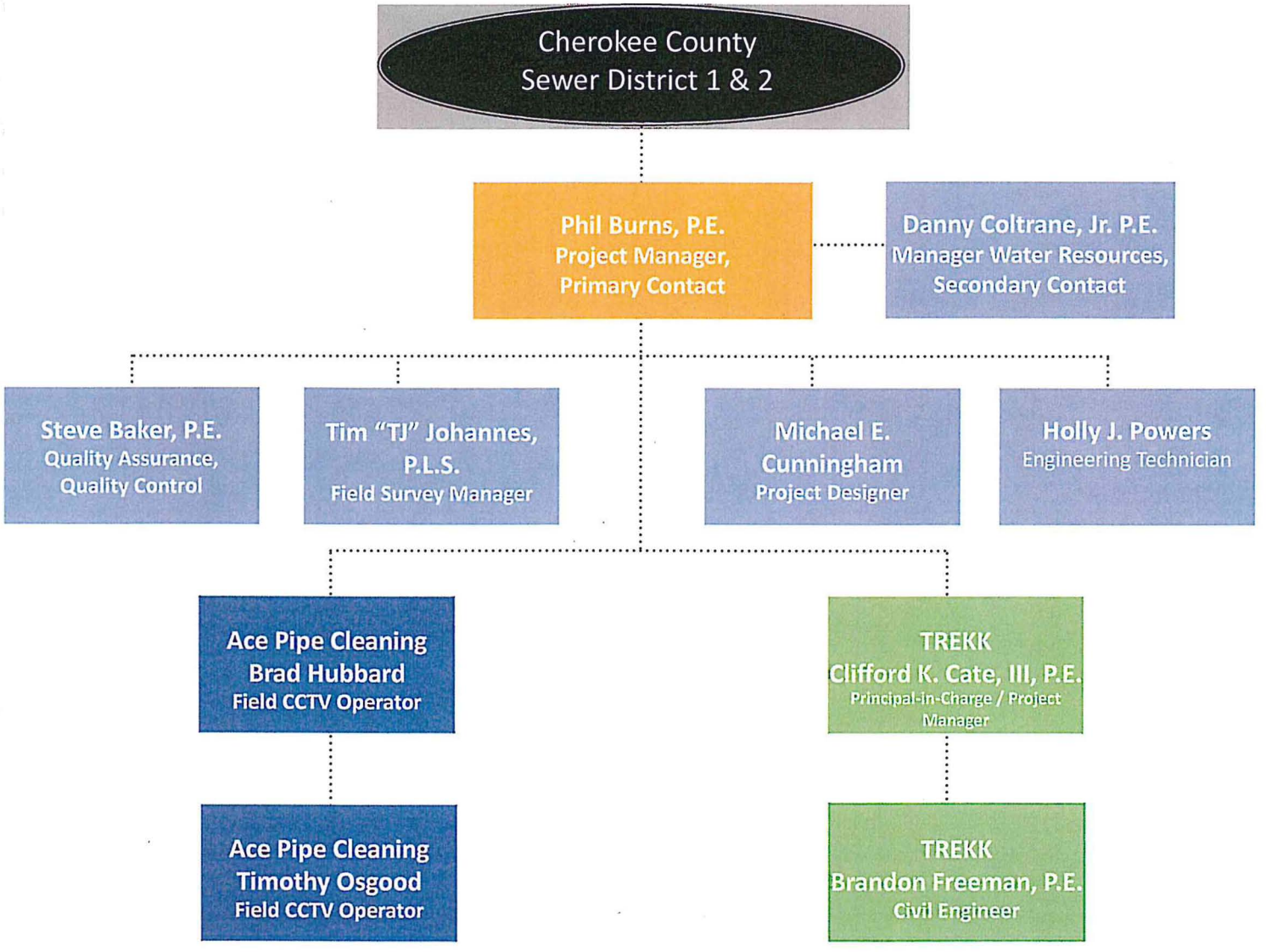
Project	Public					Private		
	Flow Monitoring	Manhole Inspections	Smoke Testing	Surveying	CCTV Inspections	Dyed-Water Testing	Building Inspections	Service Lateral Inspections
Arnold, MO - City Wide SSES	X	X	X			X	X	
Belton, MO – Inflow & Infiltration Study		X	X		X	X	X	X
Blue Springs, MO - I&I Assessment and Reduction Plan	X	X	X	X	X	X		
Blue Springs, MO - 2008 Inflow & Infiltration Study	X	X	X			X	X	
Blue Springs, MO - 2010 Inflow & Infiltration Study	X	X	X			X	X	
Boone County, MO – Sunrise Estates SSES		X	X					
Brighton, CO – Phase II I&I Reduction Study	X	X	X	X				
Carrolton, MO - CMOM & Inflow & Infiltration Study	X							
Columbia, MO - Pilot Inflow & Infiltration Study		X	X			X	X	X
Columbia, MO - Sewer Lateral Locate & Inspection Program							X	X
Columbia, MO Sanitary Sewer Manhole Inspection and Rehabilitation		X	X		X		X	X
Excelsior Springs, MO – Pilot SSES		X	X					
Fort Leonard Wood, MO - Inflow & Infiltration Study	X	X						
Grain Valley, MO - I&I Assessment and Reduction Plan	X	X	X	X	X	X		
Grain Valley, MO – Phase I, II, & III SSES		X	X		X	X	X	X
JCW I&I Pilot Project		X	X		X	X	X	X
JCW Granthurst Pump Station I&I Study		X	X				X	X
Kansas City, MO - Brookside Private I&I Repair Verification							X	
Kansas City, MO – CSO/SSO Control Program		X	X	X		X		
Kansas City, MO - Line Creek Pilot Inflow & Infiltration Study					X			X
Kansas City, MO - MBR Green Solutions Pilot Project		X	X		X	X		X
Kansas City, MO - Investigation of Pump Station Tributary Sewers		X	X		X	X		X
Kansas City, MO –Arrowhead Stadium Study		X		X	X	X		
Lee's Summit, MO - Inflow & Infiltration Study	X							
Louisville, KY - SSES							X	
North Kansas City Service Lateral Program				X				X
Offutt Air Force Base, NE - Service Lateral Inspections								X
Omaha, NE - CSO/SSO Basin Inspections	X	X	X	X	X	X		X
Omaha, NE - Rockbrook Area Sewer Investigation	X	X		X			X	X
Omaha, NE - (5) Sewer Separation Projects	X	X		X			X	X
Parkville, MO – SSES Program		X	X	X	X			
Plattsmouth, NE - Sewer Investigation Study	X	X		X	X			
Richmond, MO - Post Rehabilitation Flow Monitoring	X							
Rock Creek Public Sewer District, MO - Inflow & Infiltration Study	X	X	X		X	X		
St. Joseph, MO Sewer Location and Inspection	X	X		X	X			
St. Louis MSD - Manhole GPS/Inspection Program		X		X				
St. Louis, MO – MSD Combined Sewer Inspections					X		X	X
Unified Government, KS - Inflow & Infiltration Study		X	X					

Key Personnel

SKW has developed a project team that is not only competent and capable of providing Cherokee County with an exemplary project, but a team whose experiences are proven to complement one another. Each team member has extensive experience in their field and area of expertise. As needed, we can offer the services of additional team members.

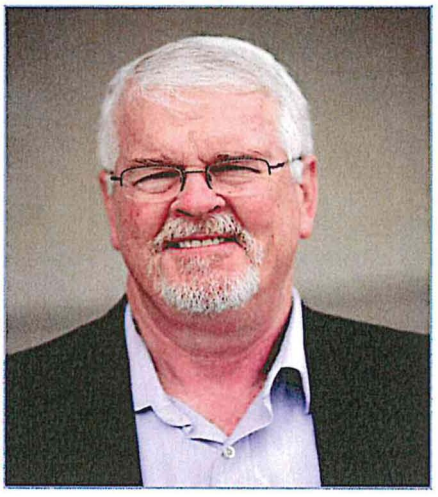
The key personnel are presented in the organizational chart below, as well as each individual's resume on the following pages, indicating their qualifications and previous project experience.

SKW does not take the "one-size-fits-all" approach to projects. We are committed to providing quality services and wish to demonstrate this capability to Cherokee County on this important project.



Phil Burns, P.E.

Project Manager/Primary Contact



Phil has a strong commitment to client satisfaction and a solid reputation with municipalities, utilities and sewer districts in the area.

Phil is also a recognized steward of the environment through his service as an officer and chair of various committees. In 2011, Phil was the recipient of the Arthur Sidney Bedell Award as given by the Water Environment Federation (WEF) at the annual Missouri Water Environment Association conference. In 2012, Phil also received the MWEA 2011 Collection Systems Award for outstanding and significant contributions in the area of collection systems.

RECENT PROJECTS

- Wastewater Collection - Excelsior Springs, MO
- Linn Valley Wastewater System Improvements - Linn Valley, KS
- Sewer System Improvements - Moran, KS
- On-Call Sewer Design - Olathe, KS
- Wastewater Master Planning Services - Edgerton, KS
- Rocky Fork Interceptor Design, - Boone County, MO
- Wastewater Treatment Improvements - Bevier, MO
- WWTP System Improvements - Holden, MO
- Wastewater Collection & Treatment Improvements - Chetopa, KS

Professional Registrations

Professional Engineer
KS, MO, TX, IA

OSHA 10-Hour
Construction Certification

Daniel (Danny) L. Coltrane, Jr., P.E.

Manager, Water Resources

As SKW's Water Resources Manager, Daniel Coltrane is responsible for managing and assisting the Water Resources Department. This includes assisting with and coordinating efforts in every phase of any given project, including marketing, contract negotiations, project staffing and execution, quality assurance/quality control, bidding and construction.

Danny specializes in pumping storage and distribution systems, and is familiar with cathodic protection of underground facilities. He is knowledgeable in all phases of land surveying and civil engineering, and his broad range of experience includes water and wastewater projects, plat and plan reviews, mapping, modeling, Rural Water District distribution, road/transportation, land survey and easements, construction services, GIS, and rate analysis.

Danny works primarily with municipalities and quasi-municipalities, and has a thorough understanding of regulators and funding administrator operations. He has worked with a variety of funding agencies, such as: USDA/RD grants and loans, Community Development Block Grant (CDBG), State Revolving Loan Funds (SRF), as well as private funding for projects.

Professional Registrations

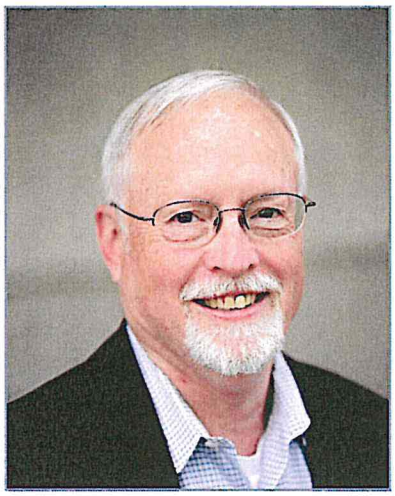
LEED Accredited Professional
Professional Engineer
KS, MO, OK

Recent Projects

- Wastewater Collection & Treatment Improvements - Chetopa, KS
- Roper & Benedict Water Line Improvements - Wilson County, KS
- Gravity Sewer Line Extension - Dewey, OK
- PWWSD#23 Design Review of Water Treatment Plant - Fredonia, KS
- PWWSD #23 K47 Highway Water Line Relocation - Wilson & Neosho Counties, KS

Steve Baker, P.E

Quality Assurance/Quality Control



Steve Baker serves as Senior Project Manager in the Water Resources Department and Associate owner of the firm. He works primarily with public sector clients, leveraging his unique experience with water and wastewater systems projects, and multi-discipline project experience for pump stations and treatment facilities. He understands government agency operations, with a history of managing infrastructure services contracts. His administration experience includes planning, design, surveying, bidding, construction, on-call services, and GIS development for infrastructure.

Steve has extensive on-call or as-needed contract services experience for several communities; including, water and wastewater, stormwater systems, road/ transportation, construction services, plat and plan reviews, land survey and easements, GIS for city infrastructure, mapping, modeling, parks, and rate analysis. Steve has also worked with numerous funding agencies, including USDA/RD grants and loans, Community Development Block Grant (CDBG), State Revolving Loan Funds (SRF), as well as private funding for projects.

Professional Registrations

Professional Engineer:
KS, MO

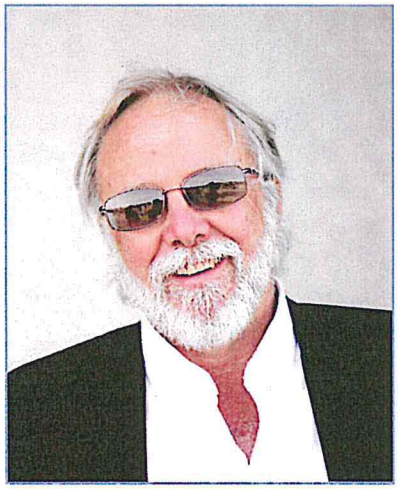
Adult CPR Training

Recent Projects

- Small Main Replacement on Plate J-112 - Kansas City, MO
- North Oak Water Main Replacement - Kansas City, MO
- Priority A Waterline Improvements - North Kansas City, MO
- Barry Road Water Main Improvements - Kansas City, MO
- 59th Street & Noland Road Water Main Assessment - Kansas City, MO
- Line Improvements, 4 separate sites - Liberty, MO

Timothy (T.J.) L. Johannes, P.L.S.

Field Survey Manager



Timothy (T.J.) Johannes serves as Principal and Manager for SKW's Field Services for both the Infrastructure and Energy Divisions. Under his leadership, the department has grown from practicing in two states (Missouri and Kansas) to licensure and live projects in 20+ states. He oversees 90+ employees and the acquisition of and training on the latest, state-of-the art equipment. He is also responsible for client relationships, project management and coordinating with supervisors on multi-person field crew schedules. In recognition for his contributions to the firm, Timothy was appointed to the position of Associate in 2006 and Principal in 2012. He is an active member of the Kansas City Metro Surveyors Association, the Kansas Society of Land Surveyors, and the Missouri Association of Registered Land Surveyors.

Professional Registrations

Land Surveyor:
Missouri

Veriforce Certified

Adult CPR Training

Railroad Safety Orientation - UPRR & BNSF

Recent Projects

- Sanitary Sewer Investigation & Rehabilitation - Wellsville, KS
- Barry Road Improvements & Water Main Relocations - Kansas City, MO
- Winchester Business Center, Water Main Extension - Kansas City, MO
- 85th Street Water Main - Kansas City, MO
- East End & Downtown Transmission Main - Excelsior Springs, MO
- Beverly Chute Waterline Design - Excelsior Springs, MO
- Sanitary Sewer Improvements - Excelsior Springs, MO

Michael E. Cunningham
Project Designer

Professional Registrations
OSHA 10-Hour Construction Certification

Adult CPR Training

Essential First Aid Training

Michael Cunningham serves as a Project Designer for SKW's Water Resources where he works on preliminary engineering reports, lagoon sludge removal and bank stabilization, collector system review and renovation and public water supply improvement design projects. He is familiar with AutoCAD and Microsoft Office.

Prior to joining SKW, Michael served as an intern with a crude atmospheric and vacuum column company where he used his B.S. in Chemical Engineering to design a pilot plant column to test mist elimination equipment, developed drawings using AutoCAD, and prepared calculations and specifications.

He has also worked as Survey Crew Member on large high pressure pipeline projects in Oklahoma testing the pipe exterior casing using DC Voltage Gradient technology (DCVG) and staking the identified defects.

Recent Projects
- PWWSD#23 Design Review of Water Treatment Plant - Fredonia, KS
- Roper & Benedict Water Line Improvements - Wilson County, KS
- On-call Engineering - Water Line Improvements - Humboldt, KS
- Water Distribution Improvements - Chetopa, KS
- Wastewater Collection & Treatment Improvements - Chetopa, KS
- Preliminary Study of Public Water Supply - Canute, OK

Holly J. Powers
Engineering Technician

Professional Registrations
KDOT Cert Insp Level: BI, API, CPI, STR

KS

SKW is fortunate to have Holly Powers as an Engineering Technician in our Iola office. She began her career as a Drafter, Technician with an engineering firm in 2000 while working on a Bachelor of Science at Pittsburg State University. A collaborative team member, over the years Holly's roles have expanded as needed and have ranged from Survey Crew Member in the field to Project Manager. Her duties have also varied and include: client and project management; community planning; writing grants; estimating costs and project scope; developing specifications; drafting construction drawings and plans; and providing construction administration, inspection and closeout services.

With twelve years of technical experience, Holly knows construction and maintenance standards and is proficient with AutoCAD, AutoCAD Land Desktop, AutoCAD Civil 3D, Adobe Acrobat Professional, Microsoft Office and MasterSpec.

Her project experience includes grant writing, community planning, streetscapes, parks, hike and bike trails, and sanitary/storm sewers.

Recent Projects
- Water Distribution Improvements - Chetopa, KS
- Wastewater Collection & Treatment Improvements - Chetopa, KS

Ace Pipe Cleaning, Inc
Kansas City, Ft. Worth, Tulsa, St. Louis, Hayden AZ
The Environmental Protection Specialist

4000 Truman Road
Kansas City, Missouri
64127
Tel: (816) 241-2891
Fax: (816) 241-5054
Watts: (800) 325-9372

Brad Hubbard

Project Role—Field CCTV Operator

Office Location
Kansas City, Missouri

Certification
NASSCO Pipeline Assessment and Certification Program (PACP) #U-31112186

40 hour Hazardous Waste Operator-2010

10 hour OSHA 2012

Industry Tenure
2009 - Present

As a CCTV field technician, Brad Hubbard has performed Cleaning and CCTV inspection services for approximately three years though out the Midwest Region. Brad has been PACP certified for three years.

Relevant Experience

CSO 2 Cleaning and Televising Sewer System and Structures—Keokuk, Iowa
- CCTV inspection of approximately 210,000 feet of 6-inch to 9-foot sanitary sewer pipe
- 2012

Citywide Clean and CCTV - Kansas City Water Services ---Kansas City, Missouri
- The project consisted of cleaning and televising of approximately 200,000 LF of pipes ranging from 6-inch to 96- inch diameter.
- 2012

Missouri State Fairgrounds – Clean and TV for Allstate Consultants
- Lead technician in cleaning and televising approximately 13,000 feet of 8-inch storm sewer located in Sedalia, Missouri.
- 2012

Clean and CCTV for Flood Control Projects – Forest City Levee District, Missouri
- Heavy Cleaning and CCTV of approximately 2,000 feet of levee structure line located in Forest City, Missouri.
- 2012

2012 Systematic Sewer Investigation - City of Lawson, Missouri
- Clean and CCTV Inspection of 15,160 LF of Sanitary Sewer lines ranging from 8"-12".
- 2012

Project SS1202 Pre-Clean and CCTV Inspection – City of Manhattan, KS
- Pre-Clean and CCTV inspection of approximately 20,000 feet of 8-inch to 18-inch sewer line located in Manhattan, KS for Western Slope Utilities.

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Fax: (816) 241-5054
Watts: (800) 325-9372

Timothy Osgood

Project Role—Field CCTV Operator

Office Location
Kansas City, Missouri

Certification
NASSCO Pipeline Assessment and Certification Program (PACP) #U-1007-5483

40 hour Hazardous Waste Operator

10 hour OSHA 2010

Confined Space Awareness 2011

Industry Tenure
2005 - Present

As a CCTV field technician, Timothy Osgood has performed Cleaning and CCTV inspection services for approximately six years though out the Midwest Region. Timothy has been PACP certified for four years.

Relevant Experience

Cole Creek CSO 204 Sewer Separation Field Investigations—Omaha, Nebraska
- CCTV inspection of approximately 44,000 feet of 8-inch to 30-inch sanitary sewer pipe

Task Order No. 1 Omaha Project OPW 51997 – SI 117: Missouri Avenue/Spring Lake —Omaha, Nebraska
- The project consisted of light cleaning and televising of approximately 33,898 LF of pipes ranging from 6-inch to 66-inch in diameter.

Storm Sewer Video Inspection — Shawnee, Kansas
- Lead technician in televising approximately 23,000 feet of 12 to 60 inch storm sewer located in Shawnee, Kansas.

Lake Quivira Sanitary Sewer Rehabilitation — Johnson County, Kansas
- CCTV Inspection and Cleaning of approximately 16,000 Linear Feet of 6-inch and 8-inch sewer line

Sewer Investigation - City of Louisville, KY C/O RJN Group, Inc.
- Clean and CCTV Inspection of over 100,000 LF of Sanitary Sewer lines ranging from 8"-15". This project took 2 months to complete.

Ruskin Heights Sewer Rehabilitation 2009 – Kansas City, MO
- Post Rehabilitation CCTV inspection of approximately 40,000 feet of 8-inch to 12-inch sewer line.

Kaw Valley Drainage District – Kansas City, KS
- This project consisted of the investigation of the functional condition of approximately 30,000 feet of sewer under levees/floodwalls using television inspection and digital recording.

Clifford K. Cate III, P.E.

Principal-in-Charge/Project Manager

Mr. Cate is the Water/Wastewater Engineering Team Leader for TREKK Design Group, LLC. He is directly responsible for all phases of water/wastewater projects including project management and project design.

Mr. Cate has 18+ years of wastewater collection system experience. His experience has included evaluating the condition, operation and maintenance and analyzing the existing and future capacity of sanitary sewers. Typical wastewater design projects have included master plans, sanitary and combined sewer evaluation studies, sanitary sewer rehabilitation and hydraulic modeling.

His overall experience includes local and national water and wastewater projects. He has evaluated and modeled existing water and sanitary sewer systems, designed sewer extensions, interceptors, pump stations and rehabilitation projects, and managed sanitary sewer master plans.

Mr. Cate has served as TREKK's Project Manager for the City of Kansas City's and Omaha's Combined and Sanitary Sewer Overflow Long Term Control Plans to address wet weather problems throughout the City's collection systems. TREKK was responsible for the field inspections for three (3) separate basins for the City of Kansas City and nine (9) basin studies for the City of Omaha. Mr. Cate is currently serving as the Project Manager for the City of Columbia's Inflow and Infiltration Reduction Program, both public and private. As part of this project, TREKK is conducting manhole inspections, building inspections and smoke testing throughout the City with the goal of reducing the peak wet to dry weather flows to 3:1. In addition, TREKK is assisting with the development of the City's Private I/I Abatement program.

Mr. Cate has served as TREKK's Principle-in-Charge for Long-Term Control Programs for Kansas City, MO, Kansas City, KS, Louisville MSD, Omaha and St. Louis MSD.

Professional Registrations
Licensed Professional Engineer
- ✓ Kansas
- ✓ Missouri
- ✓ Nebraska
- ✓ Colorado

Memberships
- ✓ Water Environment Federation – Kansas and Missouri WEA Collection System Committee

Education
- ✓ B.S., Civil Engineering, University of Kansas
- ✓ B.A., Biology, University of Kansas
- ✓ M.S., Engineering Management, University of Kansas

Project Experience
- ✓ SSES Engineering Services for the Cedar Creek Phase 2 – Louisville and Jefferson County MSD
- ✓ Inflow and Infiltration Reduction Program – Columbia, MO
- ✓ Middle Blue River Basin Green Solutions I/I Study – Kansas City, MO
- ✓ Infiltration and Inflow Investigation – Rock Creek Public Sewer District, MO
- ✓ Bonfils Phase VI Sewer Lateral Inspections – MSD St. Louis, MO
- ✓ Management, Operation and Maintenance Program (MOM), CSO Long Term Control Plan – Kansas City, MO
- ✓ Gooseneck Creek & Lower Blue River Combined Sewer Overflow Basin Studies – Kansas City, MO
- ✓ Birmingham Project Area Sanitary Sewer Basin Study – Kansas City, MO
- ✓ Six (6) Combined Sewer Overflow Basin Studies – Omaha, NE

Brandon C. Freeman, P.E.

Office/Project Manager – Civil Engineer

Mr. Freeman is a Project Manager for TREKK Design Group, LLC, and is responsible for all phases of design for municipal projects including water, wastewater, and transportation. He oversees business development and operations for the Springfield, Missouri office.

Mr. Freeman's five years of multifaceted project experience includes field work, planning, design, and construction administration. His involvement with municipalities provided a solid background in planning, funding, and construction oversight, as well as a thorough knowledge of regulatory policies, procedures, and officials.

A keen interest in the wastewater flow monitoring and sewer rehabilitation drives Mr. Freeman's to investigate new technologies that work to eliminate infiltration and inflow. Sharing his knowledge enables Mr. Freeman to focus on educating the public about private sector wastewater defects and the problems they cause. His outreach and community relations are key contributors to successful projects.

Mr. Freeman stays current on the latest software, training and tools available to provide TREKK clients with integrated solutions. His expertise in "connecting the dots" on projects has provided leadership opportunities—he has gained valuable skills in managing relationships, project timelines, and risk mitigation.

Based in Springfield, Mr. Freeman is assigned to the City's Sanitary Sewer Overflow Project, which is scheduled for completion in 2018. His role will entail working with the TREKK Project Team on the Private Sewer Repair PILOT Program.

Professional Registrations
Licensed Professional Engineer
- ✓ Missouri

Memberships
- ✓ Missouri Society for Professional Engineers
- ✓ Water Environment Federation – Missouri WEA
- ✓ Society for Professional Engineering Services

Training
- ✓ OSHA 10-hour
- ✓ OSHA Confined Space
- ✓ WaterCAD
- ✓ AutoCAD

Education
- ✓ B.S., Civil Engineering, Missouri University of Science and Technology

Project Experience
- ✓ Sanitary Sewer Overflow Project – Springfield, MO
- ✓ Center Creek Board Zinc and I/I Flow Study – Webb City, MO
- ✓ Peak Flow Pump Station – Carterville, MO
- ✓ 2012 Sanitary Sewer Evaluation Study Program – Greenfield, MO
- ✓ Flow Monitoring Projects – Various Locations
- ✓ Water Supply and Storage Projects – Wyandotte, OK
- ✓ Sports Complex Rehabilitation Project – Girard, KS
- ✓ Airport Apron Replacement – Allen County Airport, Iola, KS
- ✓ Ance Creek Road Re-Alignment and Retaining Wall– Branson West, MO

Wastewater Experts

Understanding of Wastewater Systems

SKW is an experienced on-call consultant that has both an understanding of the challenges facing infrastructure and development, and the in-house capabilities to address each challenge. Having had the opportunity to serve over 45 public entities on an on-call basis SKW has been pre-qualified to respond to the most straight-forward and complex projects. The table to the right represents SKW having provided similar wastewater services to clients under either on-call or pre-qualification agreements.

SKW's corporate headquarters are located in Lenexa, Kansas. Many of our engineers and surveyors are registered in the State of Kansas including each of our assigned team members for this project. This team has no less than ten years of experience, most having several decades of project work to call upon. They are extremely qualified for the design and construction of sanitary sewer projects.

Wastewater On-Call Clients
City of Olathe, KS
City of Excelsior Springs, MO
City of Lone Jack, MO
City of Mexico, MO
City of Parkville, MO
City of Tracy, MO

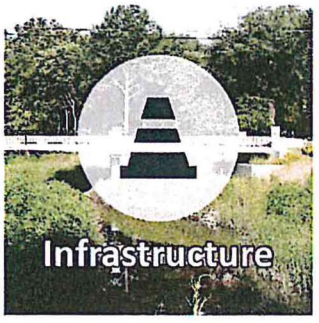
This experience means SKW has multiple staff which are intimately familiar with state and federal regulations as they apply to wastewater projects. Our staff routinely use their regulatory knowledge to study and design facilities to meet requirements of all applicable state and federal rules and laws. The same level of deep understanding and professionalism exists for all of our senior technical staff that will be working on your facilities.

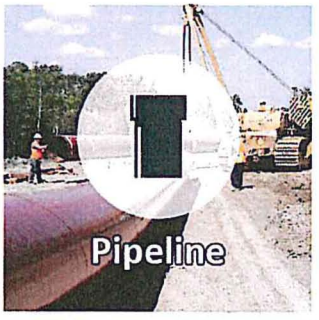
In addition to understanding the applicable laws and rules, it is important that all design staff be knowledgeable of current and emerging technologies and industry trends. This is important to our professional staff in order to understand and be aware of the proper applications of the equipment and technology as they apply and are used in the world of ever-tightening regulations. SKW design staff strives to stay current on these issues and will assist the City staff discern the best options available for the application at hand.

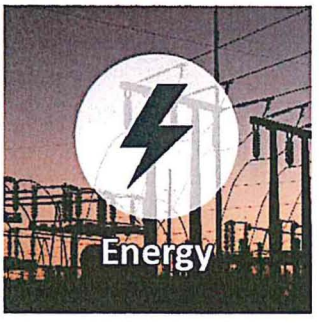
SKW has a long and extensive history providing planning, surveying and engineering services throughout the Midwest region. Our past experience completing water system related projects include water supply, treatment, storage and distribution; wastewater collection and treatment; stormwater collection and detention; land surveying; and construction observation. In recent years, SKW has performed consultant services for more than 302 water supply projects, 390 wastewater projects, and served clients in finding solutions to more than 227 stormwater related issues.

Our staff members are well versed with current versions of applicable technical hardware and software programs. Depending on the project, we have the knowledge and ability to prepare documents in Visual Hydro, EPA-SWMM, Mike SWMM, MikeNET, Mike View, ArcView, HEC-1/HEC-HMS, HEC-2/HEC-RAS, PondPack, StormCAD, WaterCAD, SewerCAD, AutoCAD Land Desktop, CAD Overlay, MathCAD, FlowMaster, CulvertMaster, WSPRO, TR55 and ED. SKW also provides technical specifications and bid documents in either WordPerfect or Word software packages.

Firm Qualifications







SKW designs communities by offering clients a full range of professional consulting services at local, regional and national levels. Our complementary disciplines are consistently delivered with high quality service and attention to your needs.

Since 1950, SKW has helped our clients succeed by successfully executing projects, managing costs and controlling schedules. We are committed to being a valuable resource in providing dependable service with innovative and affordable solutions.

We are:

Forming Partnerships. Delivering Results. means we consider our clients to be valued partners. When you treat your clients like partners, the results are noticeably different and understandably remarkable. We make every effort to listen to your needs and recognize what is individually important to you. We are problem solvers with a reputation for providing personal service and delivering quality projects on time and within budget. The service we offer clients, together with our years of experience, enables us to deliver lasting results. The truest measure of our commitment is visible through the impact our work has on the communities we help develop.

When you treat your clients like partners, the results are noticeably different and understandably remarkable.

Office Locations

11250 Corporate Ave. Lenexa, KS 66219, 913-888-7800
107 Butler Street, **Macon**, MO 63552, 660-385-6441
216 N. Jefferson, **Iola**, KS 66749, 620-365-5101
3200 Penn Terrace, Suite 100, **Columbia**, MO 65202, 573-442-4537
1700 Swift Avenue, Suite 100, **North Kansas City,** MO 64116, 816-756-0444
1323 East 71st Street, Suite 120, **Tulsa**, OK 74136, 918-499-6000
8300 FM 1960, Suite 450, **Houston,** TX 78208, 281-292-0910

Wastewater Services

As communities develop, their reliance upon basic public services, including wastewater service, becomes increasingly more important. Studying growth patterns, monitoring conditions of existing system facilities and implementing plans for improvements can help communities maintain appropriate wastewater system facilities.

Designing wastewater collection and treatment facilities that efficiently operate to their optimum capacities is the ultimate goal SKW strives to achieve. We understand the dollars spent on wastewater systems is a community investment. It is our responsibility to provide consulting services that maximize those funds through the delivery of quality plans for collection, pumping and treatment system improvements. We manage projects by paying close attention to detail, while adhering to budgetary limitations and maintaining an affordable sewer user rate.

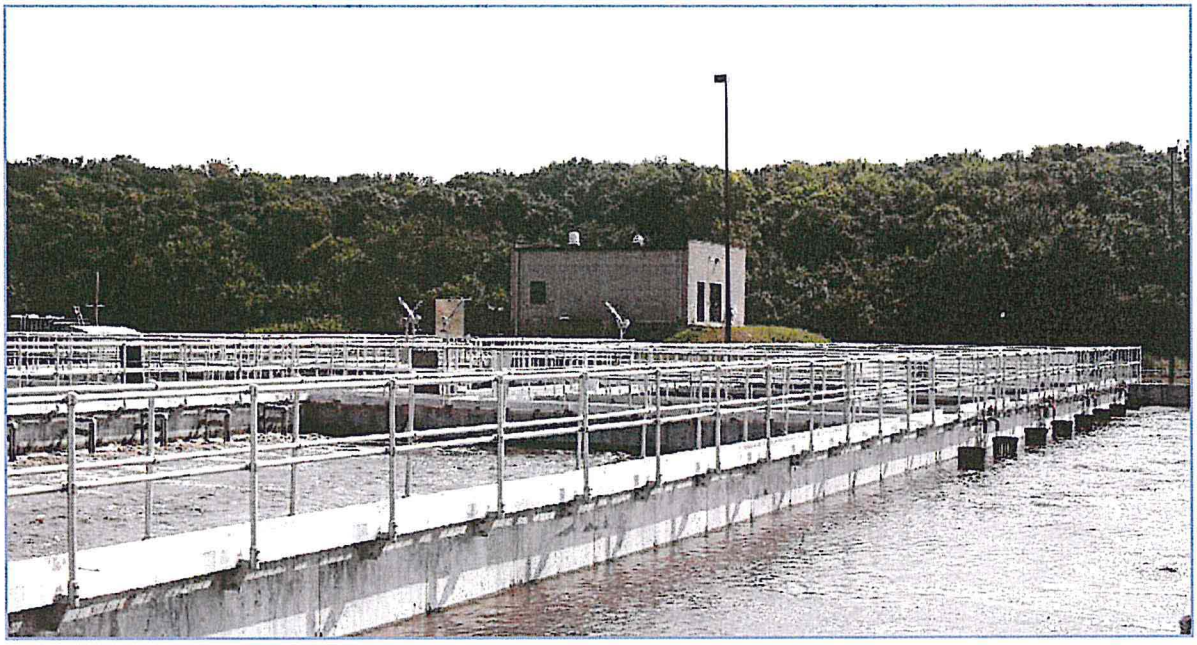
We manage projects by paying close attention to detail, while adhering to budgetary limitations and maintaining an affordable sewer user rate.

SKW actively monitors the changing state and federal environmental regulations to evaluate their potential impact on our clients' wastewater systems. We work to keep you informed about regulations which require wastewater systems to monitor and comply with the NPDES discharge permit limits and impacts to the receiving stream.

Communities of all sizes have turned to SKW for professional consulting services regarding wastewater infrastructure improvements. From initial investigations to post-construction phase services, we are committed to delivering the quality services and products our clients need and have come to expect.

WASTEWATER COLLECTION & TREATMENT SERVICES

- Facilities Planning/Master Plans/Engineering Reports
- Anti-degradation Reports
- Permit Compliance Consultation & Negotiation
- Rate Studies & Analysis
- Construction Administration/Observation
- Combined Sewer Overflows (CSO)/Separation
- Sanitary Sewer Overflows (SSO)
- Relief Sewers
- Infiltration & Inflow (I&I) System Studies
- Collection Systems
- Gravity Sewers
- Pressure Systems
- Pump Stations & Force Mains
- Mechanical Treatment Systems
- Natural Treatment Systems
- Hydraulic Modeling/System Analysis
- Upgrade Existing Systems
- System SCADA/Controls
- GIS System Mapping/Asset Management



Corporate Background/History

In 1954, Ace Pipe Cleaning, Inc. began cleaning, inspecting and repairing America's infrastructure. Today, we are part of the Carylon Corporation, the largest and most experienced wastewater maintenance firm in the nation. The Carylon Corporation, headquartered in Chicago, Illinois, is comprised of twenty wholly–owned subsidiary companies located in major areas throughout the United States.

Ace Pipe Cleaning and the nationwide network of Carylon Companies have provided specialized environmental services to industries, municipalities and utilities since 1949. We are widely known for our comprehensive services, professional expertise, state-of-the-art equipment and sophisticated technology. Our projects range in size from those requiring a single person and a single piece of equipment to the use of multi-company, multi-disciplinary crews and a fleet of hundreds of specialized pieces of equipment.

General Capabilities

Ace Pipe Cleaning has the general capabilities necessary to deliver a successful project.

CCTV Inspections. Ace Pipe Cleaning owns 15 mobile television studio trucks equipped with specifically designed camera equipment and Pipetech Software to capture and record observations into an easily accessible electronic database. This licensed software program is designed to capture data in the form of video and photographs. Audio commentary and PACP coding is used to identify defects, failures, obstructions, locations or acceptable conditions within each inspected line segment. Every Ace CCTV Technician is a NASSCO certified PACP operator. In addition to our typical televising capabilities, Ace can also provide:

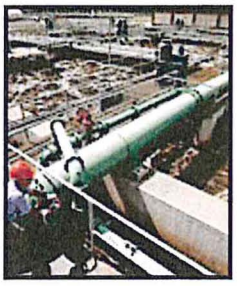
- **Laser/Sonar HDCCTV Inspections.** This advanced technology can provide laser profiles, sonar and HDCCTV in a single inspection without dewatering or by-pass pumping.

- **Service Lateral Investigations**. Our lateral launch trucks are capable of televising up to 100 feet of 3-inch diameter and larger of service laterals from the main sewer line up to the building. Investigations can also be performed through the cleanout using a push camera (mini-camera) or from inside of the building. Each lateral camera has onboard Sonde for depth and location of the line to be investigated.

Sewer Cleaning. Ace owns 13 Jetter trucks and 24 Jetter and Vacuum combination trucks along with an assortment of specialized collection system equipment. The high volume units operate in the range of 175 gallons per minute and are specially designed to clean large diameter sewers (24-inches diameter and larger). The smaller 80-100 gallon per minute units are designed for small diameter sewers. Each unit is equipped with vacuum tubes for removal of solids, rotating jet hose reel, debris boxes (up to 12 cubic yards), hydraulic cutters for grease and root removal and various sized angle nozzles for sewer cleaning.

TREKK DESIGN GROUP LLC
1441 East 104th St.
Kansas City, MO 64131
(816) 874-4655

WATER/WASTEWATER SERVICES



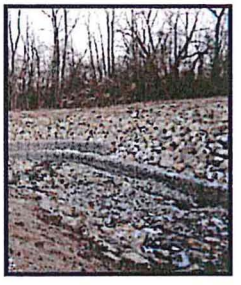
TREKK Design Group, a certified Women Business Enterprise, offers a full complement of services and expertise that is unique to the water/ wastewater industry. TREKK is one of only a few engineering firms in the Midwest that offer comprehensive services for the evaluation, condition assessment, diagnosis, rehabilitation and facility plan development of sanitary and combined sewer systems. This includes a Field Services division to complete all types of sewer inspections and surveys. Our comprehensive services allows our clients the flexibility to complete any water/wastewater project quickly and efficiently. TREKK has completed over 150 sewer inspection projects throughout the Midwest. Over the past 10 years, TREKK has inspected over 50,000 sewer structures, including manholes, sewer mains, and service laterals. In addition, TREKK has conducted over 7,000 building inspections and smoke tested over 2,000,000 linear feet of sewers.

ENGINEERING SERVICES

- Water/Wastewater Facility Plans
- Inflow & Infiltration (I/I) Evaluation
- Infrastructure Condition Assessment
- Private I/I Program Development
- Sanitary Sewer Overflow (SSO) Reduction Services
- Sewer Main Design (rehabilitation/extension)
- Water Main Design (replacement/extension)
- Ground and Elevated Storage Design
- Pumping Facilities Design
- Hydraulic Modeling
- Master Planning
- Asset Management
- GIS Mapping Systems
- Construction Management

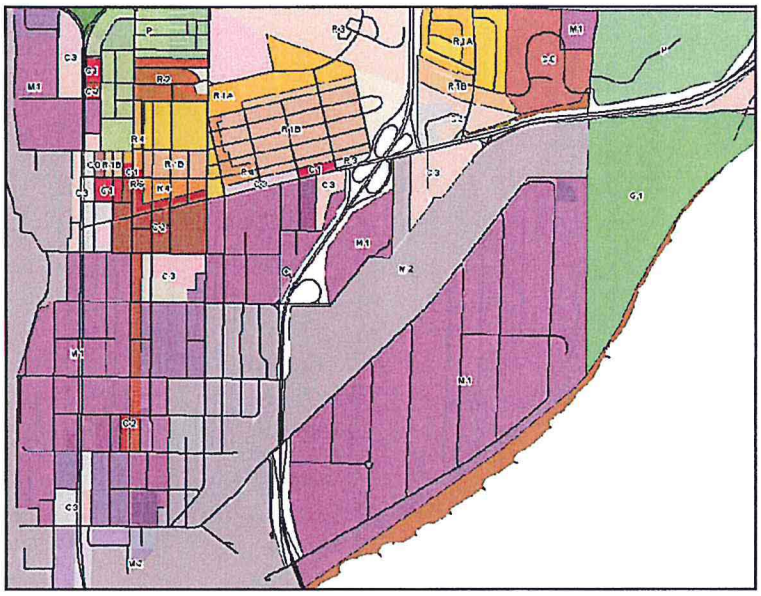
FIELD SERVICES

- Manhole Inspection
- Smoke Testing
- Dyed Water Testing
- Flow and Rainfall Monitoring
- SSO/CSO Monitoring
- Mainline and Service Lateral CCTV Inspections
- Storm Inlet Inspection
- Groundwater Monitoring
- Building Inspections
- Surveying



Revolutionize the practice of engineering consulting to improve the quality of life for our clients, employees, and community.

Geographic Information Systems



One of the most important applications of today's rapidly changing digital world is the ability to electronically document the existence of spatial information. The creation of Geographic Information Systems (GIS) based on geographic coordinates helps efficiently integrate this spatial data into a single, cohesive system for use in planning, mapping and infrastructure design.

Integrating geographic information requires the ability to identify a client's current system needs and recognize opportunities for future expansion. By analyzing workflows and end user needs SKW can design and implement a GIS to best fit client goals. Our geodatabase experience also spans to include an ability to advise clients wishing to upgrade their existing system for changing needs.

SKW customizes services to the unique needs of our clients. Our ArcGIS application experience includes the development of extensions using ArcIMS, VB and VBA, as well as extensions allowing pipe hydraulic modeling to be performed within the GIS System Map. Through our strategic alliances, we are also an authorized distributor of ESRI software, which allows clients to receive personal set up, sales and support from a local representative.

Critical to the success of a geodatabase is providing adequate training and support for system users. SKW helps clients achieve long-term success in their GIS by developing user friendly training sessions and support materials, which are tailored to include the client's own data. This customization helps both casual users and internal specialists get the most out of their system's capabilities.

Infrastructure/Utility Applications

- Base Map Creation
- System Inventory
- Asset Management
- Customer Information Systems
- Customized Data Collection
- GASB34 & NPDES Reporting
- Street Centerlines
- System Analysis, Inventory & Modeling
- Image Integration
- SCADA Integration
- Other Software Integration
- Incident Plotting
- Address Matching
- Zoning Administration
- Land Use Administration
- Park Infrastructure & Inspection
- Simplified Data Interfacing
- Tax Mapping
- Plat Mapping
- Floodplain Administration

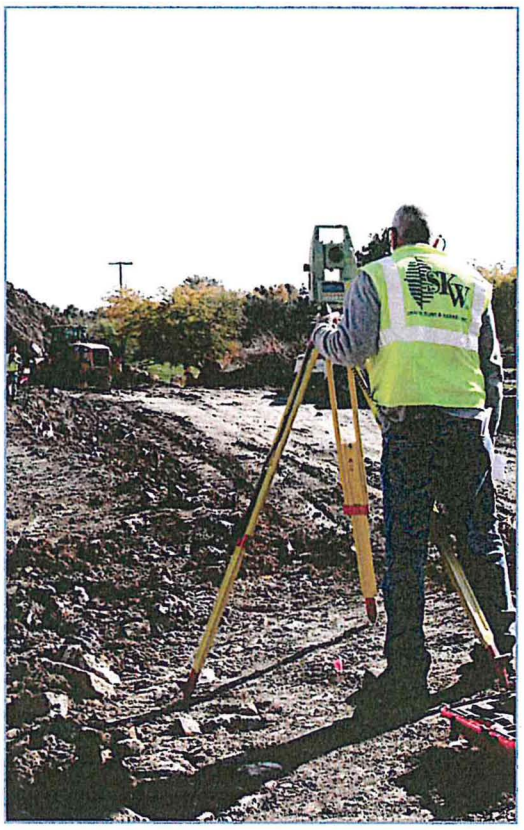
PRIVATE SECTOR GIS

- Site Selection
- Market Analysis

LOCAL GOVERNMENT MANAGEMENT APPLICATIONS

- Public Access
- Hazardous Materials Locations
- Incident Plotting
- Address Matching
- Zoning Administration
- Land Use Administration
- Park Infrastructure & Inspection
- Simplified Data Interfacing
- Tax Mapping
- Plat Mapping
- Floodplain Administration

Land Surveying



In the eyes of the surveyor, each landscape represents a unique part of a much larger and more magnificent vision. But it takes an experienced visionary to effectively evaluate the lay of the land and create something truly remarkable.

Land survey is the root of all development. It is also the foundation from which SKW has grown into one of the largest, most respected and trusted names in the industry. In fact, our surveying roots date back to 1885 and include records that form the basis of boundary work throughout much of Kansas City.

Today, the members of our surveying team are among the most knowledgeable, experienced and well known in the industry. Since the company's inception and despite dramatic changes in both equipment and expectations, SKW has continued to provide a diverse range of the industry's most innovative, reliable and visionary surveying services.

SKW is changing the surveying landscape through its use of High-Definition Surveying (HDS) technology. HDS utilizes state-of-the-art laser scanning equipment to generate digital models and as-built drawings based upon electronic measurements. With the capacity to create high-density images combined with color effects and 3D visualization, we can now capture an unparalleled level of detail and accuracy.

CADASTRAL SURVEYS

- ALTA/ACSM Surveys
- Boundary Surveys
- Control Surveys
- Lot Surveys
- Platting
- GLO Retracement Surveys

ENGINEERING SURVEYS

- Topographic Surveys
- Route Surveys
- Architectural Surveys
- Plan Preparation
- Flood Studies
- Pipeline & Cable Surveys

SETTLEMENT MONITORING

- Court Cases
- Internal Control

MAPPING

- Aerial Mapping Control Surveys
- Section Corner & Utility Surveys
- Global Position System Surveying (GPS)
- Topographic Mapping
- Utility Mapping
- Parcel Mapping
- Facility Inventories
- High-Definition Surveying (HDS)

CONSTRUCTION STAKING

- Foundation Staking
- Column Line & Building Control
- Utilities
- Roads & Bridges
- Grading

Construction Phase Services

Construction Phase Services demonstrate SKW's ability to provide clients with a representative who will ensure that their project is constructed with the attention to detail in which it was designed. We offer on-site management services for the construction of nearly everything from roadways and parklands to treatment plants and utility relocations. This unique service often saves both time and money, while providing an open line of communication between the client and contractor.

SKW offers a team of construction observers whose expertise can be rarely matched when it comes to years of experience and industry knowledge. This depth of experience and knowledge often leads to increased field efficiency and maintaining the project schedule.

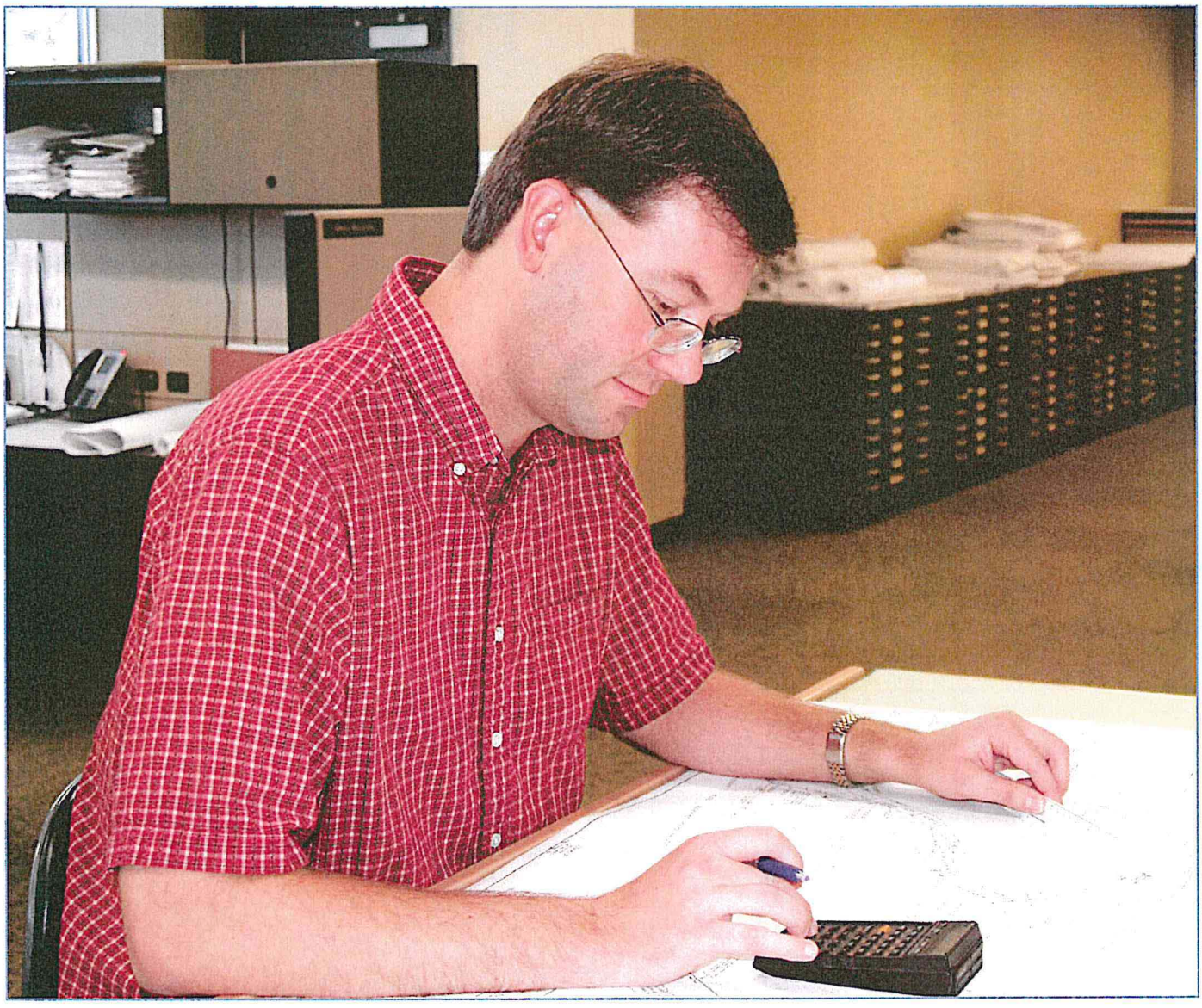
Typical Construction Observation Responsibilities Include:

- Examine Workmanship for Conformity to Standards
- Interpret Plans and Specifications
- Verify Accuracy of Dimensions of Installation/Layout
- Verify Levels, Alignment and Elevation
- Review Shop Drawings
- Make Recommendations for Change Orders
- Prepare Samples for Laboratory Testing
- Prepare Construction Documents
- Provide Construction Administration
- Interface with Property Owners and Contacts
- Attend Progress Meetings
- Provide Progress Reports
- Prepare Pay Request and Change Order Documents
- Conduct Final Testing

Control of Costs

Budget is a concern for all projects. SKW operates under the principle that controlling costs is a direct result of strategic project management. There are several keys to successful management of project costs beginning with assignment of the appropriate project staff. SKW managers work to realistically evaluate staff workloads and expertise, ensuring the availability and abilities of the project team align in effort to deliver the resourceful design solutions.

SKW utilizes several other strategic management practices to control costs. One way to maintain the project budget is to develop a clearly defined scope. With a clear plan for development, change orders that could potentially deter the original budget can be minimized or eliminated. A reliable survey is also key to controlling costs and delivering a project within budget. Fortunately, many SKW projects are completed with in-house surveyors, allowing us to preserve the integrity of the information, further lending to cost control. We also utilize our extensive database of similar projects as reference points for future opportunities, as a guide to keeping projects within the established parameters.

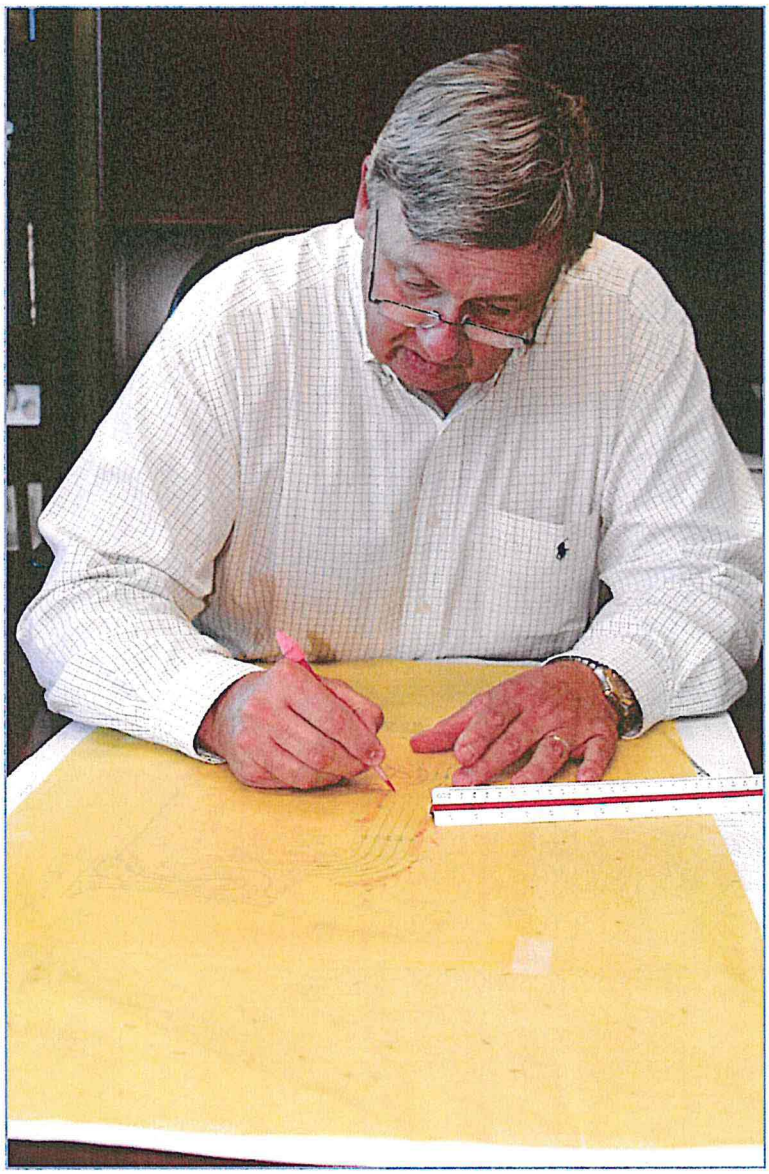


Quality of Work

SKW's Quality Assurance and Quality Control procedures follow the creed of our mission, "to earn the trust of our clients through performance." We believe the three key elements guiding our adherence to this mission are defined in our QA/QC program:

- **Quality Assurance** - QA is our plan that defines the level of quality that SKW requires and the ways in which it will be achieved. We believe that quality is a function of the work process and the work ethic of the people that implement the process. In order to achieve this goal, SKW has developed an organized system of project reviews that establishes a process to help ensure quality services and deliverables are provided on each and every project.

- **Quality Control** - QC is a process reflecting the quality standards of both SKW and the client. We implement this process throughout the project cycle to ensure project requirements are met or exceeded. We seek to listen to the client's goals and ensure those goals are reflected in the project design and deliverables. We also work to maintain QC through regular client staff communication, progress and design reviews, all in an effort to provide a product that meets the project requirements. Formal internal and client reviews are also set at selected intervals to ensure the project reflects the client's needs and the project's constructibility prior to bidding.



- **Quality Improvement Program** - Finally, QIP is a system developed to continuously improve the quality of our projects. We know that projects differ and situations change for each project. We work to find the best and most economically feasible option to meet the specific requirements of each project. Some improvements are evident and should be acknowledged through the process to make future projects easier and more cost effective. Items including recognizing sound, cost effective engineering solutions, setting up tried and true communication and project coordination activities, maintaining contact with state and local agencies to better interpret regulations and requirements, and coordinating submittals for project funding and technical reviews, can each add value to a project in motion. By applying what we have learned from in the past, we believe we can provide increasingly better services and deliverables to our clients in the future.

Ability to Meet Schedules

Provided below are three techniques SKW utilizes in combination when preparing and carrying out projects. The method used often depends on the type of project and the preference of the project manager and client. Each technique is successful in defining the critical path of a project and the resources necessary to complete the project. SKW's management practices, staff size and flexibility allow us to meet aggressive project schedules and key deadlines.

- **Development of a milestone schedule is a key schedule management technique.** Typically, projects have preset deadlines important to the client's goals or for funding approval. It is important to clearly define all of the project milestones for clients, consultants and funding agencies, in order to strategically build a schedule to meet those milestones.

- **Creation of a management spreadsheet to divide project tasks and define time for each task.** This method of scheduling is beneficial in defining the resources needed. Man hours are assigned to each block of time, visually revealing the number of project engineers or technicians that will be needed to work on the project in each week or phase.

- **Utilization of licensed project management software to schedule** and track the actual project through to completion. Commonly utilized for larger projects, the software generates a step-by-step plan in where the completion of one phase of the project is critical for the next phase to begin.

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