



January 24, 2017

Mr. Kelly Wilson - Chairman
Marshall County Sanitation District No. 1
16593 U.S. Highway 68 East
Hardin, KY 42038
(Submitted via Email to County Judge Executive Kevin Neal – 1/24/17)

**Re: Engineering Services Proposal
Sanitary Sewer Lift Station Improvements
Marshall County Sanitation District No. 1
Marshall County, KY**

Dear Mr. Wilson:

Thank you for the opportunity to prepare this engineering services proposal for your review. In preparing this proposal, RIVERCREST Engineering, Inc. (RIVERCREST) has reviewed the project history and field evaluation data collected by our staff in 2016. The following provides an outline of the engineering services and associated fees proposed for the District's Lift Station Improvements project. At this time, RIVERCREST has the capacity to begin work on this project within 2 weeks following approval of this proposal and execution of a written engineering services agreement. Our proposal addresses the following project phases,

- a) Preliminary Evaluation
- b) Surveying & Preliminary Design
- c) Final Design & Permitting
- d) Easement/Property Acquisition
- e) Construction Contract Procurement
- f) Construction Engineering & Observation

RIVERCREST understands this project will include replacement or rehabilitation of five (5) sanitary sewer lift stations in the Aurora community. These lift stations are located within the U.S. Highway 68 corridor and ultimately provide conveyance of wastewater to the District's treatment plant. Based on previously performed field work, we understand that each of the referenced lift stations is nearing or has reached the end of its intended useful life cycle and warrants attention. Meetings with former operations staff have allowed for our generation of a sanitary sewer system map and a lift station flow diagram (attached in APPENDIX A). This mapping clarifies how the wastewater flows are collected and conveyed to the wastewater treatment plant.

The following is a more detailed summary of our proposed scope of services, fees and projected schedule for this project:

I. Preliminary Evaluation

RIVERCREST has prepared GIS level preliminary mapping for the project, and will coordinate with our surveying sub-consultant and the Marshall County PVA, to review adjacent property ownership information, existing easements, or platted property for the existing lift station sites.

Rivercrest Engineering Incorporated, 7020 U.S. Highway 68 W, Paducah, Kentucky 42003

Detailed grantor/grantee searches, title opinions, etc. are assumed to be provided at a later stage by the District's legal counsel as required.

Following this initial review, RIVERCREST will develop a conceptual planning map for the District's approval prior to initiating the field surveying portion of the project. RIVERCREST understands that topographic surveys will be required at each lift station site to evaluate the existing infrastructure, topography, incoming utilities, and available property limits. RIVERCREST assumes that construction activities will be performed on properties that the District currently owns, or along existing traveled road rights of way, utility easements, or potentially property to be purchased fee simple by the District for these efforts.

During this preliminary evaluation phase, RIVERCREST will also coordinate with the District and their billing coordinator (Jonathan Creek Water District) to evaluate historical water billing records for the areas tributary to each lift station's collection system. This information will be made available for use as a baseline for the proposed lift station sizing and design parameters.

II. Surveying & Preliminary Design

The RIVERCREST team will conduct a field survey of the project limits for the following:

- a. Lift Station No. 1 – Cherokee Lane
- b. Lift Station No. 2 – Willow Pond
- c. Lift Station No. 3 – Brass Lantern
- d. Lift Station No. 4 – Catholic Church
- e. Lift Station No. 5 – Lakeland Resort
- f. Effluent force main alignments for each lift station – although the scope of work does not include the replacement of the force mains, a cursory topographic survey of the existing force mains is required to properly evaluate the hydraulic conditions at each lift station.

The project's field survey phase will consist of:

- Completing KY 811 BUD calls and coordination of field utility locates
- Establishing project survey control to KY State Plane coordinate system
- Collecting survey data including existing lift station structures, panels and fencing, edges of pavement, visible property/right-of-way corners, existing marked utility information, and general topographic data.
- Utilizing GPS or conventional survey techniques set up on the established control monuments. The horizontal control datum will be referenced to Kentucky State Plane South Zone for GIS compatibility. Vertical control is typically referenced to NAVD88 datum.
- Obtaining geotechnical soil borings and/or geologic reviews of USGS Geologic Quadrangle mapping to evaluate subsurface characteristics at critical lift station locations

The preliminary design process will consist of:

- Developing preliminary lift station replacement drawings
- Evaluating existing utilities, property limits and ownership

- Developing and reviewing existing ground surface models and geotechnical data
- Developing plan/profile sheets associated with the proposed lift stations and existing force mains
- Evaluating tie-in locations
- Conducting on site review with Owner and operations staff
- Issuing final design recommendations based on engineering judgment and feedback from meeting held with Owner and operations staff
- Prepare and deliver a preliminary opinion of probable construction cost.

III. Final Design & Permitting Phase

Upon receiving the District's approval of the preliminary design concepts, RIVERCREST will update design documents and complete final construction plans. Design drawings typically include the following:

- Cover Sheet
- General Notes & Location Map
- Geotechnical Sheet
- Project Pay Item Quantity Summary Sheet
- Lift Station Site Plans
- Force Main Alignment Plan & Profiles
- Existing Lift Station Abandonment Plans
- Construction Details
- Electrical Details

Plan sheets are typically developed at minimum 1" = 50' horizontal scale.

RIVERCREST will utilize standard technical specifications for completion and submittal of a standard KY Division of Water – Wastewater Construction permit application package. This submittal typically includes design plans, technical specifications, construction permit application and related submittal documents. Due to the nature and configuration of this project, RIVERCREST does not anticipate the need to prepare and submit KY Transportation Cabinet encroachment permit applications or encroachment permit (easement packages) to the Tennessee Valley Authority (TVA) prior to construction.

Additional permitting services such as endangered species studies, critical habitat studies, floodplain permitting, and historical landmark or archaeological studies have not been included in our proposed scope of work. These studies can be added to our scope later at the District's request, with our service fees being adjusted on an agreed lump sum or hourly T&M basis.

IV. Utility Easement Development & Acquisition

RIVERCREST anticipates the need to prepare and secure additional utility easements for completion of the project's construction phase. Our anticipations are based upon site reviews conducted at each lift station location and the site fencing boundaries. RIVERCREST proposes to prepare up to five (5) easement descriptions for review by the District's attorney.

RIVERCREST's surveying sub consultant will certify each description prior to the District's legal counsel preparing the proper easement acquisition documents. For the purposes of this proposal, RIVERCREST assumes that any required easements will be secured by the District. If the District desires that RIVERCREST participate in the acquisition of these properties, we can certainly accommodate the request and modify our scope of work / service fees on an agreed upon lump sum or hourly T&M basis.

V. Procurement Services

RIVERCREST will prepare a project manual complete with standard contract and procurement documents for the District's use in obtaining competitive construction bids for the replacement and/or rehabilitation of the five (5) existing lift stations. RIVERCREST will work with the District to develop one (1) general contract procurement package consisting of plans, specifications, wage rates, and documentation conforming to Delta Regional Authority (DRA) funding requirements. RIVERCREST will prepare an advertisement for bids and forward to the local newspaper, local Association of General Contractors (AGC) office in Paducah, and surrounding plan rooms if requested. Our proposal assumes that the District will accept all direct expenses and invoices for advertising the project. RIVERCREST will also coordinate with and upload the construction documents to Paducah Blueprint & Supply for document reproduction and distribution to interested bidders.

RIVERCREST will coordinate the bidding process, respond to prospective bidder inquiries, issue addenda if necessary, open and tabulate bids received, and prepare a written recommendation letter addressing contract award. Upon the District's approval, we will also prepare the contract documents between the District and the selected contractor and forward to all parties for formal contract execution. RIVERCREST assumes that the District will coordinate with the Purchase Area Development District (PADD) office for the administration of the DRA funds. We understand this will include the PADD forwarding appropriate DRA procurement documents to RIVERCREST's attention prior to the procurement process.

VI. Construction Engineering & Closeout

RIVERCREST's project manager will receive, review and comment on material and shop drawings submittals. Prior to initiating construction, survey crews will field stake the proposed construction features, including, critical features of each lift station structure, adjacent manholes, valve vaults, and the centerline of proposed force main piping. We will also stake the ends of bores and encasements (if required). Our proposal assumes that we will stake the project alignment/features once. All remedial or additional staking requested by the Contractor or Owner can be provided on a time & materials basis.

Upon completion of field staking, RIVERCREST's project manager will schedule and conduct a pre-construction meeting with the selected general contractor, major subcontractors, and the District's operations staff. Our project manager will review the construction schedule, project communication roles, permitting and property constraints, plans and details, pay item summaries, pay request formats and critical dates, and any additional information deemed useful by the District. We assume that a representative of the PADD office will attend this meeting to discuss any requirements for the DRA funds.

RIVERCREST will provide construction engineering services during the active construction period as well as throughout the project closeout period. Services typically include close coordination with the District, Contractor, and the project inspector on project activities. Attending and coordinating periodic progress meetings, processing Contractor's monthly pay requests, final punch list inspection, KDOW certification, project closeout, and record drawing development.

VII. Construction Observation

RIVERCREST estimates our construction representative will be on site approximately six (6) hours per day during active construction activity. We have also allocated two (2) hours per day for preparation, travel, document preparation, and photographic logging of daily construction activity. We estimate our field personnel will be actively involved with the construction process, five (5) days per week for a project duration of 16 calendar weeks. RIVERCREST proposes to provide construction inspection services to you on an hourly time & materials basis. Only time and expenses while actively performing on the District's project will be invoiced.

During this construction phase, our project representative will track daily pay item quantities, prepare detailed field book sketches for the lift station structure and force main installations, log daily photos of the construction activities, assist with interpretation of the project plans and specifications, and coordinate with District operations staff for required system shut-downs, pump and conveyance line testing, and tie-ins.

VIII. Proposed Fee

Our proposed engineering fee is divided into Lump Sum work descriptions for the preliminary evaluation, preliminary design, surveying, final design / permitting items, and procurement services. We propose to complete work associated with construction engineering & closeout, and periodic construction observation services on an Hourly T&M basis as noted below:

• Preliminary Evaluation (LS)	\$2,000.00
• Preliminary Design & Surveying (LS)	\$9,700.00
• Final Design & Permitting (LS)	\$15,500.00
• Procurement (LS)	\$3,200.00
• Easement Development	\$2,700.00
• Construction Engineering & Closeout (Hrly)	\$13,400.00
• Construction Observation (Hrly)	\$38,000.00
• <u>Direct Expenses – Survey/Geo/Electrical/Mileage</u>	<u>\$15,000.00</u>
Total Proposed Fee	\$99,500.00

IX. Schedule

We estimate that the engineering services for the project as described herein can begin within 2 weeks following execution of an engineering services contract, and can be completed on the general timeframe as noted below:

Preliminary Evaluation	2 weeks
Preliminary Design & Surveying	4 weeks
Final Design	4 weeks
Permitting	8 weeks
Procurement Phase	5 weeks
Construction Phase	16 weeks
Project Closeout	2 weeks

Once you have had an opportunity to review our proposal, please contact me to discuss any concerns or questions you may have. If the District is agreeable to starting this work in accordance with this proposal, please sign below and return to us for initiating work.

Once we receive your approval, RIVERCREST will prepare an engineering services contract for your review and execution. Thank you for this opportunity, and we look forward to continuing our relationship with the District.

Sincerely,
RIVERCREST ENGINEERING, INC.



Charles D. McCann II, P.E.
Project Manager

APPROVED BY:


Mr. Kelly Wilson - Chairman
Marshall County Sanitation District No. 1