



September 4, 2018

Hon. Kevin Neal – Judge Executive
Marshall County Fiscal Court
1101 Main Street
Benton, KY 42025

**Re: Engineering Services Proposal
Southwest One Industrial Development
Water & Sewer Improvements
Benton, Marshall County, KY**

Judge Neal:

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 area, mapping, and information presented to us during our previous correspondence and meetings. The following provides an outline of the engineering services and associated fees proposed for the extension of water and sewer services to the SOUTHWEST ONE (SWO) Industrial development. 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 Development & Negotiation
- e) Construction Contract Procurement
- f) Construction Engineering & Closeout
- g) Construction Observation.

Based on our previous correspondence and review of the City of Benton's existing water and sewer utilities, RIVERCREST understands this project will include installation of the following infrastructure,

- a) approximately 3,500 l.f. of 15-inch interceptor sewer
- b) estimated 200 gpm capacity SWO industrial development duplex wastewater lift station
- c) approximately 15,000 l.f. of 6-inch force main from the SWO site to the proposed interceptor
- d) approximately 5,000 l.f. of new 10-inch water main from the City's U.S. 641 tank to the SWO site
- e) relocation of the County's existing booster pump station from Old Symsonia Road.

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

I. Preliminary Evaluation

RIVERCREST will prepare GIS level preliminary mapping for the project and will coordinate with our surveying sub-consultant and the Marshall County PVA, to review adjacent property

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

ownership information throughout the project corridors, including existing easements, platted properties/subdivisions, and available rights-of-way for the water and sewer improvements. Detailed grantor/grantee searches, will be provided by our surveying sub-consultant (On Point Geomatics – OPG) at a later stage as required based on the final design alignments. In addition to this property research, RIVERCREST will coordinate with member utility companies (Benton Gas and AT&T) to obtain available mapping and record drawings. This step will aid in identifying potential conflicts ahead of the field surveying phase.

Following this initial review, RIVERCREST will schedule on site meetings with your staff, City of Benton staff, and our surveying sub-consultant, OPG. The intent of these meetings will be to obtain a consensus and understanding of the chosen project corridors prior to our surveyor initiating the topographic survey. RIVERCREST understands that topographic surveys will be required for the proposed water main, booster pump station site, interceptor sewer, force main, and the lift station site. These surveys will be imperative to identifying the existing infrastructure, topography, utilities, available property limits, which will be required during the subsequent phases of this project.

II. Survey Coordination & Preliminary Design

The RIVERCREST team will conduct a field survey of the project limits as described previously. The survey will generally consist of detailed topographic surveying of a 18,500-foot by 40-foot-wide corridor, booster pump station site, and lift station site, including surveys in easement areas for the interceptor sewer, and along right of ways and the SWO site for the force main and water main extension work. A copy of the previously prepared water and sewer planning map has been included with the proposal for your use and reference.

The project's field survey phase will consist of:

- Completing KY 811 BUD calls and coordination of field utility locates
- Establishing project survey control and benchmarks to KY State Plane coordinate system
- Collecting survey data including, building corners, miscellaneous structures/signage, edges of pavement, visible property/right-of-way corners, existing marked utility information, culverts, driveways, ditch/break lines, large trees, 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 the lift station location.

The preliminary design process will consist of:

- Developing water main, interceptor sewer, force main alignment, lift station site plan, and booster pump station site plan 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 water main, interceptor sewer, lift station and force main

- Evaluating tie-in locations
- Conducting on site review with you, Benton operations staff, and Marshall County Industrial Development representatives
- Issuing design recommendations based on engineering judgment and feedback from meeting
- Prepare and deliver a preliminary opinion of probable construction cost.

Based on previous correspondence and meetings with KY Transportation Cabinet District 1 staff, RIVERCREST understands that KYTC approves of the installation of utilities within existing state right of ways along U.S. Highway 641 throughout the project corridor. During this phase, and prior to developing encroachment permit submittals, RIVERCREST staff plans to meet with KYTC officials, AT&T, and Benton (Water, Sewer, Gas) utilities to obtain a consensus on the design alignments and sequencing of the utility construction.

III. Final Design & Permitting Phase

Upon receiving approvals from your office, and City of Benton, for 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
- Water Main Alignment Plan & Profiles
- Booster Pump Station Site Plan & Details
- Interceptor Sewer Alignment Plans & Profiles
- Lift Station Site Plan
- Force Main Alignment Plan & Profiles
- 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 two (2) standard KY Division of Water – Wastewater Construction permit and Water Line Extension application packages. These submittals typically include design plans, technical specifications, construction permit applications and related submittal documents. Due to the nature and configuration of this project, RIVERCREST anticipates the need to prepare and submit KY Transportation Cabinet encroachment permit applications prior to construction.

Additional permitting services for securing environmental approvals through the U.S. Fish & Wildlife Service, Army Corps of Engineers, Kentucky Heritage Council, NRCS, and Division of Water Floodplain & Water Quality Certification Sections are not anticipated and have been excluded from this services proposal. Also, permitting services such as endangered species studies, critical habitat studies, and historical landmark or archaeological studies have not been included in our proposed scope of work. These permitting services and studies can be added to

our scope later at the Fiscal Court'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 utility easements for completion of the project's construction phase, primarily focused on the interceptor sewer corridor. Our anticipations are based upon site and available PVA data reviews along the proposed corridors. RIVERCREST proposes to prepare up to thirty (30) easement descriptions for review by the City's attorney (as Benton will ultimately own and operate the proposed infrastructure). RIVERCREST's surveying sub consultant will review and approve each description prior to the City'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 RIVERCREST team.

Once the final easement documents are obtained from City legal counsel, RIVERCREST will provide three good faith efforts to negotiate the easements on behalf of the City. These efforts will include, initial contact through mailing of the easement package, telephone contact (when possible), and up to two on site meetings with the property owner(s). If successful, we will forward the easement documents to the City for recording. If unsuccessful after three attempts, we will deliver the documents to you, and the City, along with our discussion records and await further direction. For the purposes of this proposal, our easement negotiation scope excludes exercises beyond the three good faith attempts.

To keep the Fiscal Court abreast of our progress, RIVERCREST will prepare and submit bi-weekly status reports. In the event additional easement development and/or negotiations become necessary, the RIVERCREST team can conduct these activities in accordance with our established time & materials service rates.

V. Procurement Services

RIVERCREST will prepare a project manual complete with standard contract and procurement documents for the Court's use in obtaining competitive construction bids for the water and sewer improvements project. RIVERCREST will work with you to develop one (1) general contract procurement package consisting of plans, specifications, wage rates, and documentation. 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 MCFC will accept all direct expenses and invoices for advertising the project. RIVERCREST will also coordinate with and upload the construction documents to River City Printing, LLC (in Paducah) 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, make necessary reference calls, prepare a letter of award recommendation, coordinate with Contractor, DOW, and the MCFC for completion and execution of contract documents. As of the date of this proposal, RIVERCREST assumes that the MCFC will provide funding for these improvements, and no additional funding agency coordination will be required. If, following approval of this proposal, the MCFC receives

State or Federal funding for these efforts, RIVERCREST can provide the additional procurement services at the Fiscal Court's request, with our service fees being adjusted on an agreed lump sum or hourly T&M basis.

It is estimated that RIVERCREST would participate in three (3) project meetings: one to review the contract plans and procurement package with the City and MCFC prior to soliciting bids; the second being a public meeting to inform the residents of the upcoming project, and to answer questions regarding the project, and the third being the bid opening.

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 centerline of the proposed water main, interceptor sewer, and force main on approximately 100-foot intervals, all hydrants, valves, and layout the proposed lift station and booster pump station sites. We will also stake significant changes in horizontal alignment, bores, encasements, tie-ins and manhole locations. Our proposal assumes that we will stake the project alignment 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, associated subcontractors, engineering representatives, City of Benton, and MCFC staff. Our project manager will review schedule, project communication roles, plans, details, and any additional information deemed useful.

RIVERCREST will provide construction engineering services including, coordination with MCFC and City staff, contractor, and the inspector on project activities and progress, coordination and attendance at monthly progress meetings, processing of monthly pay requests and coordination of required Contractor submittals and payroll certifications, field walkthrough/punchlist inspection, KDOW certification, project closeout, and record drawing development and distribution services.

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 30 calendar weeks.

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

VIII. Proposed Fee

Our proposed engineering fee is divided into Lump Sum work descriptions for the preliminary evaluation, surveying & preliminary design, final design / permitting, procurement, construction engineering & closeout, and periodic construction observation services as noted below:

• Preliminary Evaluation	\$11,100.00
• Survey Coordination & Preliminary Design	\$40,700.00
• Final Design & Permitting	\$55,100.00
• Easement Development & Negotiation	\$18,000.00
• Procurement	\$5,500.00
• Utility Coordination (KYTC, City, AT&T)	\$4,600.00
• Construction Engineering & Closeout	\$42,100.00
• Construction Observation	\$90,000.00
• <u>Direct Expenses – Survey/Geo/Electrical/Mileage</u>	<u>\$37,400.00</u>
Total Proposed Fee	\$304,500.00

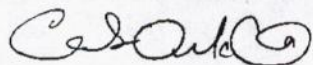
IX. Schedule

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	4 weeks
Preliminary Design & Surveying	8 weeks
Final Design	4 weeks
Permitting	4 weeks
Easements	8 weeks
Procurement Phase	5 weeks
Construction Phase	30 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 Fiscal Court is agreeable to starting this work in accordance with this proposal, please sign below, and return to us for initiating work. As we are currently working under a professional engineering services agreement with the Marshall County Fiscal Court, we understand that we will continue to operate under this agreement for the duration of this project.

Sincerely,
RIVERCREST ENGINEERING, INC.

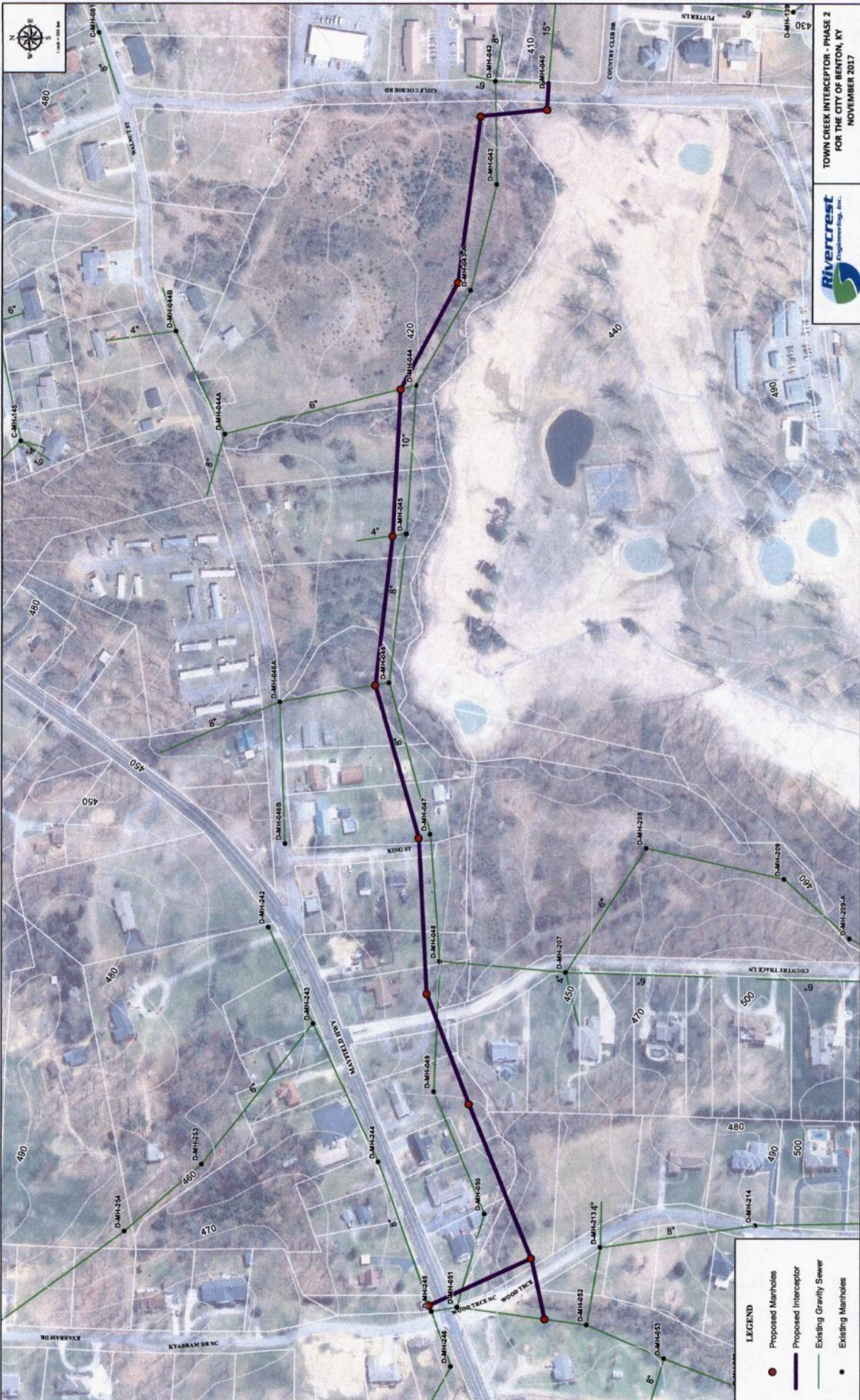


Charles D. McCann II, P.E.
Project Manager

APPROVED BY:



Hon. Kevin Neal – Judge Executive
Marshall County Fiscal Court



TOWN CREEK INTERCEPTOR - PHASE 2
FOR THE CITY OF BENTON, KY
NOVEMBER 2017



LEGEND

- Proposed Manholes
- Proposed Interceptor
- Existing Gravity Sewer
- Existing Manholes



Clean Water Project Profile

Legal Applicant: **City of Benton**

Project Title: **TOWN CREEK INTERCEPTOR SEWER - PHASE 2**

Project Number: **SX21157037** [View Map](#)

Submitted By: **PUADD**

Funding Status: **Not Funded**

Primary County: **Marshall**

Project Status: **Approved**

Planning Unit: **Marshall**

Project Schedule: **0-2 Years**

Multi-County: **No**

E-Clearinghouse SAI:

ECH Status:

Applicant Entity Type: **Incorporated City**

ADD WMC Contact: **James Smith**

Date Approved (AWMPC): **12-01-2017**

Project Description:

The City of Benton is currently under an EPA Agreed Order for violations related to sanitary sewer system overflows and pollutant removal at their wastewater treatment plant due to excessive levels of infiltration and inflow within their collection system. While the City is focusing efforts on removing I/I from their collection system, additional system improvements are necessary for proper containment and conveyance of the wastewater to the City's WWTP. This project includes the extension of the existing 15" Town Creek interceptor sewer approximately 3,400 l.f. to the west to relieve pressures on an existing rehabilitated 8" sewer main located in the southwestern portion of the City's system.

Need for Project:

Briefly describe how this project promotes public health or achieves and/or maintains compliance with the Clean Water Act or Safe Drinking Water Act:

The existing 8" sewer main is currently operating at maximum flow capacities, which is limiting growth of the City upstream of this area. I/I has also been an issue in the areas directly upstream of the existing 8" sewer main, which the City continues to address. Overflows from this sewer enter directly into the neighborhoods and adjacent Town Creek, causing an environmental and public nuisance. Installation of this interceptor sewer is strongly needed to comply with current EPA sanctions.

Project Alternatives:

Alternate A:

Maintenance & Sewer Rehab

Alternate B:

Legal Applicant:

Entity Type: **Incorporated City**

PSC Group ID: **8809400**

Entity Name: **City of Benton**

Web URL:

Office EMail: bcooper@cityofbenton.org

Office Phone: **270-527-8677**

Toll Free:

Fax: **270-527-2251**

Mail Address Line 1: **1009 Main St**

Phys Address Line 1:

Mail Address Line 2:

Phys Address Line 2:

Mail City, State Zip: **Benton, KY 42025**

Phys City, State Zip:

Contact: **Bethany Cooper**

Financial Contact:

Auth Official: **Rita Dotson**

Contact Title: **City Clerk**

Financial Contact Title:

Auth Official Title: **Mayor**

Contact EMail: bcooper@cityofbenton.org

Financial Contact EMail:

Auth Official EMail: rdotson@cityofbenton.org

Contact Phone: **270-527-6483**

Financial Contact Phone:

Auth Official Phone: **270-527-8677**

Data Source: Kentucky Department for Local Government

Date Last Modified: 07.03.2018



Clean Water Project Profile

SX21157037 - City of Benton
TOWN CREEK INTERCEPTOR SEWER - PHASE 2

Project Administrator (PA) Information

Name: **Bethany Cooper**
 Title: **City Treasurer**
 Organization: **City of Benton**
 Address Line 1: **1009 Main St**
 Address Line 2:
 City: **Benton** State: **KY** Zip: **42025**
 Phone: **270-527-8677** Fax: **270-527-2251**

Applicant Contact (AC) Information

Name: **Bethany Cooper**
 Title: **City Treasurer**
 Organization: **City of Benton**
 Address Line 1: **1009 Main St**
 Address Line 2:
 City: **Benton** State: **KY** Zip: **42025**
 Phone: **270-527-8677** Fax: **270-527-2251**

Estimated Budget

Project Cost Categories:

Cost Category	Cost
Administrative Expenses:	\$ 23,090
Legal Expenses:	
Land, Appraisals, Easements:	
Relocation Expenses & Repayments:	
Planning:	
Engineering Fees - Design:	\$ 50,798
Engineering Fees - Construction:	\$ 18,000
Engineering Fees - Inspection:	\$ 32,789
Engineering Fees - Other:	\$ 13,000
Construction:	\$ 461,800
Equipment:	
Miscellaneous:	
Contingencies:	\$ 89,923
Total Project Cost:	\$ 689,400

Construction Cost Categories:

Cost Category	Cost
WWTP Secondary Portion:	
WWTP Advanced Portion:	
Inflow & Infiltration (I&I) Correction:	
Major Sewer Rehabilitation:	
Collector Sewers:	
Interceptor Sewers, Including Pump Stations:	\$ 461,800
Combined Sewer Overflow Correction:	
NPS Urban:	
Non-Categorized Cost:	
Total Construction Cost:	\$ 461,800

Total Sustainable Infrastructure Costs:

Note: Total Sustainability Infrastructure Costs are included within construction and other costs reported in this section. This breakout is provided for SRF review purposes.

Project Funding Sources:

Total Project Cost: **\$689,400**
 Total Committed Funding: **\$0**
 Funding Gap: **\$689,400 (Not Funded)**

This project will be requesting SRF funding for fiscal year 2020.

Estimated Project Schedule:

Facility Plan Approval Date:
 Est. Environmental Review Submittal Date: **04-30-2018**
 Estimated Bid Date: **08-31-2018**
 Estimated Construction Start Date: **11-28-2018**
 Estimated Construction Completion Date: **04-30-2018**

Funding Source	Loan or Grant ID	Fiscal Year	Amount	Status	Applicable Date
KIA SRF Fund A Loan (CW)	A19-043	2019	\$689,400	Ranked	6/18/2018
Total Committed					

Funding Source Notes:



Clean Water Project Profile

SX21157037 - City of Benton
TOWN CREEK INTERCEPTOR SEWER - PHASE 2

The following systems are beneficiaries of this project:

KY0021172 Benton Water & Sewer System

Note: Check mark indicates primary system for this project.

Project Ranking by AWWPC:

Regional Ranking(s): _____

Planning Unit Ranking: _____

Total Points: _____

- Plans and specs have been sent to DOW.
- Plans and specs have been reviewed by DOW.
- Plans and specs have been sent to PSC.
- Plans and specs have been reviewed by PSC.

Economic, Demographic and Geographic Impacts

Economic Impacts	
Jobs Created:	
Jobs Retained:	

*Demographic Impacts (GIS Census Overlay)			
Serviceable Demographic	Project Area	Included Systems	Included Utilities
Population:		4,765	4,765
Households:		2,211	2,211
MHI:		\$43,052	*\$43,052
MHI MOE		\$15,557	*\$15,557
MOE as Pct:		36.0%	36.0%
**NSRL:		1	1

Population and household counts are based on 2010 census block values from the SF1 (100%) dataset.

MHI Source is from the American Community Survey 2012-2016 5Yr Estimates (Table B19013) *(for the primary system operated by the above listed beneficiary utilities).

MHI MOE = Med HH Income Margin of Error.

** NSRL (Non-Standard Rate Levels):

- 0 = Income above Kentucky MHI (KMHI).
- 1 = Income between 80% KMHI and KMHI.
- 2 = Income less than or equal to 80% KMHI.
- KMHI = \$44,811
- 80% KHMI = \$35,849

New Customers	
New Residential Customers:	
New Commercial Customers:	
New Institutional Customers:	
New Industrial Customers:	

New or Improved Service		
Service Demographic	Survey Based	Census Overlay*
To Unserved Households:		
To Underserved Households:		
To Total Households:		
** Cost Per Household:		

* GIS Census block overlay figures are estimates of population and households potentially served by systems and projects based on a proximity analysis of relevant service lines to census block boundaries.

** Cost per household is based on surveyed household counts, not GIS overlay values.

Geographic Impacts For Project Area	
Counties	
Marshall	
Legislative Districts	
District Name	Legislator
House 006	Will Coursey
Senate 02	Danny Carroll
Congressional 1	James Comer
Groundwater Sensitivity Zones	
3	
HUC 10 Watersheds	
HUC Code	Watershed Name
0604000604	Lower Clarks River

Geographic Impacts For Included System(s)	
Counties	
Marshall	
Legislative Districts	
District Name	Legislator
House 006	Will Coursey
Senate 02	Danny Carroll
Congressional 1	James Comer

Potential Impaired Watershed Designations				
303d	305b	Priority Watershed	Special Use Waters	Exceptional Use Waters
No	No	Yes	No	No

Note: Impaired Watershed Designations only indicate that mapped components for this project lie within a HUC-14 watershed boundary containing impaired waterbody features. An affirmative indication for any designation will require a detailed analysis of the project to determine if any of the proposed project components will actually have a positive impact on the relevant impaired features.



Clean Water Project Profile
 SX21157037 - City of Benton
 TOWN CREEK INTERCEPTOR SEWER - PHASE 2

CW Specific Impacts:

Wastewater Volumes (MGD):

For this project:	
For included system(s):	1.000
Reduced by this project:	

Other CW Specific Impacts:

- This project provides regionalization and/or consolidation of wastewater treatment systems.
- This project will eliminate a package treatment plant that is more than 25 years old.
- This project will eliminate a package treatment plant that has received notices of violations within the last two state fiscal years.
- This project includes an on-site mound, and/or decentralized WW treatment system.
- This project is necessary to achieve full or partial compliance with a court order, agreed order, or a judicial or administrative consent decree.
Agreed Order Number: 1048953
- Primary system has not received any CWA Notices of Violation within the previous state fiscal year-July through June, i.e. July 2014 – June 2015).
- This project is consistent with the approved facility plan.
- This project will have a positive impact on drinking water sources within a 5 mile radius.

* Drinking water sources impacted by this project:

City of Benton

Planning Needs:

- Combined Sewer Overflow (CSO) Correction.
- Sanitary Sewer Overflow (SSO) Correction.
- Replacement or Rehabilitation of Aging Infrastructure.
- New Treatment Plant.
- New Collector Sewers and Appurtenances.
- Decentralized Wastewater Treatment Systems.
- Upgrade to Advanced Treatment.
- Rehab/Upgrade/Expansion of Existing Treatment Plant.
- New Interceptor Sewers and Appurtenances.
- Storm Water Control.
- Non-Point Source (NPS) Pollution Control.
- Recycled Water Distribution.
- Planning.
- Other (specify):

Project Inventory (Mapped Features):

There are no mapped point features for this project.



Clean Water Project Profile
 SX21157037 - City of Benton
 TOWN CREEK INTERCEPTOR SEWER - PHASE 2

Mapped Line Features						
DOW Permit ID	Line Type	Purpose	Activity	Size (in.)	Material	Length (LF)
KY0021172	GRAVITY	COLLECTOR	EXTENSION	15.00	PVC	3,360
					Total Length	3,360

Administrative Components:

- Planning
 Design
 Construction
 Management

Wastewater Treatment Plants Eliminated:

- This project includes the elimination of wastewater treatment plant(s).

Sanitary Sewer Components:

- This project includes a new wastewater treatment plant.
 Proposed design capacity (MGD): **0.000**
- This project includes an expansion of an existing wastewater treatment plant.
 Current design capacity (MGD): **0.000**
 Current treatment volume (MGD): **0.000**
 Proposed design capacity (MGD): **0.000**
- This project includes rehabilitation of an existing wastewater treatment plant.
- This project includes upgrades to an existing wastewater treatment plant.
- This project includes rehabilitation or replacement of aging infrastructure.
 Total length of replaced infrastructure (LF): **0**
- This project includes new collector sewers.
 Total length of replaced infrastructure (LF): **3,360**
- This project includes new interceptor sewers.
 Total length of new interceptor sewer (LF): **0**
- This project includes elimination of existing sewer system components.
 Number of failing septic systems eliminated:
 Number of non-failing septic systems eliminated:



Clean Water Project Profile
 SX21157037 - City of Benton
 TOWN CREEK INTERCEPTOR SEWER - PHASE 2

Sustainable Infrastructure - Green Infrastructure:

Green stormwater infrastructure includes a wide array of practices at multiple scales that manage wet weather and that maintains and restores natural hydrology by infiltrating, evapotranspiring and harvesting and using stormwater. On a regional scale, green infrastructure is the preservation and restoration of natural landscape features, such as forests, floodplains, and wetlands, coupled with policies such as infill and redevelopment that reduce overall imperviousness in a watershed. On the local scale, green infrastructure consists of site and neighborhood-specific practices, such as:

Component	Cost
<input type="checkbox"/> Implementation of green streets.	
<input type="checkbox"/> Wet Weather management systems for parking areas.	
<input type="checkbox"/> Implementation of comprehensive urban forestry programs.	
<input type="checkbox"/> Stormwater harvesting and reuse.	
<input type="checkbox"/> Downspout disconnection.	
<input type="checkbox"/> Comprehensive retrofit programs designed to keep wet weather discharges out of sewer systems.	
<input type="checkbox"/> Establishment or restoration of riparian buffers, floodplains, wetlands or other natural features.	
<input type="checkbox"/> Management of wetlands.	
<input type="checkbox"/> Purchase of land or easements on land that has a direct benefit to water quality.	
Total Green Infrastructure Cost:	\$0

** Indicates a business case may be required for this item.*

There are no Green Infrastructure components specified for this project.

Sustainable Infrastructure - Water Efficiency:

The use of improved technologies and practices to deliver equal or better services with less water. Water efficiency encompasses conservation and reuse efforts, as well as water loss reduction and prevention, to protect water resources for the future. Examples include:

Component	Cost
<input type="checkbox"/> Installing or retrofitting water efficient devices such as plumbing fixtures and appliances (toilets, showerheads, urinals).	
<input type="checkbox"/> Installing any type of water meter in previously unmetered areas (can include backflow prevention if in conjunction with meter replacement).	
<input type="checkbox"/> Replacing existing broken/malfunctioning water meters with AMR or smart meters, meters with leak detection, backflow prevention.	
<input type="checkbox"/> Retrofitting/Adding AMR capabilities or leak equipment to existing meters.	
<input type="checkbox"/> Developing water audit and conservation plans, which are reasonably expected to result in a capital project.	
<input type="checkbox"/> Recycling and water reuse projects that replace potable sources with non-potable sources (Gray water, condensate, and wastewater effluent reuse systems, extra treatment or distribution costs associated with water reuse).	
<input type="checkbox"/> Retrofit or replacement of existing landscape irrigation/agricultural systems to more efficient landscape/agricultural irrigation systems (rain and moisture sensing equipment).	
<input type="checkbox"/> Water meter replacement with traditional water meters.*	
<input type="checkbox"/> Projects that result from a water audit or water conservation plan.*	
<input type="checkbox"/> Storage tank replacement/rehabilitation to reduce water loss.*	
<input type="checkbox"/> New water efficient landscape/agricultural irrigation system, where there currently is not one.*	
Total Water Efficiency Cost:	\$0

** Indicates a business case may be required for this item*

There are no Water Efficiency components specified for this project.



Clean Water Project Profile
 SX21157037 - City of Benton
 TOWN CREEK INTERCEPTOR SEWER - PHASE 2

Sustainable Infrastructure - Energy Efficiency:

Energy efficiency is the use of improved technologies and practices to reduce the energy consumption of water projects, use energy in a more efficient way, and/or produce/utilize renewable energy. Examples include:

Component	Cost
<input type="checkbox"/> Renewable energy projects such as wind, solar, geothermal, and micro-hydroelectric, and biogas combined heat and power systems that provide power to a POTW.	
<input type="checkbox"/> POTW-owned renewable energy projects.	
<input type="checkbox"/> Collection system infiltration/inflow (I/I) detection equipment.	
<input type="checkbox"/> POTW energy management planning, including energy assessments, energy audits, optimization studies, and sub-metering of individual processes to determine high energy use areas.	
<input type="checkbox"/> Projects that achieve a reduction in energy consumption (pumps, motors).*	
<input type="checkbox"/> Projects that cost effectively eliminate pumps or pumping stations.*	
<input type="checkbox"/> I/I correction projects that save energy from pumping and reduced treatment costs.*	
<input type="checkbox"/> I/I correction where excessive groundwater infiltration is contaminating the influent requiring otherwise unnecessary treatment processes.*	
<input checked="" type="checkbox"/> Replacing old motors with premium energy efficiency motors.*	\$55,000
<input type="checkbox"/> Upgrade of POTW lighting to energy efficient sources.*	
<input type="checkbox"/> SCADA systems where substantial energy savings can be demonstrated.*	
<input type="checkbox"/> Variable Frequency Drive (VFD) controllers where substantial energy savings can be demonstrated.*	
Total Energy Efficiency Cost:	\$55,000

* Indicates a business case may be required for this item.

...



Clean Water Project Profile
 SX21157037 - City of Benton
 TOWN CREEK INTERCEPTOR SEWER - PHASE 2

Sustainable Infrastructure - Environmentally Innovative Infrastructure:

Environmentally innovative projects include those that demonstrate new and/or innovative approaches to delivering services or managing water resources in a more sustainable way. Examples include:

Component	Cost
<input type="checkbox"/> Total integrated water resources management planning likely to result in a capital project.	
<input type="checkbox"/> Utility sustainability plan consistent with EPA's sustainability policy.	
<input type="checkbox"/> Greenhouse gas inventory or mitigation plan and submission of a GHG inventory to a registry as long as it is being done for an SRF eligible facility.	
<input type="checkbox"/> Planning activities by a POTW to prepare for adaptation to the long-term effects of climate change and/or extreme weather.	
<input type="checkbox"/> Construction of US Building Council LEED certified buildings, or renovation of an existing building on POTW facilities.	
<input type="checkbox"/> Decentralized wastewater treatment solutions to existing deficient or failing onsite wastewater systems.	
<input type="checkbox"/> Constructed wetlands projects used for municipal wastewater treatment, polishing, and/or effluent disposal.*	
<input type="checkbox"/> Projects that result from total/integrated water resource management planning consistent with the decision criteria for environmentally innovative projects and that are CWSRF eligible.	
<input type="checkbox"/> Projects that facilitate adaptation of POTWs to climate change identified by a carbon footprint assessment or climate adaption study.*	
<input type="checkbox"/> POTW upgrades or retrofits that remove phosphorus for beneficial use, such as biofuel production with algae.*	
<input type="checkbox"/> Projects that significantly reduce or eliminate the use of chemicals in wastewater treatment.*	
<input type="checkbox"/> Treatment technologies that significantly reduce the volume of residuals, generation of residuals, or lower the amount of chemicals in the residuals.*	
<input type="checkbox"/> Educational activities and demonstration projects for water or energy efficiency.*	
<input type="checkbox"/> Projects that achieve the goals/objectives of utility asset management plans.*	
<input type="checkbox"/> Sub-surface land application of effluent and other means for groundwater recharge, such as spray irrigation and overland flow.*	
Total Environmentally Innovative Cost:	\$0

** Indicates a business case may be required for this item.*

There are no Environmentally Innovative components specified for this project.

Sustainable Infrastructure - Asset Management:

If a category is selected, the applicant must provide proof to substantiate claims. The documents must be submitted to Anshu Singh (Anshu.Singh@ky.gov) for CW projects

Component
Last Rate Adjustment Date: 03-01-2009 Download Fee Schedule
Rate Adjustment Age: 118 months
System's monthly water bill, based on 4,000 gallons, as a percentage of MHI: 0.52%
<input type="checkbox"/> The system(s) has a Capital Improvement Plan or similar planning document.
<input type="checkbox"/> The system(s) involved in this project have specifically allocated funds for the rehabilitation and replacement of aging and deteriorating infrastructure.

Project Status: Approved

Date Approved: 12-01-2017

Date Revised:

INDUSTRIAL PROPERTY DEVELOPMENT - WATER & SEWER IMPROVEMENTS
for
the City of Benton, Marshall County, KY

ESTIMATE OF PROBABLE COST - DECEMBER 2017

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	PROPOSED INDUSTRIAL PARK SEWER LIFT STATION - 200 GPM CAPACITY	L.S.	1	\$200,000	\$ 200,000
2	15,000 FT - 8" FORCE MAIN FROM NEW LIFT STATION TO NEW INTERCEPTOR SEWER	L.S.	1	\$600,000	\$ 600,000
3	3,500 FT - 15" INTERCEPTOR SEWER IMPROVEMENTS	L.S.	1	\$500,000	\$ 500,000
4	5,000 FT - 10" WATER MAIN EXTENSION FROM EXISTING WATER TANK TO SITE	L.S.	1	\$150,000	\$ 150,000
5	RELOCATION OF EXISTING WATER BOOSTER PUMP STATION TO TANK SITE	L.S.	1	\$75,000	\$ 75,000
				SUBTOTAL	\$ 1,525,000
				Legal, Administration, Easements (5%)	\$ 76,250
				Engineering Design (9%)	\$ 137,250
				Survey	\$ 15,000
				Permitting	\$ 5,000
				Construction Engineering/Inspection (9%)	\$ 137,250
				Contingencies (15%)	\$ 284,363
				TOTAL ESTIMATE OF PROBABLE COST	\$ 2,180,113



LEGEND

- Booster Pump Station
- PROPOSED WATER LINE
- Existing Water Line
- PROPOSED SEWER
- PROPOSED LIFT STATION
- PROPOSED FORCE MAIN
- ▲ Existing Lift Station
- Existing Gravity Sewer
- Existing Force Main

Rivercrest
 Engineering, Inc.
 1020 U.S. HWY. 68 W
 BENTON, KY, 42023

**INDUSTRIAL PROPERTY
 WATER & SEWER UTILITY
 PLANNING MAP
 BENTON, MARSHALL Co., KY
 DECEMBER 2017**