



Drinking Water Project Profile

Legal Applicant: Grayson County Water District	
Project Title: GCWD East - West Improvements II	
Project Number: WX21085037 View Map	Submitted By: LTADD
Funding Status: Fully Funded	Primary County: Grayson
Project Status: Approved	Planning Unit: Grayson
Project Schedule: 0-2 Years	Multi-County: No
E-Clearinghouse SAI: KY202003100222	ECH Status: Approved
Applicant Entity Type: Water District (KRS 74)	ADD WMC Contact: Mollie Thompson
Date Approved (AWMPC): 06-21-2019	

Project Description:

The Grayson County Water District is proposing to undertake a comprehensive project that will involve improvements to the water treatment plant resulting in better water quality and improvements in the distribution system that will result in more reliable safer water to its customers. Improvements include:

- Add redundant UV to the WTP for Crypto removal
- Upgrade high service pumps
- Add a 3rd GAC vessel
- The 40% of its customer base that relies on water from the City of Leitchfield will be changed over to water from the GCWD WTP. This will eliminate the chronic problem with THM's with the City's water.
- Water lines will be replaced or constructed on: Salt River Road – due to the existing line being too small for the demand; KY 259 North – necessary to make connection with GCWD water source; Duff Road – due to the existing line being too small for the demand; Bypass – new line to serve currently unserved area; and Cross County – new line to make connection to the GCWD water source.
- Rehabilitation of two storage tanks – Detention Center and Clarkson; rehab will include the installation of mixing equipment to improve water quality.
- Rehabilitation of the Salt River pump station; VFD's will be installed to assist with energy efficiency.
- Looping of water lines to improve water quality on KY 259, Bypass, and Cross County
- Installation of security fencing at the WTP, Salt River Pump Station and installation of a radio intercom at the WTP.
- SCADA will be installed at the Salt River PS and as part of the UV installation at the WTP.

The DWSRF is being sought because of the favorable terms to the District. The Median Household Income for Grayson County is \$35,944 which is less than 80% of the state MHI. The District has a Capital Improvement Plan; it is updated annually and presented to the GCWB Board with a budget. The District maintains funds for internal projects to rehab, upgrade and improve its facilities. It conducts water audits and its SCADA is set up to identify water loss. The monthly water bill based on 4,000 gallons is \$39.49 which is 1.3% of the MHI.

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 proposed project will improve efficiency and water quality by upgrading existing treatment components. The proposed project will help address water quality issues outlined in an Agreed Order for TTHM's from purchased water.

Project Alternatives:

Alternate A:

Construct a new treatment facility (not necessary).

Alternate B:

Make upgrades to pumps and filtering as current components fail (not efficient).

Legal Applicant:

Entity Type: **Water District (KRS 74)** PSC Group ID: **22000**

Entity Name: **Grayson County Water District**

Web URL:

Office EMail: gcwd@graysonwater.com

Office Phone: **270-259-2917**

Toll Free:

Fax: **270-230-4302**

Mail Address Line 1: **21 Shull White Rd**

Phys Address Line 1: **21 Shull White Rd**

Mail Address Line 2:

Phys Address Line 2:

Mail City, State Zip: **Leitchfield, KY 42754**

Phys City, State Zip: **Leitchfield, KY 42754**

Contact: **Jeremy Woosley**

Financial Contact:

Auth Official: **Nancy Cain**

Contact Title: **Water District Manager**

Financial Contact Title:

Auth Official Title: **Water District Chairman**

Contact EMail: jwoosley@graysonwater.com

Financial Contact EMail:

Auth Official EMail: gcwd@graysonwater.com

Contact Phone: **270-259-2917**

Financial Contact Phone:

Auth Official Phone: **270-259-2917**

Data Source: **Kentucky Infrastructure Authority**

Date Last Modified: 09.22.2022



Drinking Water Project Profile

WX21085037 - Grayson County Water District
GCWD East - West Improvements II

Project Administrator (PA) Information

Name: **Kevin Shaw**
 Title: **Manager**
 Organization: **Grayson County Water District**
 Address Line 1: **21 Shull White Rd**
 Address Line 2:
 City: **Leitchfield** State: **KY** Zip: **42754**
 Phone: **270-259-2917** Fax: **270-259-2617**

Applicant Contact (AC) Information

Name: **Kevin Shaw**
 Title: **Manager**
 Organization: **Grayson County Water District**
 Address Line 1: **21 Shull White Rd**
 Address Line 2:
 City: **Leitchfield** State: **KY** Zip: **42754**
 Phone: **270-259-2917** Fax: **270-259-2617**

Project Engineer (PE) Information:

- This project requires a licensed Professional Engineer.
 A Professional Engineer has been procured for this project.

Estimated Budget

Project Cost Categories:

Cost Category	Cost
Administrative Expenses:	\$ 10,000
Legal Expenses:	
Land, Appraisals, Easements:	\$ 250,000
Relocation Expenses & Repayments:	
Planning:	\$ 20,000
Engineering Fees - Design:	\$ 308,000
Engineering Fees - Construction:	\$ 77,000
Engineering Fees - Inspection:	\$ 194,000
Engineering Fees - Other:	\$ 30,000
Construction:	\$ 5,765,000
Equipment:	
Miscellaneous:	
Contingencies:	\$ 577,000
Total Project Cost:	\$ 7,231,000

Construction Cost Categories:

Cost Category	Cost
Treatment:	\$ 1,270,000
Transmission & Distribution:	\$ 3,895,000
Lead Remediation:	
Source:	\$ 600,000
Storage:	
Purchase of Systems:	
Restructuring:	
Land Acquisition:	
Non-Categorized:	
Total Construction Cost:	\$ 5,765,000

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: **\$ 7,231,000**
 Total Committed Funding: **\$ 7,231,000**
 Funding Gap: **\$ 0**

- This project will be requesting SRF funding for fiscal year 2024.

Estimated Project Schedule:

Est. Environmental Review Submittal Date: **11-01-2020**
 Estimated Bid Date: **03-01-2022**
 Estimated Construction Start Date: **05-01-2022**
 Estimated Construction Completion Date: **05-01-2023**

Funding Source	Loan or Grant ID	Fiscal Year	Amount	Status	Applicable Date
KIA SRF Fund F Loan (DW)	F21-006	2021	\$ 6,981,000	Withdrawn	09-02-2020
KIA SRF Fund F Loan (DW)	F22-002	2022	\$ 7,231,000	Committed	02-09-2022
Local			\$ 250,000	Anticipated	
Total Committed Funding:			\$ 7,231,000		

Funding Source Notes:

The following systems are beneficiaries of this project:

KY0430616 Grayson County Water District

Note: Check mark indicates primary system for this project.

Project Ranking by AWMP:

Regional Ranking(s):



Drinking Water Project Profile

WX21085037 - Grayson County Water District
GCWD East - West Improvements II

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:	384	16,538	16,537
Households:	229	7,741	7,741
MHI:	\$46,000	\$40,654	*\$40,654
MHI MOE	\$13,001	\$10,841	*\$10,841
MOE as Pct:	28%	27.0%	27.0%
**NSRL:		2	2

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

MHI Source is from the American Community Survey 2017-2021 5 Yr 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 = \$55,454

- 80% KHMI = \$44,363

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:	2,700	229
To Total Households:	2,700	229
** Cost Per Household:	\$2,678	

* 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
Grayson

Legislative Districts

District Name	Legislator
House 018	Samara Heavrin
Senate 05	Stephen Meredith
Congressional 2	Brett Guthrie

Groundwater Sensitivity Zones

HUC 10 Watersheds

HUC Code	Watershed Name
0511000401	Clifty Creek-Rough River
0511000403	Spring Fork-Rough River

Geographic Impacts For Included System(s)

Counties
Butler
Grayson
Hardin
Ohio

Legislative Districts

District Name	Legislator
House 014	Scott Lewis
House 015	Rebecca Raymer
House 018	Samara Heavrin
Senate 05	Stephen Meredith
Senate 10	Matthew Deneen
Congressional 2	Brett Guthrie



Drinking Water Project Profile

WX21085037 - Grayson County Water District
GCWD East - West Improvements II

DW Specific Impacts

- This project relates to a public health emergency.
- This project will assist a non-compliant system to achieve compliance.
- This project will assist a compliant system to meet future requirements.
- This project will provide assistance not compliance related.
- This project is necessary to achieve full or partial compliance with a court order, agreed order, or a judicial or administrative consent decree.
- Primary system has not received any SDWA Notices of Violation within the previous state fiscal year-July through June, i.e. July 2014 – June 2015).
- Primary system has had an action level exceedance (lead concentrations exceed an action level of 15 ppb in more than 10% of customer taps sampled) within the last compliance period.
- Primary system has received a lead trigger level exceedance (lead concentrations exceed a trigger level of 10 ppb in more than 10% of customer taps sampled) within the last compliance period.

Project Readiness - Lead Inventory and Lead Service Line Replacement:

Lead Service Line Inventory:

- A description of goals to be achieved and products to be created (e.g., electronic or GIS database; customer communication tools) when creating a lead service line inventory procedure, including a proposed timeline for achieving each goal.

Lead Service Line Replacement:

- A strategy for informing customers before a LSLR and a template for an agreement with the private property owner to replace the LSL.
- A process for documenting all property owners declining replacement of privately owned portion of LSL.
- A procedure for customers to flush service lines and premise plumbing of particulate lead.
- A proposed plan for conducting LSL replacement utilizing all requested funding.
- A funding strategy for conducting LSLRs utilizing all requested funding.

Project Components - Mapped Point Features

DOW Permit ID	Count	FeatureType	Purpose	Status	Existing Capacity	Proposed Capacity	Units
KY0430616	1	WATER TANK	CLEANING & PAINTING	REHAB			
KY0430616	1	WATER TANK	CLEANING & PAINTING, PIPING CHANGE, MIXING SYSTEM	REHAB			
KY0430616	1	WATER TREATMENT PLANT	ENERGY EFF - SCADA	WTP - UPGRADE	300,000.00		GPD
KY0430616	1	WATER TREATMENT PLANT	PUMP UPGRADE, REDUNDANT UV, ADDITIONAL GAC VESSEL	WTP - UPGRADE	300,000.00		GPD
KY0430616	1	WATER TREATMENT PLANT	SECURITY - WATER TREATMENT PLANT	WTP - UPGRADE	300,000.00		GPD

Project Components - Mapped Line Features

DOW Permit ID	Line Type	Purpose	Activity	Size (in.)	Material	Length (LF)
KY0430616	WATER LINE: FINISHED	DISTRIBUTION	REHAB - REPLACE UNDERSIZED LINES	12.00	PVC	16,140
KY0430616	WATER LINE: FINISHED	TRANSMISSION	EXTENSION	8.00	PVC	2,200
KY0430616	WATER LINE: FINISHED	TRANSMISSION	EXTENSION	12.00	PVC	9,791
KY0430616	WATER LINE: FINISHED	TRANSMISSION	EXTENSION	16.00	PVC	25,734
					Total Length	53,865

Administrative Components:

- Planning
 Design
 Construction
 Management

Regionalization Components and Eliminated Systems/Plants:



Drinking Water Project Profile
WX21085037 - Grayson County Water District
GCWD East - West Improvements II

Public Water Systems Eliminated:

- This project includes the elimination of public water system(s) through merger or acquisition.

Water Treatment Plants Eliminated:

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

Supplementation of Raw Water Supply:

- This project includes supplementing the existing raw water supply.

Supplementation of Potable Water Supply:

- This project includes supplementing the existing potable water supply.

Supplementation of Emergency Water Supply:

- This project includes supplementing the existing emergency water supply.

Water Source Protection

- This project will preventatively address PFAS or other emerging contaminants of the source water.
- This project will address current PFAS or other emerging contaminants of the source water.
- This project rehabilitates a water source dam or reservoir.
- This project includes land acquisition for water source protection.

Water Treatment Components

- ✓ This project includes water treatment components.

Treatment Activities:

- This project includes a new water treatment plant.
 - New WTP preventatively addresses PFAS or other emerging contaminants.
- This project includes an expansion of an existing water treatment plant.
- This project includes rehabilitation of an existing water treatment plant.
- ✓ This project includes upgrades to an existing water treatment plant.
- This project includes emergency power generators for treatment activities.

- ✓ This project includes redundant treatment processes.

Explanation of how redundant treatment processes will be achieved:

Project will include redundant UV System at treatment location.

- This project includes replacement of existing raw water lines.

Treatment - Upgrades and Modifications:

- ✓ This project includes infrastructure options to meet Cryptosporidium removal and/or activation requirements.

Explanation of how Cryptosporidium removal and/or activation will be achieved:

Project will include a UV disinfection system at the treatment site.

- This project includes infrastructure options to meet CT inactivation requirements.

- ✓ This project includes treatment modifications to meet the Disinfectants/Disinfection Byproducts Rule at the water treatment plant.

Explanation of how disinfection treatment modifications will be achieved:

Project will include additional GAC treatment vessel to add increased efficiency and removal of compounds that interact with disinfection processes.

- This project will provide treatment modifications for VOCs, IOC, SOC, or Radionuclides.
- This project includes treatment modifications to address Secondary Contaminants.
- Treatment process modifications preventatively addresses PFAS or other emerging contaminants.
- Treatment process modifications addresses current PFAS or other emerging contaminants.

Security



Drinking Water Project Profile

WX21085037 - Grayson County Water District
GCWD East - West Improvements II

This project includes security components for water treatment facilities.

Water Distribution and Storage Components:

This project includes water distribution and/or storage components.

Water Line Extensions:

This project includes water line extension(s).

Length of extensions (LF): **37,725**

Number of new connections: -

This projects extends service to unserved rural areas.

Redundancy Components:

This project includes emergency power generators for distribution and/or storage activities.

This project includes redundant distribution and/or storage processes.

Explanation of how redundant distribution and/or storage processes will be achieved.

The newly constructed Salt River Pump Station will have the ability to pump finished water from the Leitchfield source as well as the Grayson County source. The existing station can only get water from the Leitchfield source. The station will also be set up with two pumps.

Finished Water Quality:

This project includes infrastructure to address inadequate water turnover and disinfection byproducts (DBPs).

Number of loops created: **3**

This project includes a tank mixing system.

Inadequate turnover and DBPs are addressed as follows:

Loops will be made on KY 259, Bypass, and cross country which will allow water to circulate and turn over more. Mixing system will be added to the Clarkson storage tank to ensure better water quality.

Service Line Inventory:

This project includes implementation of a service line inventory.

Water Line Replacement:

This project replaces problem water lines (breaks, leaks, or restrictive flows due to age), water lines consisting of lead and/or asbestos-cement (AC), and/or inadequately sized water lines.

In-line or in-situ repair methods will be used in lieu of water line replacement.

Total length of in-place or in-line repair (LF): -

This project replaces lead service lines.

Roads Serviced by Line Replacements

Road Name	LF
William Thomason Byway	9,253
Duff Road	16,141
Ray Priddy Rd	26,059
Total LF Serviced	51,453

Water Loss in the past 12 Months:

The system has experienced the following water loss over the past 12 months:

Water Loss Volume (MG): **83.724**

Water Loss Percent (%): **20.000**

Water Storage and Pressure Components:

This project includes the construction of new water tank(s).

This project includes the replacement of existing water tank(s).

This project includes the rehabilitation of existing water tank(s).

Number of rehabilitated tanks: **2**

This project includes the construction of new pump station(s).

This project includes the rehabilitation of existing pump station(s).



Drinking Water Project Profile

WX21085037 - Grayson County Water District
GCWD East - West Improvements II

Security:

This project includes security components for water distribution infrastructure.

Distribution infrastructure security is achieved as follows:

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"/> Bioretention	
<input type="checkbox"/> Trees	
<input type="checkbox"/> Green Roofs	
<input type="checkbox"/> Permeable Pavement	
<input type="checkbox"/> Cisterns	
Total Green Infrastructure Cost:	\$0

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 checked="" type="checkbox"/> Conducting water utility audits, leak detection studies, and water use efficiency baseline studies, which are reasonably expected to result in a capital project or in a reduction in demand to alleviate the need for additional capital investment.	\$25,000
<input type="checkbox"/> Developing conservation plans/programs reasonable expected to result in a water conserving capital project or in a reduction in demand to alleviate the need for capital investment.	
<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 systems to more efficient landscape irrigation systems.	
<input type="checkbox"/> Water meter replacement with traditional water meters.*	
<input type="checkbox"/> Distribution pipe replacement or rehabilitation to reduce water loss and prevent water main breaks.*	
<input type="checkbox"/> Storage tank replacement/rehabilitation to reduce water loss.*	
<input type="checkbox"/> New water efficient landscape irrigation system, where there currently is not one.*	
Total Water Efficiency Cost:	\$25,000

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

Installation of state of the art SCADA to monitor and control tank loss from over filling from pump station. And the replacement of 8" water main that was installed in the early 1970's.



Drinking Water Project Profile
 WX21085037 - Grayson County Water District
 GCWD East - West Improvements II

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, which are part of a public health project, such as wind, solar, geothermal, and micro-hydroelectric that provides power to a utility.	
<input type="checkbox"/> Utility-owned or publicly-owned renewable energy projects.	
<input type="checkbox"/> Utility 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"/> Energy efficient retrofits, upgrades, or new pumping systems and treatment processes (including variable frequency drives (VFDs).*	
<input type="checkbox"/> Pump refurbishment to optimize pump efficiency.*	
<input type="checkbox"/> Projects that result from an energy efficient related assessment.*	
<input type="checkbox"/> Projects that cost effectively eliminate pumps or pumping stations.*	
<input type="checkbox"/> Projects that achieve the remaining increments of energy efficiency in a system that is already very efficient.*	
<input type="checkbox"/> Upgrade of lighting to energy efficient sources.*	
<input type="checkbox"/> Automated and remote control systems (SCADA) that achieve substantial energy savings.*	
Total Energy Efficiency Cost:	\$0

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

There are no Energy Efficiency components specified for this project.

Sustainable Infrastructure - Environmentally Innovative:

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, or other planning framework where project life cycle costs are minimized, which enables communities to adopt more efficient and cost-effective infrastructure solutions.	
<input type="checkbox"/> Plans to improve water quantity and quality associated with water system technical, financial, and managerial capacity.	
<input type="checkbox"/> Source water protection planning (delineation, monitoring, modeling).	
<input type="checkbox"/> Planning activities to prepare for adaptation to the long-term effects of climate change and/or extreme weather.	
<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"/> Construction of US Building Council LEED certified buildings, or renovation of an existing building.	
<input type="checkbox"/> Projects that significantly reduce or eliminate the use of chemicals in water treatment.*	
<input type="checkbox"/> Treatment technologies or approaches that significantly reduce the volume of residuals, minimize the generation of residuals, or lower the amount of chemicals in the residuals.*	
<input type="checkbox"/> Trenchless or low impact construction technology.*	
<input type="checkbox"/> Using recycled materials or re-using materials on-site.*	
<input type="checkbox"/> Educational activities and demonstration projects for water or energy efficiency (such as rain gardens).*	
<input type="checkbox"/> Projects that achieve the goals/objectives of utility asset management plans.*	
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.



Drinking Water Project Profile
 WX21085037 - Grayson County Water District
 GCWD East - West Improvements II

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: **12-14-2021** [Download Fee Schedule](#)

Rate Adjustment Age: **13 months**

System's monthly water bill, based on 4,000 gallons, as a percentage of MHI: **1.31%**

- The system(s) has an Asset Management Plan (AMP).
- The system(s) involved in this project have specifically allocated funds for the rehabilitation and replacement of aging and deteriorating infrastructure.

If any boxes are checked above, please describe each below:

The Water District maintains a depreciation / replacement reserve account to provide for replacement of assets. A portion of the Water District's audit is attached showing the reserve account and amounts.

Project Status: Approved

Date Approved: 06-21-2019

Date Revised: