

Request for Proposal for Engineering Design Services

West Hickman/Veterans Park Water Quality Improvements

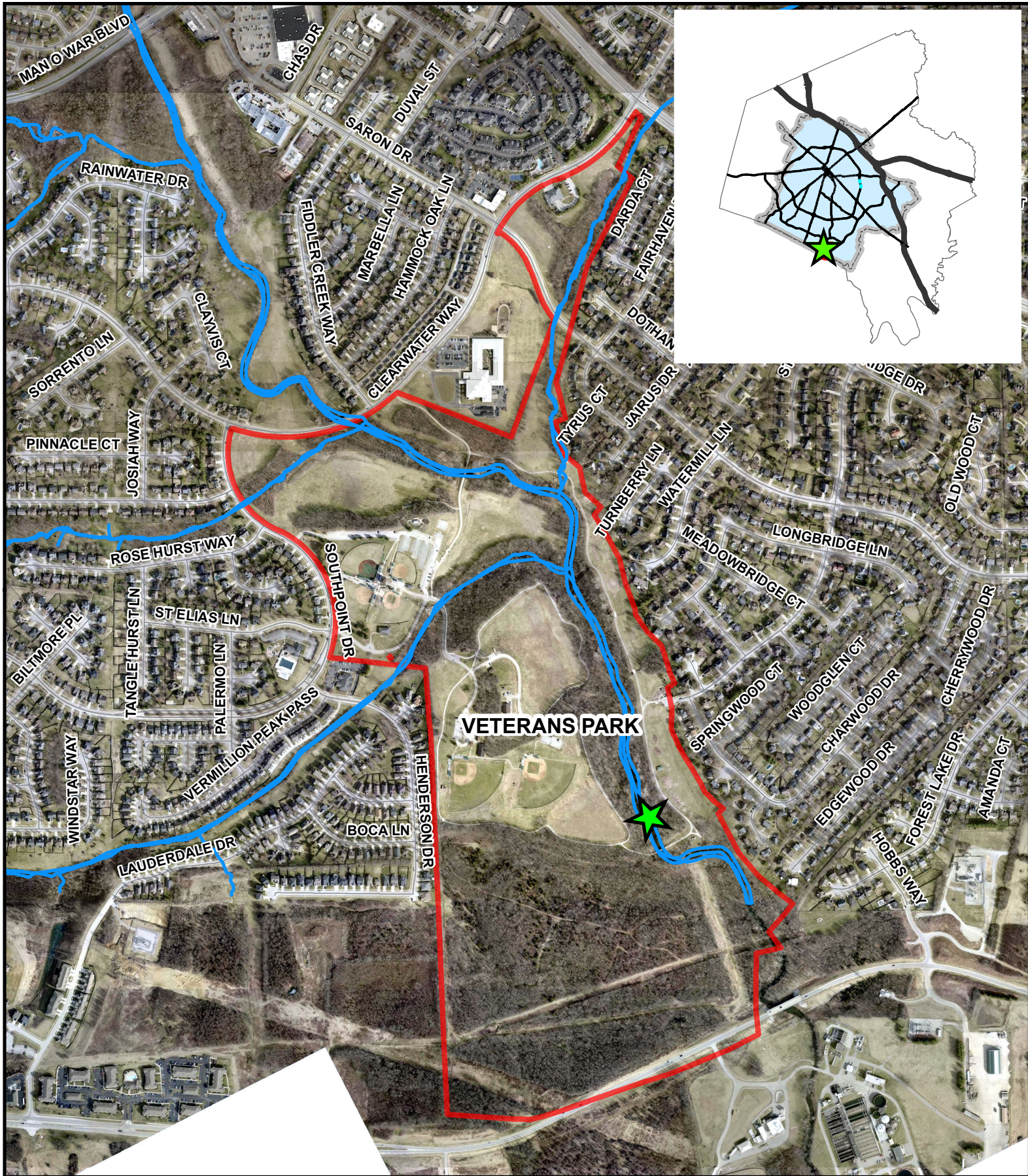
Lexington-Fayette Urban County Government (LFUCG) has received a Kentucky Cleaner Water Program (CWP) grant for water quality improvements to the West Hickman Creek within Veterans Park (Figure 1). LFUCG is accepting proposals from interested engineering consulting firms for design and construction oversight of this project. The selected firm shall perform professional services as hereinafter stated which include project management, technical writing, reporting, geotechnical assessments, stakeholder outreach, stream assessments, surveying, engineering design, coordination with permitting agencies, construction document preparation, bid assistance, and construction administration assistance as it relates to the implementation of this project.

The main objectives for this project are:

1. Remove failing low head farm dam;
2. Create instream aquatic habitat using natural materials and create a riffle, run, glide, pool complex along the length of the project;
3. Create opportunities for citizens to engage with the creek (step platform);
4. Create ADA accessible path to step platform;
5. Create an educational opportunity about the project and creek;
6. Remove invasive species and hazardous trees from forested area adjacent to project limits.

This Scope of Engineering Design Services provides a minimum set of guidelines, tasks, and activities for the design, bidding, and construction administration services. Firms shall include all information necessary for evaluation of the criteria listed in Section 4 of this document.

This project is 100%-funded by a grant from the Kentucky Cleaner Water Program (CWP). The Kentucky Infrastructure Authority (KIA) approved the grant request through the American Rescue Plan Act 2021. The funds must be obligated by December 31, 2024, and fully expended by December 31, 2026. See Appendix B for the KIA grant documents already received by LFUCG. The selected firm will be responsible for completing the technical and administrative tasks necessary to prepare all required grant documentation submittals at the direction of LFUCG's Department of Housing Advocacy and Community Development, Division of Grants & Special Programs, beginning with the grant obligations described in the November 21, 2022, Conditional Commitment Letter and the attachments included in Appendix B. Engineering fee limitations will be determined by the most recent USDA Rural Development Utility Program Fee Guide (Appendix C).



Legend

-  Waterway
-  Street
-  LFUCG Park
-  Failing Low Head Dam



Figure 1
Veteran's Park Dam Removal

SECTION 1: PROJECT OVERVIEW

Veteran's Park is located in the southern portion of Lexington and is one of the City's largest parks at 235 acres. This park has a wide range of both passive and active recreational areas. The lower portion of West Hickman Creek runs through this park and provides several activities, such as fishing, wading, and educational opportunities. A walking and mountain biking trail has also been created over time adjacent to this creek.

Dam Removal

Prior to this area becoming a park, it was farm land and a low head dam was installed (date unknown) (37°57'3.16"N 84°30'6.15"W) across the creek; however, over the past several years, the creek has bypassed this dam and significantly eroded the banks. This area has become a safety hazard to patrons of the park who use the path along the creek. A preliminary engineering study of the dam removal was performed in 2019/2020 (Appendix A).

Instream Habitat

This area of West Hickman Creek is used by several user groups, including people who wade and shoreline fish. To promote fishing, this area is stocked with trout two times per year by the Kentucky Department of Fish & Wildlife Resources (KDFWR).

It is proposed to restore in-stream aquatic habitat approximately 650 LF upstream and 200 LF downstream of the dam. Habitat restoration should be confined to the main channel with little to no impact to the streambanks. Full stream and bank restoration are not proposed at this time. The stream buffer is a mature Reforest the Bluegrass location and extensive disturbance is not desired. If streambank erosion is a concern, instream structures, such as boulders and root wads, shall be proposed to assist in reducing shear stress on the banks.

Stream Access/ADA Access

To provide better access to West Hickman Creek it is proposed to build a step platform at/near the location of the existing dam. This platform should withstand the shear stress from the high flows, and provide a stable and safe access to the creek for all ages. LFUCG is envisioning this platform to be an area to shoreline fish, access the creek for secondary recreation, and passive recreation.

If possible, an ADA-accessible paved path should be created to this platform from the existing paved path within Veterans Park.

Step Boulder at Cross Key's Park



Educational Opportunity

Coordination with several LFUCG departments and divisions, users of Veterans Park, and the Hickman Creek Conservancy, should be completed during various phases of this project. This coordination should include, but is not limited to, review and feedback on the design, educational signage topics, and final tour of completed project.

Stream Buffer

This area of West Hickman Creek is surrounded by a mature Reforest the Bluegrass site that has not had invasive species control. It is proposed, if budget allows, to remove the invasive species using a chip-in-place method, remove any potentially hazardous trees, and reseed with a forest herbaceous mix.

SECTION 2: SCOPE OF SERVICES

Task A: Project Kick-Off & Data Collection

Perform all necessary site visits and reconnaissance of the area as necessary for design and construction. Review all existing documentation including, but not limited to, the following:

- Preliminary Engineering Report – Veterans Park Dam Removal Conceptual Plan (Appendix A)
- Kentucky Infrastructure Authority (KIA) Kentucky Cleaner Water Program Grant Application and Contract (Appendix B)
- FEMA Floodway/Floodplain Hydrologic and Hydraulic Models

Deliverables: Grant Documentation and Submittals.

Task B: Existing Site Conditions

- Obtain location and elevation of physical features, including topography, drainage features, structures, utilities (above and below ground), fencing, and trees, as needed, to provide accurate plan, profile, and cross section information necessary for hydraulic / hydrologic design and construction. Use the following coordinate system:
NAD_1983_StatePlane_Kentucky_North_NFIPS_1601_Feet. Vertical Datum shall be *NAVD 88.*
- Locate additional drainage features or utilities outside of the identified area that may be necessary for stormwater calculations or design.
- Survey stream cross-sections, longitudinal profile, bedrock and grade controls features, project site features, etc. to sufficiently develop hydrologic & hydraulic analyses, construction documents, and engineer's opinion of probable cost, including any existing infrastructure, utility crossings, or parallel utility lines.
- Perform geotechnical investigations, as necessary, for design and construction (e.g. soil, rock, etc.). Number of borings to be determined by the Consulting Engineer (provide unit price per boring in the cost estimate).

- Perform soil sampling, as needed, for design (e.g., particle size distributions for bedload, incoming sediment load, etc.).
- Perform all hydrologic and hydraulic analyses of stream for 10-year, 25-year, and 100-year, 24-hour storms for existing and proposed conditions.
- Perform, at a minimum, the 100-year desktop shear stress calculations for the section of West Hickman proposed for restoration design.

Deliverables: The Consultant shall submit to LFUCG three hard copies and one digital copy of a report and drawing(s) which adequately describe the existing conditions and presents the analysis of the field investigations, topographical survey, soil investigations, hydrologic & hydraulic analyses, etc. Include 24"x36" sized plan sheets (1"=20' scale) showing existing features and profile sheets (1"=20'H: 1"=2'V)

Task C: Conceptual Design Development

- Create conceptual designs and approximate construction costs for project elements as described in Section 1.
- Stream restoration design techniques shall be based upon reducing 100-year shear stresses across the channel and floodplain to stable levels.
- Participate in review and discussion with LFUCG, Kentucky Division of Water, the Hickman Creek Conservancy, and any other involved parties (*Task F - Meetings*).
- The final conceptual designs will be used for public education, presentations, signage, brochures, etc. The creation of these documents shall occur by LFUCG concurrent or after the project design.

Deliverables: The consultant shall submit conceptual drawings and renderings of project elements and approximate construction costs with alternatives. Budget constraints shall be part of the consideration.

Task D: Design & Construction Documents

On the basis of an approved preliminary design, the Consultant shall prepare and submit the Final Design Documents and an updated engineer's opinion of probable cost to LFUCG for review/approval. The construction documents shall be in a form suitable for bidding. Where applicable, plans and specifications shall meet the requirements of the most current LFUCG Stormwater Manual and the LFUCG Engineering Standard Drawings.

- Provide design submittals one week prior to progress meetings for LFUCG review. The Consultant shall keep notes during the design progress meetings and submit those notes to LFUCG for verification of design items discussed and decisions that were made.
- Coordinate with utilities affected by the project.
- Coordinate and submit plans, specifications, and required permit applications to all required agencies. Revise plans as needed or required based on the comments of those regulatory agencies.

- Prepare final plans and specifications for the project for bidding purposes in both hard copy and standard electronic format compatible with LFUCG equipment and software. A minimum of eight (8) copies will be required.
- Furnish design and construction timelines, schedules, and documents to LFUCG in order to meet the grant requirements.

Deliverables:

50% Drawings (5 Hard Copies)

- 24"x36" sized plan sheets (1"=20' scale) showing existing features and proposed features including utility relocations if necessary
- Profile sheets (1"=20'H: 1"=2'V)
- Cross-sections (1"=5')
- Preliminary Details sheets
- Preliminary Erosion Control and Stormwater Pollution Prevention sheets
- Preliminary Technical Specifications
- Preliminary Opinion of Probable Cost
- Preliminary Hydrologic & Hydraulic Analyses Results

90% Drawings (5 Hard Copies)

- 24"x36" sized plan sheets (1"=20' scale) showing existing features and proposed features including utility relocations if necessary
- Profile sheets (1"=20'H: 1"=2'V)
- Cross-sections (1"=5')
- Detail and notes sheets
- Erosion Control and Stormwater Pollution Prevention Plan sheets
- Technical Specifications
- Engineer's Opinion of Probable Cost
- All sheets and documents shall be signed and sealed by a Professional Engineer and Registered Land Surveyor.
- Final Hydrologic & Hydraulic Design Report

Bidding Documents (8 Hard Copies)

- 24"x36" sized plan sheets (1"=20' scale)
- Profile sheets (1"=20'H: 1"=2'V)
- Cross-sections (1"=5')

- Detail and notes sheets
- Erosion Control and Stormwater Pollution Prevention Plan sheets
- Technical Specifications
- Engineer's Opinion of Probable Cost
- Executed Permits in separate binder (*Task E*)
- All sheets and documents shall be signed and sealed by a Professional Engineer and Registered Land Surveyor and stamped "For Construction."
- Reproducible digital version of the construction plans, specifications, and contract documents to LFUCG's official bid document distributor and grant requirements (Appendix B, Exhibits 6, 7, 8 & 9) prior to bid advertisement.

Task E: Permitting Services

The selected consultant shall prepare and perform all work necessary to obtain all permits and approvals required for the project (other than the LFUCG Land Disturbance Permit and the Notice of Intent to KDOW for KYR10, which are to be obtained by the Contractor). Permits and approvals may include, but are not limited to:

- KDOW Stream Construction/401 Water Quality Certification Permit
- U.S. Army Corps of Engineers 404 Permit
- State Historic Preservation Office Section 106 of National Historic Preservation Act
- U.S. Fish & Wildlife Section 7 Endangered Species Act
- Utility easement encroachment agreements/Memorandums of Understanding
- LFUCG Floodplain Special Use Permit
- FEMA No Rise/CLOMR/LOMR (include as a separate unit price item in proposal). This task includes all hydrologic & hydraulic modeling and mapping required to submit for a No Rise Certification, or CLOMR and LOMR if required by the agencies.

A copy of all submittal applications for required permits shall be submitted to LFUCG electronically and via hard copy.

Deliverables: Hard copies of submittal applications for each required permit. Originals of Executed Permits in a separate binder with the bid set contract documents.

Task F: Meetings

Design Services

- Within ten (10) days of Notice to Proceed, the selected consultant will participate in a project start-up meeting with LFUCG. The purpose of this meeting will be to introduce all members of the project team, review project communications, finalize scope, review schedule, review permitting strategy, and discuss in detail the design milestones and deliverables.

- Schedule and facilitate a conceptual design meeting with LFUCG, Kentucky Division of Water, the Hickman Creek Conservancy, and any other involved parties.
- Schedule and facilitate a permitting meeting with LFUCG, Kentucky Division of Water, Army Corps of Engineers, and any other required entities.
- Conduct design progress meetings at: (1) end of Conceptual Design, (2) 50% submittal, (3) 90% submittal, and (4) 100% submittal. Provide submittals to LFUCG at least one week before each meeting to allow for review and comment.
- Meet and make presentations to any public or civic groups as requested by the Project Manager. (Assume 2 meetings. Include unit cost per additional meeting in proposal.)

Construction Services

- Attend pre-bid meeting and prepare corresponding addendum.
- Attend bid review discussion meeting to assist in selecting qualified contractor.
- Conduct pre-construction meeting and prepare meeting notes.
- Site progress meetings (assume 20 onsite meetings during construction).
- Attend final inspection and assist in compiling final punch list.
- Participate in project closeout meeting.

Deliverables: Meeting summaries electronically created within 5 days of meeting.

Task G: Public Education

Educational Signs

- Work with appropriate parties, LFUCG Parks and Recreation, LFUCG Environmental Services, the Hickman Creek Conservancy, etc. to determine appropriate long term topics for educational signage.
- Design of two signs (24"x36") with topics chosen above and review draft of these signs with appropriate parties.
- Finalize signs and forward design files to LFUCG for printing.

Stakeholder Presentations

- Prepare and complete a stakeholder presentation (evening meeting) regarding conceptual design of project. LFUCG to assist in finding host location and advertising meeting. Consultant responsible for facilitating meeting, presenting conceptual design, taking attendance, and summarizing comments, questions, and concerns. Consultant shall submit presentation to LFUCG Project Manager a week prior to meeting for review and comment.
- Complete a stakeholder presentation and project site walk-thru, after construction, to discuss project, in-stream habitat creation, etc.

Deliverables:

Sign: Submit finalized signs to LFUCG in appropriate electronic files.

Presentations: Submit final stakeholder presentation on conceptual design via PowerPoint and PDF for publishing on LFUCG website. Submit attendance records and meeting summary within one week of meeting.

Task H: Bidding Services

- Coordinate with LFUCG Division of Purchasing for advertisement and distribution of bid documents and any addendums. Maintain an up to date List of Plan Holders.
- Respond to questions and issue addenda as necessary. During the bidding phase, address bidder's questions and coordinate responses with the LFUCG Project Manager and Division of Purchasing. LFUCG Division of Central Purchasing will issue any addenda.
- Obtain copies of all bids, prepare a tabulation of bid prices, and submit a recommendation of award.
- Provide electronic versions of plans to coordinate utilities as needed.
- Complete any grant-required paperwork.

Deliverables: Hard copy and electronic copies of bid tabs, bid selection criteria summary, recommendation of award.

Task I: Construction Administration Assistance

- Review all shop drawings.
- Attend meetings as noted in Task F.
- Attend final inspection and compile final punch list.
- Prepare Record Drawings in hard-copy and electronic format compatible with LFUCG software.
- Prepare a Project Certification for LFUCG.
- Complete any grant-required paperwork.

Deliverables: One (1) hard copy set of signed and sealed record drawings of project improvements. One (1) digital set of signed and sealed record drawings in .pdf format. Project Certification memorandum.

SECTION 3: SCHEDULE

The duration of all activities defined and listed below shall begin as soon as the selected consultant has received a written notice to proceed and shall not exceed the times listed below. Extension of the duration will be at the sole discretion of the Division of Environmental Services, and requests for extensions by the Consultant shall be in writing and considered only

for additional major activities not included in this document. The following schedule is provided as a basis for task deadlines and will remain in effect until a replacement schedule is approved in writing by LFUCG.

DESIGN TASK SCHEDULE	DURATION
Kick-Off Meeting	10 Days
Conceptual Designs, LFUCG Meeting, and Stakeholder Meeting	45 Days
50% Plan Review, LFUCG Meeting(s), Stakeholder Meeting(s), and Permit Submittal(s)	30 Days
90% Plans and Specification Review, LFUCG Meeting(s), Stakeholder Meeting(s), Educational Signs	30 Days
Submit Final Plans, Specifications, and Permits to LFUCG	15 Days
Bidding Assistance	30 Days
Construction Administration Assistance	180 Days

SECTION 4: PROPOSAL EVALUATION CRITERIA

The review of all submissions shall be performed by the Selection Workgroup, which shall recommend award to the Urban County Council for approval. In the evaluation of each submission, the Selection Workgroup will apply the following criteria:

1. Specialized experience and technical competence of the persons or firm(s) (including a joint venture or association (e.g., team)) with the type of service requested:
 - The proposal should clearly identify the following primary project team members, with their discipline(s) and office location of primary residence. Disciplines/Expertise may reside in one or multiple persons/firms.
 - a) Project Manager
 - b) Principal Project Engineer(s) licensed in the state of Kentucky
 - c) Geotechnical Engineer licensed in the state of Kentucky (dam evaluation)
 - d) Hydrologic & Hydraulics Modeler
 - e) Registered Land Surveyor
 - f) Botanist or Plant Specialist
 - g) Hydrogeologist / geomorphologist with training and experience in natural channel stream design.
 - The proposal should contain only those resumes of the primary project team members or those providing measurable services to project delivery. Include the office of primary residence (e.g., Lexington, KY) for each individual. The content of those resumes should

be limited to one page each per person, and only include experience directly relevant to the services requested in this proposal.

2. Capacity of the person, firm, or team to perform the work, including any specialized services, within the time limitations.
 - The proposal should include descriptions of up to three (3) similar projects successfully completed by the proposed project team members and/or firm(s). Provide contacts for references on each project.
3. Past record and performance on contracts with the Urban County Government or other governmental agencies and private industry with respect to such factors as control of cost, quality of work, ability to meet schedules, and successful submission of capital improvement action plans to regulatory agencies (USEPA, KY Division of Water, etc.).
4. Degree of local employment to be provided by the person, firm, or team in the performance of the contract.
5. The total estimated cost of services shall be broken down into Scope Tasks and include unit costs for additional stakeholder meetings and geotech boring that maybe required. Include the Engineering Fee Table on Scope of Services Page 13 in your proposal.

As noted in the overview, this project is funded 100% by a grant from the Kentucky Cleaner Water Program (CWP). The Kentucky Infrastructure Authority (KIA) approved the grant request through the American Rescue Plan Act 2021. Engineering fee limitations will be determined by the most recent USDA Rural Development Utility Program Fee Guide (Appendix C). Cost estimate of engineering fees and construction costs are found in Exhibit 1 of the Grant Terms and Conditions for Grant 22CWS009.

SECTION 5: METHOD OF INVOICE AND PAYMENT

The Consultant may submit monthly invoices for basic services or work rendered, based upon the Consultant's estimate of the portion of the total services actually completed during the billing cycle. Each invoice shall show the amount to be paid, the subtotal of all prior invoices, and the LFUCG Purchase Order Number against which the invoice is to be charged. Each invoice shall also include documentation showing the amount attributed to each Task for both the billing cycle and the cumulative project period and shall include, as a separate document, a monthly progress report based on the approved format. Each invoice shall note the portion of the amount invoiced that is for work performed by a DBE prime contractor or subcontractor. The actual work performed by the DBE shall be included on the monthly progress report.

The Division of Environmental Service's Project Manager will either approve or deny each invoice within fourteen (14) calendar days of receipt. The Consultant shall not invoice more than 95% of the agreed Task amount prior to acceptance of the final documents related to that Task or more than 95% of the total contract amount prior to final acceptance of the recommended design solution or completion of construction of the design solution for projects resulting in construction.

Regardless of the invoices submitted by the Consultant, the Division of Environmental Services shall not approve a greater percentage of payment than outlined in the following schedule.

Fee / Billing Schedule	Invoice
Submission of Tasks A, B, C, E, F, G and Associated Meetings	30%
Submission of 50% Drawings and Associated Meetings	60%
Submission of 90% Drawings and Associated Meetings	75%
Submission of Final Contract Documents, Task H, Task I, and Associated Meetings	90%
Construction Completion – Submit Final Invoice	100%

SECTION 6: STOP WORK NOTICE

The Consultant shall at all times monitor time allotted and amounts invoiced for tasks and activities as compared to their original estimates and expectations. The Consultant shall notify the Division Environmental Services immediately upon discovery of facts that may necessitate a change in the contract amount or may extend the contract time. If the amount of the change is expected to exceed ten percent (10%) of the original contract amount, the Consultant shall immediately stop all work related to this Scope of Services. Work shall not recommence without written notification from the Division of Environmental Services. The Consultant shall submit all requests for changes to the Division of Environmental Services in writing and shall be present when the issue is discussed before the Urban County Council. Failure by LFUCG to endorse the requested change does not relieve the Consultant of the contractual requirements and activities defined by this entire Scope of Services.

LFUCG reserves the right to terminate the contract when a mutually satisfactory agreement cannot be reached in a timely manner. All engineering project data must be submitted to LFUCG upon request. If it is determined that the Consultant failed to notify LFUCG on a timely basis regarding insufficient fee or inadequate schedule, LFUCG reserves the right to terminate the contract at any time thereafter.

Engineering Design Services Fee Table
West Hickman/Veterans Park Water Quality Improvements

Task	Fee (Lump Sum)
Task A – Project Kick-Off & Data Collection	
Task B – Existing Conditions	
Task C – Conceptual Design	
Task D – Design & Construction Documents	
Task E – Permitting	
Task F – Meetings	
Task G – Public Education	
Task H – Bidding Services	
Task I – Construction Administration	
Additional Public Meeting(s)	
Number of Geotech Borings Proposed (included in Task B)	
Cost per Geotech Boring	

Appendix A

Preliminary Engineering Report – Veterans Park Dam Removal Conceptual Plan

To:	Demetria Kimball Mehlhorn LFUCG Division of Environmental Services	From:	John Magner, EIT Stantec Consulting Services Inc. Eric Dawalt, PE EcoGro Inc./Ridgewater LLC.
File:	175668212	Date:	February 19, 2020

Reference: Preliminary Engineering Services – Veterans Park Dam Removal Conceptual Plan

The Joint Project Team (JPT) of Ridgewater, EcoGro, and Stantec Consulting Services Inc. (Stantec) was retained by the Lexington-Fayette Urban County Government (LFUCG) Division of Environmental Services to prepare a conceptual plan for the removal of the dam on West Hickman Creek in Veterans Park. During a site walkdown on March 19, 2019 and a public meeting on April 6, 2019, the JPT identified the following as project goals.

1. Remove the dam, which has eroded and no longer functions properly.
2. Improve water quality and stream habitat.
3. Improve safety and the stream aesthetics.

This memo documents the engineering analysis and presents the conceptual plan for the dam removal and stream restoration.

1.0 BACKGROUND

The existing site conditions, which are presented in Attachment A, were evaluated during the JPT site walkdown on March 19, 2019. Notable observations regarding the dam site include:

- The creek has eroded around the dam, such that water no longer flows over the dam;
- The concrete of the dam has been eroded/undercut by the creek;
- The creek banks around the dam are eroded, resulting in steep, unstable banks which pose a safety risk and could lead to the erosion of hiking trails in the park;
- Significant sediment has accumulated upstream of the dam; and
- The creek upstream of the dam for approximately 1,000 linear feet has low flow velocity due to the increased depth of water caused by the dam.

2.0 EXISTING CONDITIONS SURVEY

A survey of the site was performed by Ridgewater/EcoGro on March 20, 2019. GPS survey equipment was used to obtain existing ground, water surface elevation, and existing dam elevations to develop cross sections and a profile of the project area. A probe was used to locate bedrock elevations along the creek. Surveyed information is presented in Attachment A.

Reference: Preliminary Engineering Services – Veterans Park Dam Removal Conceptual Plan
3.0 RIFFLE DESIGN

A rock riffle is proposed to replace the eroding dam. A riffle provides the following benefits.

- Reduces upstream sediment deposition by allowing flow over the riffle.
- Improves aquatic habitat and oxygenation.
- Flattens and armors the steep, eroded banks, which improves safety and prevents further bank erosion.
- Improves the aesthetics of the creek.

The geometry of the proposed riffle is shown in Table 1.

Table 1. Proposed Riffle Geometry

Parameter	Value
Length	140.0'
Slope	0.5%
Bottom Width	50.0'
Crest Elevation	879.0'
Rock Depth	2.5'
Rock Diameter	D ₅₀ = 1 foot

The proposed riffle was sized to extend across the width of the creek and across the length of the removed dam and the deep scour pool just downstream of the dam. A 0.5% slope is proposed to minimize shear stress and erosion during the 100-year, 24-hour storm event. The proposed D₅₀ = 1' rock is stable for flow depths up to 15.4', as shown in the calculations below. The depth of the 100-year flow is approximately 12' based on the Federal Emergency Management Agency (FEMA) floodplain. Floodplain mapping information is presented in Attachment D.

$$\tau = \gamma DS \rightarrow D = \frac{\tau}{\gamma S}$$

Where:

D = Flow depth

τ = Shear stress ($4.8 \frac{lb}{ft^2}$, as shown in Figure 1 below)

γ = Unit weight of water ($62.4 \frac{lb}{ft^3}$)

Reference: Preliminary Engineering Services – Veterans Park Dam Removal Conceptual Plan

$$S = \text{Channel slope } (0.005 \frac{ft}{ft})$$

Table 2.3. Typical Permissible Shear Stresses for Bare Soil and Stone Linings

Lining Category	Lining Type	Permissible Shear Stress	
		N/m ²	lb/ft ²
Bare Soil ¹ Cohesive (PI = 10)	Clayey sands	1.8-4.5	0.037-0.095
	Inorganic silts	1.1-4.0	0.027-0.11
	Silty sands	1.1-3.4	0.024-0.072
Bare Soil ¹ Cohesive (PI ≥ 20)	Clayey sands	4.5	0.094
	Inorganic silts	4.0	0.083
	Silty sands	3.5	0.072
	Inorganic clays	6.6	0.14
Bare Soil ² Non-cohesive (PI < 10)	Finer than coarse sand D ₇₅ <1.3 mm (0.05 in)	1.0	0.02
	Fine gravel D ₇₅ =7.5 mm (0.3 in)	5.6	0.12
	Gravel D ₇₅ =15 mm (0.6 in)	11	0.24
Gravel Mulch ³	Coarse gravel D ₅₀ = 25 mm (1 in)	19	0.4
	Very coarse gravel D ₅₀ = 50 mm (2 in)	38	0.8
Rock Riprap ³	D ₅₀ = 0.15 m (0.5 ft)	113	2.4
	D ₅₀ = 0.30 m (1.0 ft)	227	4.8

¹Based on Equation 4.6 assuming a soil void ratio of 0.5 (USDA, 1987).

²Based on Equation 4.5 derived from USDA (1987)

³Based on Equation 6.7 with Shield's parameter equal to 0.047.

Figure 1: HEC-15 Permissible Shear Stresses

4.0 CONCEPTUAL PLAN

Improvements were selected to meet the project goals defined on page 1 of this memo. A conceptual plan of the improvements, including plan, profile, and section views, is presented in Attachment B.

4.1 CONCEPTUAL COSTS

Preliminary cost estimates for the dam removal and stream restoration are included in Attachment C. The estimates are based on experience with similar projects completed by the JPT. A summary of the cost estimates is presented in Table 2.

Reference: Preliminary Engineering Services – Veterans Park Dam Removal Conceptual Plan

Table 2. Conceptual Cost Estimate Basis

Construction Item	Conceptual Cost	Cost Basis
Design	\$30,000	Prior design-build projects with JPT
Dam Removal	\$81,250*	Gunpowder Creek Dam Removal
Stream Restoration	\$165,100*	Clays Mill Elementary Stream Restoration; Community Montessori School Stream Restoration; Kentucky American Water Richmond Road Station Stream Restoration

*Includes 30% contingency

4.2 RECOMMENDATION

The JPT recommends completing a design-build project to remove the dam and restore West Hickman Creek. The existing dam and eroded banks pose a safety risk and have resulted in significant sediment accumulation and poor aquatic habitat. A restored stream would provide the following benefits.

- 1) Eliminate safety risks associated with steep bank slopes adjacent to trails.
- 2) Improve water quality and ecological habitat in the stream.
- 3) Improve the aesthetics in the park.

The total estimated cost for the stream restoration project is \$276,350 (as shown in Attachment C). By completing this project as a design-build project, cost savings are realized when compared to completing the project as design-bid-build.

5.0 CLOSURE

EcoGro, Ridgewater, and Stantec appreciate the opportunity to assist with the project. If you have any questions or concerns, please contact us.

Stantec Consulting Services Inc.



John Magner, EIT
Phone: (859) 422-3055
john.magner@stantec.com

EcoGro Inc./Ridgewater LLC.



Eric Dawalt, PE
Phone: (859) 806-1089
edawaltrw@gmail.com

Reference: Preliminary Engineering Services – Veterans Park Dam Removal Conceptual Plan

References:

Federal Highway Administration (FHWA), *Hydraulic Engineering Circular No. 15, Third Edition – Design of Roadside Cannels with Flexible Linings (2005)*. Retrieved 05/30/2019 from <https://www.fhwa.dot.gov/engineering/hydraulics/pubs/05114/05114.pdf>

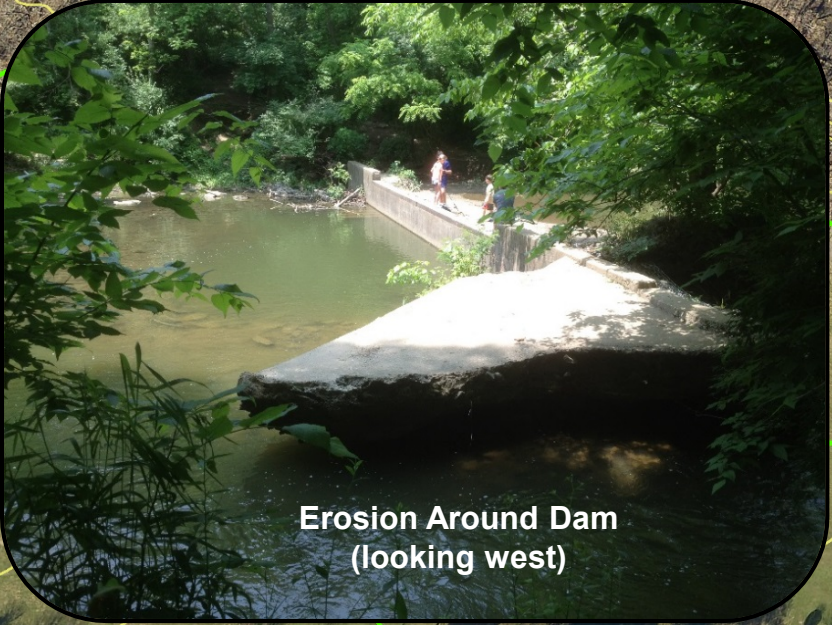
List of Attachments:

Attachment A: Existing Conditions
Attachment B: Conceptual Plan
Attachment C: Conceptual Cost Opinion
Attachment D: FEMA Floodplain Mapping

ATTACHMENT A

Existing Conditions

Veterans Park Dam Removal Feasibility Study Figure 1. Existing Conditions



Legend

+	Stream Station (50')	—	Sanitary Pipe
- - -	Stream Centerline	—	Storm Pipe
+	Baseline Station (100')	—	Waterline
●	Sanitary Manhole	—	Major Contour (10')
●	Storm Structure	—	Minor Contour (2')

0 100 Feet 1 in = 100 ft

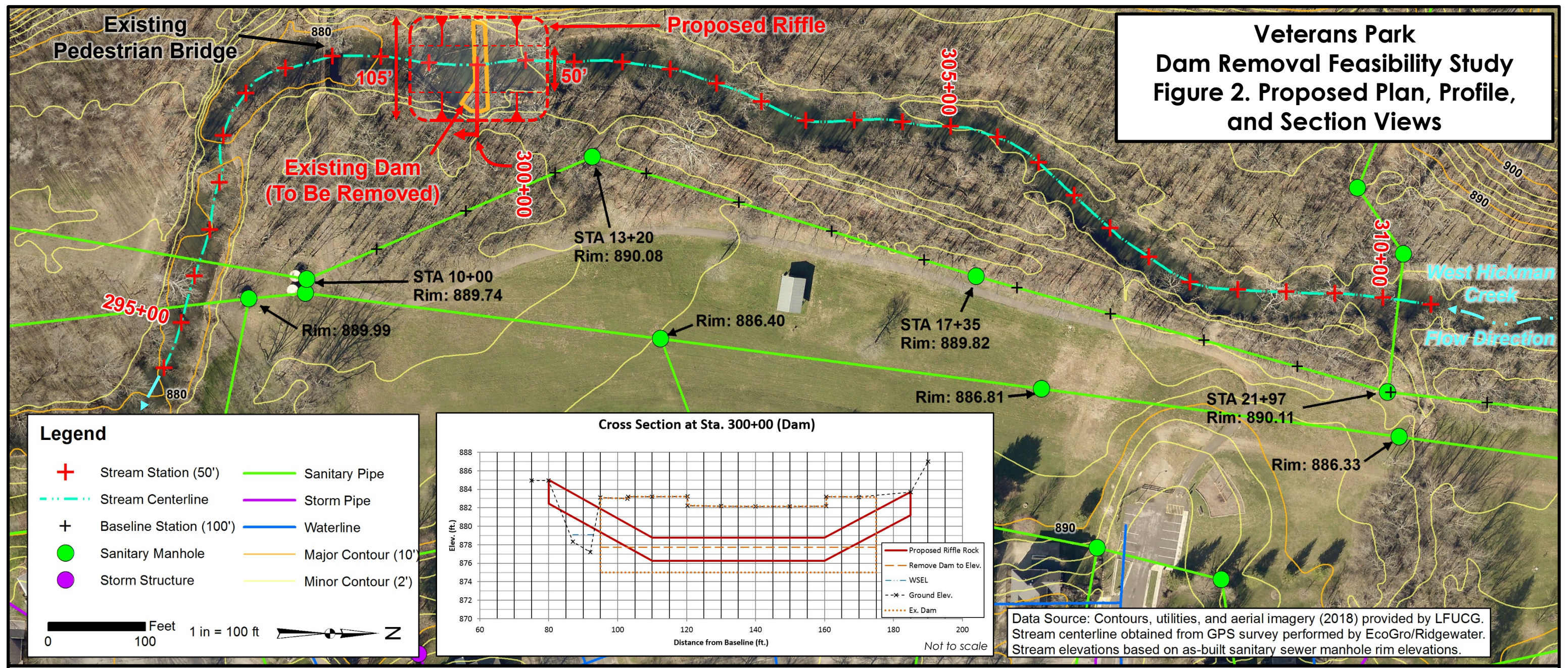
North Arrow

Data Source: Contours, utilities, and aerial imagery (2018) provided by LFUCG. Stream centerline obtained from GPS survey performed by EcoGro/Ridgewater. Stream elevations based on as-built sanitary sewer manhole rim elevations.

ATTACHMENT B

Conceptual Plan

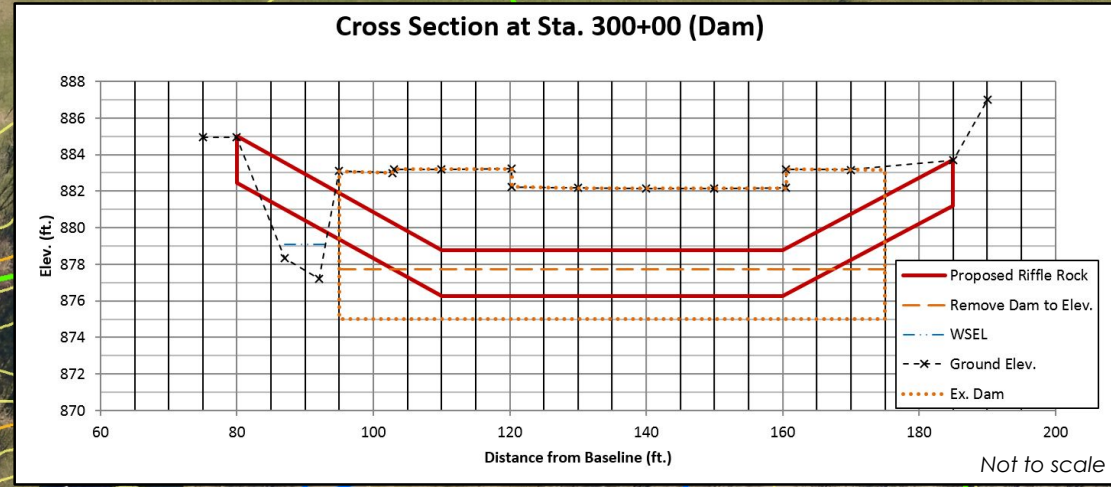
**Veterans Park
Dam Removal Feasibility Study
Figure 2. Proposed Plan, Profile, and Section Views**



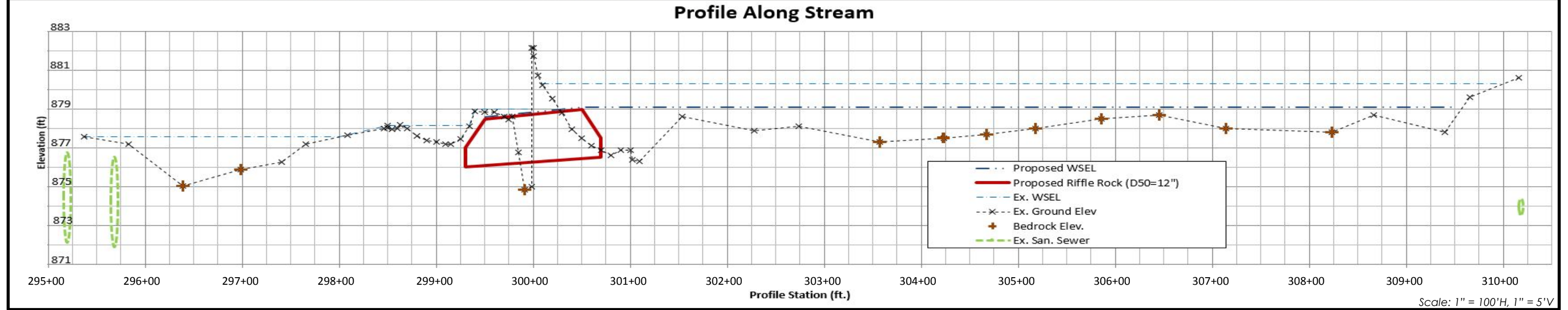
Legend

- + Stream Station (50')
- - - Stream Centerline
- + Baseline Station (100')
- Sanitary Manhole
- Storm Structure
- Sanitary Pipe
- Storm Pipe
- Waterline
- Major Contour (10')
- Minor Contour (2')

Scale: 1 in = 100 ft



Data Source: Contours, utilities, and aerial imagery (2018) provided by LFUCG. Stream centerline obtained from GPS survey performed by EcoGro/Ridgewater. Stream elevations based on as-built sanitary sewer manhole rim elevations.



Scale: 1" = 100'H, 1" = 5'V

ATTACHMENT C

Conceptual Cost Opinion

Conceptual Plan Budget

Veterans Park Dam Removal and Stream Restoration Project

Lexington, Kentucky

By: ELD
 Date: 5/30/2019
 Ckd by: JPM, BAL
 Date: 6/6/2019

Item Number	Description of Item	Estimated Quantity	Unit of Measure	Unit Cost	Total Cost
DESIGN					
D1	Design and Permitting ^{1,2,3,4}	1	LS	\$30,000.00	\$30,000.00
Design Total:					\$30,000.00

CONSTRUCTION					
Dam Removal					
C1	Mobilization/Demobilization & General Conditions	1	LS	\$10,000.00	\$10,000.00
C2	Construction Layout Staking	1	LS	\$2,000.00	\$2,000.00
C3	Clearing and Grubbing	0.50	AC	\$4,000.00	\$2,000.00
C4	Temporary Erosion and Sediment Control (SCE, Perimeter Controls)	1	LS	\$3,000.00	\$3,000.00
C5	Stream Flow Pump Around	1	LS	\$10,000.00	\$10,000.00
C6	Concrete Dam Demolition (80 ft W x 8 ft. H x ave. 2 ft. L) ⁵	1	LS	\$20,000.00	\$20,000.00
C7	Haul Demolition Rubble Off site	60	CY	\$100.00	\$6,000.00
C8	Cleanup and restore access road (1,000 l.f.)	1	LS	\$5,000.00	\$5,000.00
C9	Replace asphalt trail crossing	25	SY	\$100.00	\$2,500.00
C10	Seed and Mulch access road (1,000 l.f.)	1	AC	\$2,000.00	\$2,000.00
Dam Removal Total:					\$62,500.00
Dam Removal Contingency (30%):					\$18,750.00

Stream Restoration Construction					
C11	Install Rock (D50 =12") Riffle (140 ft. L x 110 ft. W x 2.5 ft. H) ⁶	2,200	Tons	\$55.00	\$121,000.00
C12	Erosion Control Blanket	700	SY	\$6.00	\$4,200.00
C13	Trees- Bare Roots	200	EA	\$4.50	\$900.00
C14	Live Stakes	200	EA	\$4.50	\$900.00
Stream Restoration Construction Total:					\$127,000.00
Stream Restoration Construction Contingency (30%):					\$38,100.00

Assumptions and Clarifications:

Design, Construction & Contingency Total: \$276,350.00

¹ Design costs assume Design-Build Method. Design-Bid-Build Method would be more expensive.

² Includes KDOW 401 WQC and Floodplain, and USACE 404 permit applications.

³ No bat mist netting or bat habitat mitigation is required.

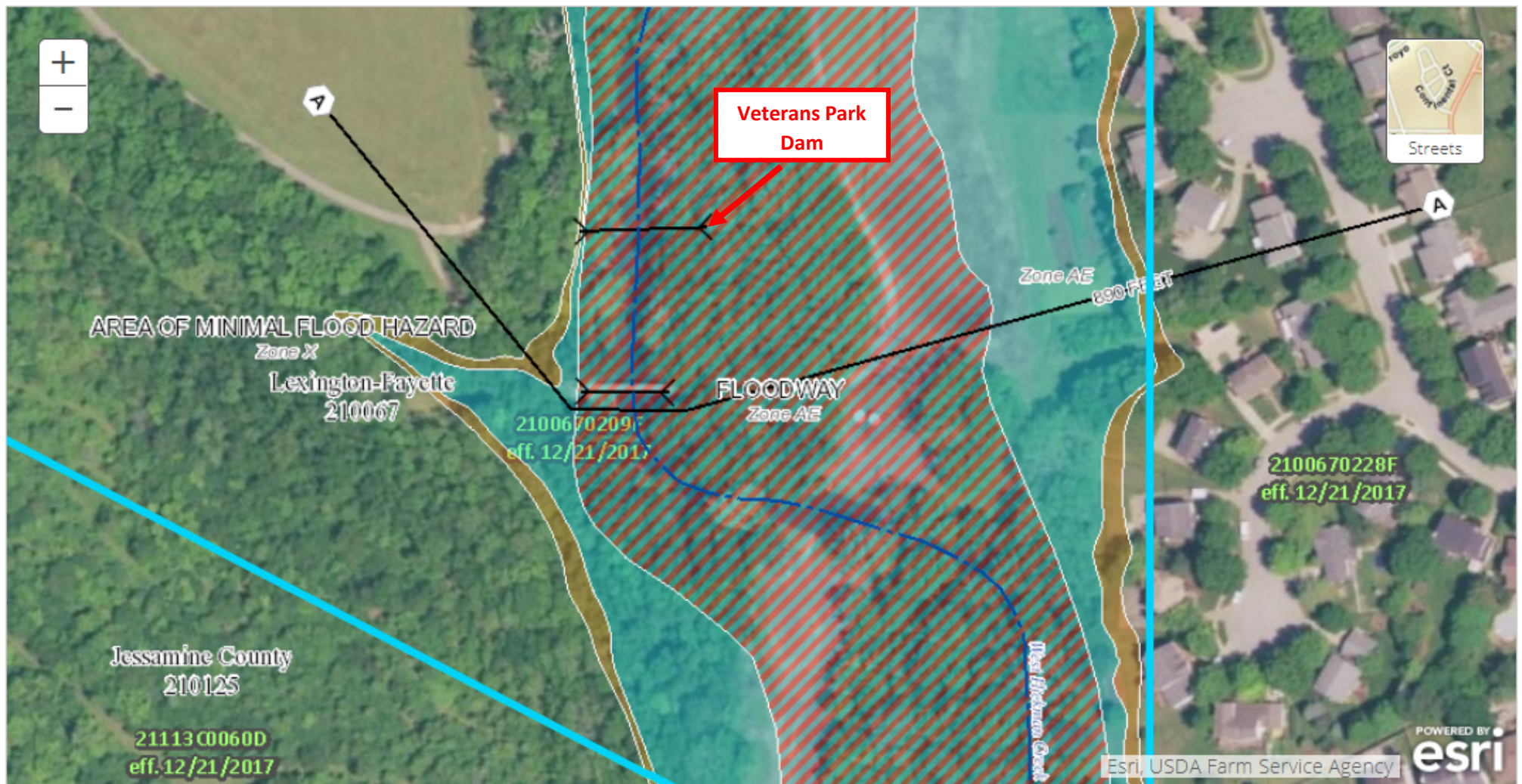
⁴ No mussel surveys are required.

⁵ No utilities are near the dam.

⁶ Assumes Class III Channel Lining. Price is ~\$42/ton inc. tax and delivery. Shot rock would be ~\$10/ton inc. delivery.

ATTACHMENT D

FEMA Floodplain Mapping



PIN	Approximate location based on user input and does not represent an authoritative property location	SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99	With BFE or Depth	Regulatory Floodway Zone AE, AO, AH, VE, AR	OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X	Future Conditions 1% Annual Chance Flood Hazard Zone X	Area with Reduced Flood Risk due to Levee. See Notes, Zone X	Area with Flood Risk due to Levee Zone D	OTHER FEATURES	20.2 Cross Sections with 1% Annual Chance Water Surface Elevation	17.5 Coastal Transect	Base Flood Elevation Line (BFE)	Limit of Study	Jurisdiction Boundary	Coastal Transect Baseline	Profile Baseline	Hydrographic Feature	GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer	Levee, Dike, or Floodwall
MAP PANELS	Selected FloodMap Boundary	Digital Data Available	No Digital Data Available	Unmapped																		
OTHER AREAS	Area of Minimal Flood Hazard Zone X	Effective LOMRs	Area of Undetermined Flood Hazard Zone D	Otherwise Protected Area	Coastal Barrier Resource System Area																	

*Map obtained from the Federal Emergency Management Agency (FEMA) Map Service Center (MSC) on 2/19/2020.

Appendix B

Kentucky Infrastructure Authority (KIA) Kentucky Cleaner Water Program

Grant Application and Contract



KENTUCKY INFRASTRUCTURE AUTHORITY

Andy Beshear
Governor

100 Airport Road
Frankfort, Kentucky 40601
(502) 573-0260
<https://kia.ky.gov>

Sandy Williams
Executive Director

November 21, 2022

Linda Gorton
Mayor
Lexington-Fayette Urban County Government
200 E Main St
Lexington, KY 40507

KENTUCKY INFRASTRUCTURE AUTHORITY CONDITIONAL COMMITMENT LETTER

KIA Grant Number 22CWS009
WRIS Project Number SX21067067

Dear Official,

Congratulations on receiving an award of Kentucky Cleaner Water Program (the "CWP") Round 2 grant funds for your Project! The Kentucky Infrastructure Authority (the "Authority") approved the grant request to the Lexington-Fayette Urban County Government (the "Grantee") in the amount of \$1,345,000 for the LFUCG - West Hickman Creek / Veterans Park WQ Improvement project. We look forward to working with you to successfully complete your Project!

Please be aware that these Round 2 CWP Grant Project funds are provided through the American Rescue Plan Act of 2021, Coronavirus State Fiscal Recovery Fund and must be obligated by December 31, 2024 and fully expended by December 31, 2026. Any funds not obligated by December 31, 2024 or expended by December 31, 2026 will be forfeited and will not be available for the project.

An Assistance Agreement will be executed between the Authority and the Grantee upon satisfactory performance of the conditions set forth in Attachment A. Funds will be available for disbursement only after execution of the Assistance Agreement.

During the course of implementing your project, please inform the Authority of any changes in the project scope and financing plan as soon as possible.



An Equal Opportunity Employer M/F/D

We wish you every success for this project, which will benefit both your community and the Commonwealth as a whole.

Sincerely,



Sandy Williams,
Executive Director

Attachments

cc: Robert Peterson, Project Administrator
Charles H Martin, Lexington Fayette Urban County Government
Karyn Leverenz, ADD Coordinator
Don Schierer, KIA Grant Analyst
File

Please sign and return a copy of this letter indicating your acknowledgement and acceptance of the commitment and its terms and conditions incorporated by reference and in the Attachments and Exhibits.

Accepted

Date

ATTACHMENT A**GRANT TERMS AND CONDITIONS**

Lexington-Fayette Urban County Government

The Conditional Commitment Letter and a subsequent Assistance Agreement between the Grantee and the Kentucky Infrastructure Authority shall be subject, but not limited, to the timely compliance with the following terms and conditions.

Terms

1. The grant award shall not exceed \$1,345,000 and shall be used solely for the designated project, unless otherwise permitted in writing by the Authority. Any reallocation requests should request signature approval by the original consensus approval group.
2. The grant funds shall be obligated by December 31, 2024. Any grant funds not obligated by December 31, 2024 will not be available for use by the Grantee and will not be available for the project.
3. Grant funds obligated by December 31, 2024 must be expended by the Grantee by December 31, 2026. Any obligated funds not fully expended by December 31, 2026 will not be available for use by the Grantee and will not be available for the project.
4. The grant must be reviewed and approved by the Capital Projects and Bond Oversight Committee of the Kentucky Legislature prior to the Authority's execution of the Assistance Agreement.
5. The Assistance Agreement must be executed within six (6) months from project bid opening.
6. Grant funds will only be disbursed after execution of the Assistance Agreement as project costs are incurred.
7. All approvals required by the Kentucky Division of Water (DOW), if any, shall be obtained by the Grantee prior to project bid. All approvals required by the Kentucky Public Service Commission, if any, shall be obtained prior to commencement of project construction.
8. All acquisitions of easements or purchases of land shall be completed prior to commencement of construction.
9. Cleaner Water Program grant funds are federal funds. If more than \$750,000 of federal funds including all sources are disbursed to the Grantee in any one fiscal year, the Grantee is required to have a single or program-specific audit conducted

for that year in accordance with 2 CFR 200 Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.

10. If the grant funds are used in conjunction with any other federal funds including but not limited to programs of the EPA, USDA, HUD, CDBG, ARC or other federal agencies, the Cleaner Water Program funds shall comply with these agencies' program requirements, regulations, and laws such as compliance with the Davis-Bacon Act, the Federal Environmental Protection Act and others.
11. SAM.gov Requirements. Grantees are required to have an active registration with the System for Award Management (SAM) (<https://www.sam.gov>).
12. All correspondence and document sharing between the Authority and the Grantee shall be by email and portable document format (.pdf) attached to email.

Conditions

The following is a list of the standard conditions to be satisfied either prior to execution of the Assistance Agreement or incorporated in the Assistance Agreement. The Grantee shall provide completed documentation marked with the corresponding Exhibit Number related to each condition. Forms and document templates for each condition are provided in Attachment C. All required documentation must be submitted to the staff member of the Authority assigned to the Grantee.

1. The Project Profile (SX21067067) shall be updated to accurately reflect project data, including the budget and mapping information, effective as of the date certified in **Exhibit 1**.

Documentation of final funding commitments from all parties other than the Authority as identified on the Project Budget (Attachment B) and in the Budget Tab of the updated Project Profile shall be provided prior to execution of the Assistance Agreement and disbursement of grant funds. Any subsequent changes in the anticipated project funding shall be immediately reported to the Authority and may cause this grant to be subject to further consideration.

2. The Grantee shall obtain a Vendor Number from the Finance and Administration Cabinet of the Commonwealth of Kentucky and provide that Vendor Number to the Authority as **Exhibit 2**.
3. The project shall comply with the reporting requirements of the Federal Funding Accountability and Transparency Act (FFATA). The Grantee shall complete the Transparency Act Reporting Information Form and return it to the Authority as **Exhibit 3**.

Exhibits 1 – 3 must be completed and returned to the Authority with this signed Conditional Commitment Letter.

After providing the Authority with the signed Conditional Commitment Letter and Exhibits 1 through 3, the Authority will forward to the Grantee the Grant Assistance Agreement. Upon completion by the Grantee of Exhibits 4, 5, and 7, the Authorized Official shall sign the Assistance Agreement and forward the Exhibits, with supporting documentation, and the signed Assistance Agreement to the Authority for execution. The Grantee shall continue to complete the remaining Exhibits (6 and 8 through 10).

4. After receiving the Grant Assistance Agreement: At an official meeting of its governing body, the Grantee shall approve acceptance of the Grant and the Assistance Agreement, amend its annual budget accordingly, and designate an Authorized Official to sign all appropriate documents. The resolution and the certificate of Recording Officer are submitted as **Exhibit 4**.
5. After receiving the Grant Assistance Agreement: Legal Counsel for the Grantee must provide an opinion to the Authority as to the legality of Grantee accepting the grant and approving the Assistance Agreement as **Exhibit 5**.
6. The Grantee shall contract with an Engineer licensed in Kentucky **Exhibit 6A** and agree to the fee amount limitation as determined by the most recent USDA Rural Development Utility Program Fee Guide by jointly signing **Exhibit 6B**.

The Grantee may request 50% of the engineering design fee as budgeted in the Project Profile when the Project plans and specifications are submitted to the Kentucky Division of Water (DOW). The balance of that fee may be requested once the Grantee provides a copy of the plans approval letter from DOW to the Authority.

7. The Grantee shall provide documentation of Kentucky eClearinghouse Endorsement and eClearinghouse Comments as **Exhibit 7**.

Any significant changes or additions to the Project, deviating from the original scope of work described in the Project Profile, may require a new or amended eClearinghouse Endorsement, as determined by the eClearinghouse or the Authority.

8. The Grantee shall submit the DOW Plans approval letter to the Authority as **Exhibit 8**.
9. The Grantee shall complete and submit the bid package (**Exhibit 9**) to the Authority within 14 days of bid opening, which bid package shall include:
 - a. Engineer's Approval of "as-bid" project budget, with Engineer's signature;
 - b. Affidavit of Publication with Tear Sheet of Advertisement;
 - c. Certified Bid Tabs with Engineer's seal, number and signature;
 - d. Clear Site Certificates for each parcel of real property and easements, with date and signatures of the Grantee (**Exhibit 9A**) and Title Counsel (**Exhibit 9B**).

10. The Grantee shall certify that its accounting system for water treatment and distribution and sewer service is maintained separately from its accounting for all other operations, and that its service rates are based on the cost of providing the service and, that its utility operations are audited at least every two years as **Exhibit 10**.
11. Upon project completion, the Grantee shall submit, to the Authority, the Certificate of Project Completion, signed by the project Engineer, the Authorized Official and the Project Administrator as **Exhibit 11**.

**ATTACHMENT B
PROJECT BUDGET**

CWP PROJECT BUDGET

Project Title: LFUCG - West Hickman Creek / Veterans Park WQ Improvement

WRIS#: SX21067067

Project Budget: Estimated

enter date

As Bid

enter date

Revised

enter date

Cost Classification		CWP Grant 22CWS009	Funding Source 1	Funding Source 2	Funding Source 3	Funding Source 4	Funding Source 5	Local Funds	Unfunded Costs	Total
1	Administrative Expenses									
2	Legal Expenses									
3	Land, Appraisals, Easements									
4	Relocation Expense & Payments									
5	Planning									
6	Engineering Fees - Design									
7	Engineering Fees - Construction									
8	Engineering Fees - Inspection									
9	Engineering Fees - Other									
10	Construction									
11	Equipment									
12	Miscellaneous									
13	Contingencies									
	Total									

Funding Sources	Amount	Date Committed
1		
2		
3		
4		
5		
	Total	

Construction Cost Categories	Funding Source	Total Cost
Treatment Secondary Portion		
Treatment Advanced Portion		
Inflow & Infiltration Correction		
Major Sewer Rehabilitation		
Collector Sewers		
Interceptor Sewers, including Pump Stations		
Combined Sewer Overflow Correction		
Stormwater		
Energy Conservation		
Water Conservation		
TOTAL CONSTRUCTION COSTS		

Local Funding Sources	Amount	Date Committed
1		
2		
	Total	

Total Funding

-

ATTACHMENT C

CWP GRANT CONDITIONS – COMPLIANCE FORMS & EXHIBITS

Note A: Exhibits 1 through 3 must be completed, signed electronically or manually, then scanned and emailed to THE AUTHORITY with the Grantee's signed Conditional Commitment Letter.

- Exhibit 1 Notification to The Authority of completed Review / Update of Project Profile
- Exhibit 2 Confirmation of Grantee Vendor Number – via KY Finance Cabinet Application
- Exhibit 3 Transparency Act Reporting Information Form

Note B: Upon receipt of the signed Conditional Commitment Letter, the Authority's verification of Exhibits 1-3, and approval by the Capital Projects and Bond Oversight Committee (CPBOC), the Authority will forward to the Grantee the Grant Assistance Agreement. AFTER receiving the Grant Assistance Agreement, the Grantee should complete Exhibits 4, 5, and 7. Then the Authorized Official may sign the Agreement and email it to the Authority with Exhibits 4, 5, and 7.

- Exhibit 4 Grantee Resolution (Accepting Grant, Approving Agreement, Amending Budget, Designating an Authorized Official) and Certificate of Recording Officer
- Exhibit 5 Opinion of Legal Counsel Relating to the Grantee Resolution
- Exhibit 7 Kentucky eClearinghouse Endorsement Letter with Comments.

Note C: The Grantee may request 50% of the engineering design fee (as budgeted in the Project Profile) upon receipt of Attachment B and Exhibits 1 thru 7 and may request the balance of the engineering design fee upon the Authority's receipt of Exhibit 8.

- Attachment B CWP Project Budget
- Exhibit 6A Copy of the Engineering Services Contract
- Exhibit 6B Grantee & Engineer Fee Confirmation
- Exhibit 8 Copy of the DOW Approval Letter of Engineering Plans & Specifications.
- Exhibit 9 Bid Package: Engineer's Approval of "as-bid" project budget
Affidavit of Newspaper Publication with Tear Sheet
Certified Bid Tabs with Engineer's seal, number, and signature
- Exhibit 9A Clear Site Certificate – CWP Grantee.
- Exhibit 9B Clear Site Certificate – Title Attorney.
- Exhibit 10 Certification Regarding Utility Accounting, Cost-Based Rates and Auditing.
- Exhibit 11 Certificate of Project Completion.

EXHIBIT 1

CERTIFICATION OF PROJECT PROFILE REVIEW & UPDATE

The Project Profile was reviewed and updated in the Water Resource Information System
as of _____ by the Grantee's Authorized Official and Project Administrator.

(date)

Project Administrator: _____

Grant Number: _____ **22CWS009**

EXHIBIT 2

EZ VENDOR REGISTRATION APPLICATION

A Vendor Number must be obtained on-line through the Kentucky Cabinet for Finance and Administration. This Vendor Number is *required for Grantee to receive payments from the Authority.*

[Vendor Registration Guide](#)

[Link to the Vendor Self Service Site](#)

The Grantee's Vendor Number is _____.

Project Administrator: _____

Grant Number: 22CWS009

EXHIBIT 3
TRANSPARENCY ACT REPORTING INFORMATION FORM
CLEANER WATER PROGRAM GRANT

This form is required for all utility entities with projects funded in whole or in part from the Cleaner Water Program Grant Fund. Please complete this form if your entity has a Unique Entity ID or as soon as you receive your Unique Entity ID and return it with the signed Conditional Commitment Letter you received from the Authority.

Grantee Information:

Grantee Name:	Lexington-Fayette Urban County Government
Unique Entity ID (generated by SAM.gov)*:	
KIA Grant Number:	22CWS009
CWP WRIS Project Number	SX21067067
Street Address	
City, State and Zip (Zip must include 4 digit extension)	
Federal Congressional District(s) of Grantee Utility Service Area:	

*If the Unique Entity ID provided above is registered under a different name than the recipient of the grant funding, please provide the registration name below:

Unique Entity ID Name	
-----------------------	--

*If the recipient has not yet obtained a Unique Entity ID, please do so upon receipt of the Authority's Conditional Commitment letter and provide notification to the Authority of the number once issued. For instructions on the Unique Entity ID registration, please see the link at the bottom of this page.

Physical Location of Project (Primary Place of Performance)

Street Address	
City, State and Zip (Zip must include 4 digit extension)	
Federal Congressional District(s) of Project Location	

Reliance upon Federal Assistance (please answer the below questions Yes or No):

Did recipient receive 80% or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards) during the last fiscal year?	
Did recipient receive \$25 million or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards) during the last fiscal year?	
Does the public have access to compensation of senior executives of the recipient through periodic reports filed under Section 13A or 15D of the Securities Exchange Act of 1934 or Section 6104 of the Internal Revenue Code of 1986?	

Unique Entity ID Registration Information: <https://sam.gov>

EXHIBIT 4

RESOLUTION

RESOLUTION OF THE LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT ACCEPTING THE GRANT, APPROVING THE GRANT ASSISTENCE AGREEMENT, AUTHORIZING THE AMENDMENT OF THE LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT'S ANNUAL BUDGET, AND AUTHORIZING A REPRESENTATIVE TO SIGN ALL RELATED DOCUMENTS

WHEREAS, the Kentucky General Assembly has appropriated funds for infrastructure projects in House Bill 1 of the 2022 Regular Session of the Kentucky General Assembly for the Cleaner Water Program; and

WHEREAS, the Lexington-Fayette Urban County Government (the "Grantee") has previously determined that it is in the public interest to acquire and construct certain facilities and improvements to the Grantee's utility system (the "Project"); and

WHEREAS, the Grantee desires funding from the Kentucky Infrastructure Authority (the "Authority") for the purpose of acquisition and construction of the Project; and

WHEREAS, in order to obtain a grant from the Cleaner Water Program for the Project, and administered by the Authority, the Grantee is required to enter into an assistance agreement (the "Agreement") with the Authority.

NOW, THEREFORE, BE IT RESOLVED by the governing body of the Lexington-Fayette Urban County Government as follows:

SECTION 1. The Grantee hereby accepts the grant award and approves the Agreement between the Grantee and the Authority to provide the necessary funds to the Grantee for the Project.

SECTION 2. That _____ is hereby designated to be the Grantee's "Authorized Official" for this Project and is hereby directed and empowered by the Grantee to execute the Agreement, related documents and agreements, and to otherwise act on behalf of the Grantee to effect such grant award, and to engage a qualified Project Administrator.

SECTION 3. That the Grantee hereby agrees and commits to include, by amendment to its annual budget and audit process, the receipts and expenditures of funds subject to the Agreement up to and including the date of Project closeout.

SECTION 4. That this resolution shall take effect at the earliest time provided by law.

ADOPTED on _____, 202__.

LEXINGTON-FAYETTE URBAN
COUNTY GOVERNMENT

Authorized Signatory

CERTIFICATE OF RECORDING OFFICER

I, the undersigned, hereby certify that I am the duly qualified and acting Secretary/Clerk of the Grantee, and that the foregoing is a full, true and correct copy of a Resolution adopted by the governing body of said Grantee at a meeting duly held on _____, 202____; and that this official action appears as a matter of public record in the official records or journal of the Grantee; and that said meeting was held in accordance with all applicable requirements of Kentucky law, including Sections 61.810, 61.815, 61.820 and 61.823 of the Kentucky Revised Statutes; and that a quorum was present at the meeting; and that this official action has not been modified, amended, revoked or repealed and is now in full force and effect.

IN TESTIMONY WHEREOF, witness my signature, below, on _____, 202____.

Secretary/Clerk

EXHIBIT 5

**OPINION OF LEGAL COUNSEL
RELATING TO GRANTEE RESOLUTION**

(Content below to be placed on letterhead of Legal Counsel for Grantee)

(Date)

Kentucky Infrastructure Authority
100 Airport Road, Third Floor
Frankfort, Kentucky 40601

RE: Grant Assistance Agreement by and between Kentucky Infrastructure Authority and Grantee, dated as of _____, 202__.

Ms. Sandy Williams:

The undersigned is an attorney at law duly admitted to the practice of law in the Commonwealth of Kentucky and serves as legal counsel to the Lexington-Fayette Urban County Government, hereinafter referred to as the "Grantee". I am familiar with the organizational structure and operations of the Grantee and the laws of the Commonwealth applicable thereto. Additionally, I am familiar with the utility infrastructure project (the "Project") for which the Grant Assistance Agreement (the "Agreement") between the Kentucky Infrastructure Authority (the "Authority") and the Grantee is being authorized, executed and delivered.

I have reviewed the form of Agreement by and between the Authority and the Grantee and the legislation of the governing body authorizing the execution and delivery of said Agreement.

Based upon my review I am of the opinion that:

1) The Grantee is a (unit of local government, or a special purpose governmental entity or a corporation) of the Commonwealth of Kentucky duly organized and validly existing under the Constitution and statutes of the Commonwealth of Kentucky.

2) The Agreement has been duly executed and delivered by the Grantee and is a valid and binding obligation of the Grantee, enforceable in accordance with its terms, except to the extent that the enforceability thereof may be limited by equitable principles and by bankruptcy, reorganization, moratorium, insolvency, or similar laws heretofore or hereafter enacted relating to or affecting the enforcement of creditors' rights or remedies generally.

3) The Grantee has all necessary power and authority (i) to enter into, perform and consummate all transactions contemplated by the Agreement, and (ii) to execute and deliver the documents and instruments to be executed and delivered by it in connection with the construction of the Project.

4) The execution and delivery of the Agreement and the performance by the Grantee of its obligations thereunder does not and will not conflict with, violate, or constitute a default under any court or administrative order, decree or ruling, or any law, statute, ordinance or regulation, or any agreement, indenture, mortgage, lease, note or other obligation or instrument, binding upon the Grantee, or any of its properties or assets.

5) To the best of my knowledge after due inquiry there is no action, suit, proceedings or investigation at law or in equity before any court, public board or body pending or threatened against, affecting or questioning (i) the valid existence of the Grantee, (ii) the right or title of the members and officers of Grantee to their respective positions, (iii) the authorization, execution, delivery or enforceability of the Agreement or the application of any monies or security therefore, (iv) the construction of the Project, or (v) that would have a material adverse impact on the ability of the Grantee to perform its obligations under the Agreement.

6) None of the proceedings or authority heretofore had or taken by the Grantee for the authorization, execution or delivery of the Agreement has or have been repealed, rescinded, or revoked.

7) All proceedings and actions of the Grantee with respect to which the Agreement is to be delivered were in place or taken at meetings properly convened and held in substantial compliance with the applicable provisions of Sections 61.805 to 61.850 of the Kentucky Revised Statutes.

Respectfully,

EXHIBIT 6A
ENGINEERING SERVICES

If the Grantee's Project requires professional engineering services, such services shall be properly procured in accordance with KRS 45A.730 to 45A.750.

A copy of the Engineering Contract between the Grantee and the Engineer shall be submitted to the Authority, marked as **Exhibit 6A**.

Please check the box below that most closely describes your project. If additional comments need to be made, please provide comments in the blank area below or attach a separate sheet.

- This project requires an engineer and will have an engineering contract.
- This project was designed by an in-house engineer and will not have an engineering contract.
- This project does not require design by an engineer and will not have an engineering contract.

EXHIBIT 6B

GRANTEE & ENGINEER FEE CONFIRMATION

The Authority requires that the Engineer's fee be calculated based on the Engineer's estimated net construction cost of the Project in conformance with the latest version of the USDA Rural Development Utility Program Fee Guide.

Consequently, when services of a professional engineer are required for the Grantee's Project, the Grantee and the Project Engineer must confirm, by signature below, that:

The Grantee and the Professional Engineer concur and hereby state that the total dollar amount for all professional engineering services provided to the Grantee by the Engineer relating to the Project, as set out in the Project Profile, to be paid in sum, cumulatively, over the course of Project implementation, shall be less than or not to exceed the fee amounts as set out in the approved Project Profile Budget, as determined by the Engineer. Higher amounts for materials costs and construction costs than those estimated as contained in the Project Profile, as may result from Project bidding, do not warrant an increase in Engineering Fees unless the Project must be re-bid or infrastructure components must be re-designed as a consequence of bid-price overages. Further, it is understood that any proposed amendment to the Engineering Contract, as relates to the Grantee's Project is subject to prior written approval of the Authority.

Grantee Authorized Official: _____
Signature

Professional Engineering Firm: _____

Professional Engineer: _____
Signature

Please check the box below if the project does not require a contract with an outside engineer. If additional comments need to be made, please provide comments in the blank area below or attach a separate sheet.

- This form does not apply because the project was designed by an in-house engineer or the project does not require design by an engineer.

EXHIBIT 7

COPY OF eCLEARINGHOUSE ENDORSEMENT LETTER WITH COMMENTS

Note: In submitting the Project to the Kentucky eClearinghouse, be advised that the source of the Kentucky Cleaner Water Program funds is the American Rescue Plan Act of 2021, which established the Coronavirus State Fiscal Recovery Fund, and were appropriated through House Bill 1 of the 2022 Regular Session of the Kentucky General Assembly.

For purposes of the KY eClearinghouse, these funds are listed in the Catalog of Federal Domestic Assistance as ALN 21.027

[Link to eClearinghouse](#)

EXHIBIT 8**COPY OF KENTUCKY DIVISION OF WATER APPROVAL LETTER
FOR
ENGINEER'S PROJECT PLANS & SPECIFICATIONS**

Please check the box below that most closely describes your project. If additional comments need to be made, please provide comments in the blank area below or attach a separate sheet.

- This project requires DOW approval and the approval letter is attached.
- This project does not require DOW approval and the approval letter is not applicable.

EXHIBIT 9**THE BID PACKAGE**

Provide a signed copy of each of the following elements of the Bid Package to the Authority within 14 days of bid opening:

- 1) Engineer's Approval of "as-bid" project budget, with Engineer's signature.
- 2) Affidavit of Newspaper Publication with Tear Sheet of Advertisement.
- 3) Certified Bid Tabs with Engineer's seal, number, and signature.

Please check the box below that most closely describes your project. If additional comments need to be made, please provide comments in the blank area below or attach a separate sheet.

- Procurement for this project requires the project to be bid. The bid package referred to above is attached.
- Procurement for this project falls under small purchase procurement and requires 3 quotes. The quotes are attached.
- Procurement for this project falls under a procurement master agreement. The master agreement is attached.
- Procurement for this project used another procurement type and is described below.

Other Procurement description: _____

EXHIBIT 9A

CLEAR SITE CERTIFICATE – CWP Grantee

I _____, the Authorized Official of the Lexington-Fayette Urban County Government, certifies that the Grantee has acquired all real property, including easements and rights-of-way, that are or will be required for construction, (erection, extension, modification, addition) operation and maintenance of the utility infrastructure project identified above.

I certify that the Grantee will not use Cleaner Water Program Funds for the purchase of real property (including easements) unless the purchase is from a willing seller.

I certify that, if another water or wastewater entity is served by the Project identified above, either the Grantee cited above or the entity to be served has acquired real property including easements and rights-of-way required for the proposed service.

I certify that the Title Attorney’s Certification given on the attached certificate covers all real property including easements and rights-of way required for construction, operation and maintenance of the Grantee’s project identified above.

I further certify that all real property, including easements required for the Grantee’s project identified above, was acquired in accordance with the requirements of the Surface Transportation and Uniform Relocation Assistance Act of 1987 as set forth in 49 CFR Part 24.

Dated this ___ day of _____, 20__

Grantee’s Authorized Official

Title (Chairman, Mayor, Commissioner, Manager, Superintendent, etc.)

EXHIBIT 9B

CLEAR SITE CERTIFICATE – Title Attorney

I, _____, an Attorney at Law, acting as Title Counsel to the Lexington-Fayette Urban County Government (the “Grantee”), the owner of the Project cited above, do hereby certify:

1. That I have investigated and ascertained the location of and am familiar with the legal description of the site or sites being provided by the Grantee for all elements of the Project identified above to be constructed (modified, extended, improved, altered) operated and maintained in and upon such site or sites.
2. That I have examined the deed records of the county or counties in which such Project is to be located, and in my opinion the Grantee has a legal and valid fee simple title or such other estate or interest in the site of the Project, including necessary easements and rights-of-way sufficient to assure undisturbed use and possession for the purpose of construction, operation and maintenance for the estimated life of the Project.
3. That any deeds or documents required to be recorded in order to protect the title of the owner and the interest of the Grantee have been duly recorded and filed of record wherever necessary.
4. If applicable, that the title to real property for which the Kentucky Infrastructure Authority funded the cost has been encumbered in accordance with the requirements of State and local law to adequately protect the interest of the Kentucky Infrastructure Authority.
5. Remarks:

Dated this _____ day of _____, 20____.

Attorney at Law: _____

Address: _____

EXHIBIT 10

**CERTIFICATION REGARDING UTILITY ACCOUNTING , COST-BASED RATES
AND AUDITING**

I, the Authorized Official of the Lexington-Fayette Urban County Government (the "Grantee"), hereby certify that the Grantee agrees, as a condition of its Cleaner Water Program fund award, as follows:

- a) to establish and use a financial accounting system that accounts for the operations of water treatment and distribution separately from all other operations of the Grantee;
- b) to establish service rates based upon the cost of providing the service; and
- c) that the Authority may require an audit to be conducted of the Grantee's utility at least once every two (2) years.

Lexington-Fayette Urban County Government

Printed Name of Authorized Official

Signature of Authorized Official

Date

EXHIBIT 11

CERTIFICATE OF PROJECT COMPLETION

Pursuant to the Grant Assistance Agreement between the Kentucky Infrastructure Authority (the "Authority") and the Lexington-Fayette Urban County Government (the "Grantee"), this certificate, signed by the Grantee's Engineer and the Grantee, confirms that the following Project implementation activities are complete.

1. The Project construction has been completed and payment in full has been made to all vendors and/or contractors for labor, services, materials, supplies, machinery, and equipment included in the Project, as appropriate.
2. The Project is complete and is available for the provision of services which are expected to commence on or about _____.
3. A set of Project construction plans, with hand-drawn illustrations and notations reflecting any changes and variances from the original plans, if any, has been delivered to the Project Administrator for use in updating the Water Resources Information System appropriately.

Project Engineer: _____

Date: _____

4. All lands, easements, rights of ways, temporary or permanent permits or other authorizations or clearances as well as necessary constructed structures or facilities in connection with the Project have been acquired, constructed, equipped, and installed and all costs and expenses incurred in connection therewith have been paid in full.

Authorized Official: _____

Project Administrator: _____

Date: _____

Appendix C

USDA Rural Development Utility Program Fee Guide

KENTUCKY USDA/RURAL DEVELOPMENT UTILITY PROGRAM FEE GUIDE

The following Tables I and II are designed to represent usual and customary reimbursement percentages for the fees for Professional Engineering Services and Resident Project Representatives respectively. These tables are to be utilized in conjunction with projects using the “Engineers Joint Contract Documents Committee (EJCDC) documents for Project Contract Documents to help provide guidance when determining applicable fees.

FEEES FOR PROFESSIONAL ENGINEERING SERVICES PERCENTAGE OF CONSTRUCTION COST

TABLE I – BASIC DESIGN

These fees shall pertain to projects requiring complex or detailed engineering design. This will include sewage treatment plants, sewage collection systems, sewage lift stations, water treatment plants, water distribution mains and appurtenances, water pump stations, water storage facilities and renovations of water and sewer facilities.

<u>NET CONSTRUCTION COST</u>	<u>PERCENTAGE FEE</u>
\$	
100,000	14.00
200,000	12.20
300,000	11.25
400,000	10.70
500,000	10.30
600,000	9.73
700,000	9.45
800,000	9.20
900,000	9.00
1,000,000	8.85
2,000,000	7.65
3,000,000	7.22
4,000,000	6.90
5,000,000	6.75
6,000,000	6.65
7,000,000	6.55
8,000,000	6.45
9,000,000	6.40

Fees for less complex projects such as light industrial buildings, roads, streets, storm drains 24 inches and larger, and appurtenances related thereto are typically 85% of the above Table I percentages.

FEES FOR RESIDENT PROJECT REPRESENTATIVE SERVICES
PERCENTAGE OF CONSTRUCTION COST

TABLE II – INSPECTION COSTS

<u>NET CONSTRUCTION COST</u>	<u>PERCENTAGE FEE</u>
\$	
100,000	13.00
200,000	10.40
300,000	8.80
400,000	8.00
500,000	7.40
600,000	6.80
700,000	6.40
800,000	6.00
900,000	5.80
1,000,000	5.60
2,000,000	4.60
3,000,000	4.00
4,000,000	3.70
5,000,000	3.50
6,000,000	3.32
7,000,000	3.20
8,000,000	3.12
9,000,000	3.05

NOTE: Add two percent to the above Table II percentages for the first \$1,000,000 cost of treatment facilities. Add one percent to the above percentages for all over \$1,000,000 cost of treatment facilities.

GENERAL INFORMATION FOR BASIC AND RESIDENT PROJECT REPRESENTATIVE FEES

The Resident Project Representative will maintain a daily log meeting USDA/Rural Development Utility Program requirements. Respective percentages for construction costs between the values listed in the schedule can be determined by interpolation. If a project is divided into units and all units are authorized for design at the same time, they are treated as one whole project and the typical compensation can be determined by adding together the cost of the construction of the various units and applying the table to the sum of these costs. If remaining funds are used and additional construction is designed and bid, the project is considered a new project.

OWNER _____	ENGINEER _____
TITLE _____	TITLE _____
DATE _____	DATE _____