

Kentucky Home Trust Building, 450 South Third Street, Louisville, Kentucky 40202-1410
Telephone (502) 569-7525 Telefax (502) 569-7555 www.rubinhays.com

CHARLES S. MUSSON
W. RANDALL JONES
CHRISTIAN L. JUCKETT

May 16, 2017

RECEIVED

MAY 18 2017

Public Service
Commission

Dr. Talina Mathews
Executive Director
Public Service Commission
P.O. Box 615
Frankfort, Kentucky 40602

Re: Christian County Water District PSC Application - KRS 278.023

Dear Dr. Mathews:

Enclosed please find the original and ten (10) copies of the Application of the Christian County Water District for a Certificate of Public Convenience and Necessity to construct, finance and increase rates pursuant to KRS 278.023.

Also enclosed are eleven (11) copies of the exhibits required pursuant to 807 KAR 5.069, with the **exception of the Preliminary and Final Engineering Reports, of which two copies are enclosed and the Plans and Specifications on electronic media in portable document format.**

If you need any additional information or documentation, please let us know.

Sincerely,

Rubin & Hays

By


W. Randall Jones

WRJ:ilm
Enclosures
cc: Distribution List

DISTRIBUTION LIST

**Re: Christian County Water District Waterworks Revenue Bonds, Series 2018, in
the principal amount of \$1,800,000**

Mr. Jeff Jones
Acting State Director
USDA, Rural Development
771 Corporate Drive, Suite 200
Lexington, Kentucky 40503-5477

Telephone: (859) 224-7336

Mr. Joseph Geffert
USDA, Rural Development
1095 National Mine Drive
Madisonville, Kentucky 42431
joseph.geffert@ky.usda.gov

Telephone: (270) 821-4430
Fax: (270) 825-3120

Mr. James R. Owen, Manager
Christian County Water District
P.O. Box 7
Hopkinsville, Kentucky 42241-0007
jameso@ccwd.net

Phone: (270) 886-3696

Chris Wilcutt, P.E.
McGhee Engineering, Inc.
202 Ewing Street
P.O. Box 267
Guthrie, Kentucky 42234-0267
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Telephone: (270) 483-9985
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John P. Kirkham, Esq.
Attorney at Law
P.O. Box 585
Hopkinsville, Kentucky 42241
jkirkham@hesenergy.net

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Fax: (270) 885-1123

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Rubin & Hays
Kentucky Home Trust Building
450 South Third Street
Louisville, Kentucky 40202
wrjones@rubinhays.com

Telephone: (502) 569-7534
Fax: (502) 569-7555

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

MAY 18 2017

Public Service
Commission

In the Matter of:

**THE APPLICATION OF THE CHRISTIAN COUNTY)
WATER DISTRICT FOR A CERTIFICATE)
OF PUBLIC CONVENIENCE AND) Case No. 2017- 00207
NECESSITY TO CONSTRUCT, FINANCE AND)
INCREASE RATES PURSUANT TO KRS 278.023)**

A P P L I C A T I O N

This Application of the Christian County Water District ("Applicant"), respectfully shows:

1. That Applicant is a water district created and existing under and by virtue of Chapter 74 of the Kentucky Revised Statutes.

2. That the post office address of Applicant is:

Christian County Water District
c/o Mr. James Owen, Manager
P.O. Box 7
Hopkinsville, Kentucky 42241
Phone: (270) 886-3696
Fax: (270) 886-0708
email address: jameso@ccwd.net

3. That Applicant, pursuant to the provisions of KRS 278.023, seeks (i) a Certificate of Public Convenience and Necessity ("CPCN"), permitting Applicant to construct a waterworks improvement project (the "Project"); (ii) an Order approving increased water rates; and (iii) approval of the proposed plan of financing said Project.

4. That the Project consists of the installation of (i) approximately 146,070 linear feet of 4, 6 and 8 inch water main replacement and extensions and associated appurtenances in the general vicinity of Ky highway 109; and (ii) approximately 46,635 linear feet of 6 and 8 inch water main replacement and extensions and associated appurtenances along Ky highway 1349 and U.S. highway 41N.

5. That Applicant proposes to finance the construction of the Project through the issuance of \$1,800,000 of its Waterworks Revenue Bonds; a grant from USDA, Rural Development

("RD") in the amount of \$700,000; and (iii) a Community Development Block Grant ("CDBG") in the amount of \$1,000,000. Applicant has a commitment from RD to purchase said \$1,800,000 of bonds maturing over a 40-year period, at an interest rate not to exceed 2.75% per annum as set out in the RD Letter of Conditions, as amended, filed herewith as an Exhibit.

6. That Applicant does not contemplate having the Project constructed with any deviation from minimum construction standards of this Commission.

7. That Applicant files herewith the following Exhibits pursuant to 807 KAR 5:069, Section 2 in support of this Application:

- A. Copy of RD Letter of Conditions, as amended (**Exhibit "A"**).
- B. Copy of RD Letter of Concurrence in Contract Award (**Exhibit "B"**).
- C. Copy of Preliminary Engineering Report, Final Engineering Report and certified bid tabulations.
- D. Certified statement from the Chairman of Applicant (**Exhibit "C"**), based upon statements of the Engineers for Applicant, concerning the following:
 - (1) The proposed plans and specifications for the Project have been designed to meet the minimum construction and operating requirements set out in 807 KAR 5:066 Section 4(3) and (4); Section 5(1); Sections 6 and 7; Section 8(1) through (3); Section 9(1) and Section 10.
 - (2) All other state approvals or permits have been obtained;
 - (3) The proposed rates of Applicant shall produce the total revenue requirements recommended in the engineering reports; and
 - (4) Setting out the dates when it is anticipated that construction will begin and end.
- E. Copy of the Plans and Specifications of the Project on electronic storage medium in portable document format.

8. That Applicant has complied with the "public postings" requirement of 807 KAR 5:069, Section 3(1)(a) and (b) by posting a copy of the Notice of Proposed Rate Change (the "Notice") (i) at its place of business; and (ii) within five (5) business days of the date this Application is submitted to the Commission, on its website (www.ccwd.net) along with a hyperlink to the location on the Commission's website where the case documents are available. Applicant has also arranged for the publication, prior to or at the same time this Application is filed, of the Notice pursuant to 807 KAR 5:069, Section 3(2) in the newspapers of general circulation in Applicant's

service area. Said Notice sets out the content requirements of 807 KAR 5:069, Section 3(4). A copy of said Notice is filed herewith as **Exhibit "D"**. Applicant shall file with this Commission no later than fifteen (15) days from the date this Application was initially filed, an affidavit and tearsheet from the publisher as required by 807 KAR 5:069 Section 3(3)(b).

9. That the foregoing constitutes the documents necessary to obtain the approval of this Commission in accordance with Section 278.023 of the Kentucky Revised Statutes and in accordance with the "Filing Requirements" specified in 807 KAR 5:069, Section 2.

WHEREFORE, Applicant, the Christian County Water District asks that the Public Service Commission of the Commonwealth of Kentucky grant to Applicant the following:

- a. A Certificate of Public Convenience and Necessity permitting Applicant to construct a water system improvement project.
- b. An Order approving the financing arrangements made by Applicant, viz., the issuance of \$1,800,000 of Christian County Water District Waterworks Revenue Bonds at an interest rate not to exceed 2.75% per annum, a grant from RD in the amount of \$700,000 and a CDBG grant in the amount of \$1,000,000.
- c. An Order approving the proposed water rates as set out in Section 27 of the RD Letter of Conditions, as amended, filed herewith as an Exhibit.

Christian County Water District

By: 
Chairman
Board of Water Commissioners


W. Randall Jones, Esq.
Rubin & Hays, Counsel for Applicant
Kentucky Home Trust Building
450 South Third Street
Louisville, Kentucky 40202
Phone: (502) 569-7534
Fax: (502) 569-7555
wrjones@rubinhays.com



March 23, 2015

Ashbel Brunson, Chairman
Christian County Water District
P. O. Box 7
Hopkinsville, KY 42241-0007

Dear Chairman Brunson:

This letter establishes conditions which must be understood and agreed to by you before further consideration may be given to the application. The loan and grant will be administered on behalf of the Rural Utilities Service (RUS) by the State and Area office staff of USDA Rural Development. Any changes in project cost, source of funds, scope of services or any other significant changes in the project or applicant must be reported to and approved by USDA Rural Development, by written amendment to this letter. Any changes not approved by Rural Development shall be cause for discontinuing processing of the application. It should also be understood that Rural Development is under no obligation to provide additional funds to meet an overrun in construction costs.

This letter is not to be considered as loan and grant approval or as a representation as to the availability of funds. The docket may be completed on the basis of a RUS loan not to exceed \$1,800,000 and a RUS grant not to exceed \$700,000. No applicant cash contribution will be required.

If Rural Development makes the loan, the interest rate will be the lower of the rate in effect at the time of loan approval or the rate in effect at the time of loan closing, unless the applicant otherwise chooses. The loan will be considered approved on the date a signed copy of Form RD 1940-1, "Request for Obligation of Funds," is mailed to you.

Please complete and return the attached Form RD 1942-46, "Letter of Intent to Meet Conditions," if you desire that further consideration be given to your application.

The "Letter of Intent to Meet Conditions" must be executed within three weeks from the date of this letter or it becomes invalid unless a time extension is granted by Rural Development.

If the conditions set forth in this letter are not met within 210 days from the date hereof, Rural Development reserves the right to discontinue the processing of the application.

In signing Form RD 1942-46, "Letter of Intent to Meet Conditions," you are agreeing to complete the following as expeditiously as possible:

Rural Development • Kentucky State Office
771 Corporate Drive, Suite 200, Lexington, Kentucky 40502
Voice (859) 224-7300 • Fax (859) 224-4748 • TTY (859) 224-7422

USDA is an equal opportunity provider and employer.

If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (PDF), found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at program.intake@usda.gov.

Christian County Water District

1. Number of Users and Their Contribution:

There shall be 5,928 water users, of which all are existing users. The Area Director will review and authenticate the number of users.

2. Grant Agreement:

Attached is a copy of RUS Bulletin 1780-12, "Water and Waste System Grant Agreement," for your review. You will be required to execute a completed form at the time of grant closing.

3. Drug-Free Work Place:

Prior to grant closing, the District will be required to execute Form AD-1049, "Certification Regarding Drug-Free Workplace Requirements (Grants) Alternative I - For Grantees Other Than Individuals."

4. Repayment Period:

The loan will be scheduled for repayment over a period not to exceed 40 years from the date of the Bond. Principal payment will not be deferred for a period in excess of two years from the date of the Bond. Payments will be in accordance with applicable KRS, which requires interest to be paid semi-annually (January and July) and principal will be due on or before the first of January. Rural Development may require the District to adopt a supplemental payment agreement providing for monthly payments of principal and interest so long as the bond is held or insured by RUS. Monthly payments will be approximate amortized installments.

5. Recommended Repayment Method:

Payments on this loan shall be made using the Preauthorized Debit (PAD) payment method. This procedure eliminates the need for paper checks and ensures timely receipt of RD loan payments. To initiate PAD payments, Form RD 3550-28, "Authorization Agreement for Preauthorized Payments," should be signed by the District to authorize the electronic withdrawal of funds from your designated bank account on the exact installment payment due date. The Area Director will furnish the necessary forms and further guidance on the PAD procedure.

6. Reserve Accounts:

Reserves must be properly budgeted to maintain the financial viability of any operation. Reserves are important to fund unanticipated emergency maintenance, pay for repairs, and assist with debt service should the need arise.

The District will be required to deposit \$670 per month into a "Funded Debt Reserve Account" until the account reaches \$80,400. The deposits are to be resumed any time the account falls below the \$80,400.

The required monthly deposits to the Reserve Account and required Reserve Account levels are in addition to the requirements of the District's prior bond resolutions.

Christian County Water District

The monthly deposits to the Reserve Account are required to commence with the first month of the first full fiscal year after the facility becomes operational.

The District also needs to fund an account for short-lived assets by depositing a sum of \$6,000 monthly into the account. The funds in the short-lived asset account may be used by the District as needed to replace or add short-lived assets in the District's water system. This short-lived asset reserve amount replaces any previous short-lived assets requirements previously set with any prior RUS loan.

7. Security Requirements:

A pledge of gross water revenue(s) will be provided in the Bond Resolution. Bonds shall rank on a parity with existing bonds, if possible.

If this is not possible, the bond will be subordinate and junior to the existing bonds, in which case the District will be required to abrogate its right to issue additional bonds ranking on a parity with the existing bonds, so long as any unpaid indebtedness remains on this bond issue.

8. Land Rights and Real Property:

The District will be required to furnish satisfactory title, easements, etc., necessary to install, maintain and operate the facility to serve the intended users. The pipelines will be on private rights-of-way where feasible. Easements and options are to be secured prior to advertising for construction bids.

9. Organization:

The District will be legally organized under applicable KRS which will permit them to perform this service, borrow and repay money.

The District must maintain a current registration of their Dun and Bradstreet Data Universal Numbering System (DUNS) number in SAM.gov (System for Award Management) in order to receive federal loan and/or grant financial assistance. This registration must be updated/renewed at least annually.

10. Business Operations:

The District will be required to operate the system under a well-established set of resolutions, rules and regulations. A budget must be established annually and adopted by the District after review by Rural Development. At no later than loan pre-closing, the District will be required to furnish a prior approved management plan to include, as a minimum, provisions for management, maintenance, meter reading, miscellaneous services, billing, collecting, delayed payment penalties, disconnect/reconnect fees, bookkeeping, making and delivering required reports and audits.

11. Accounts, Records and Audits:

Christian County Water District

The District will be required to maintain adequate records and accounts and submit annual budgets and year-end reports (annual audits)/statistical and financial reports in accordance with subsection 1780.47 of RUS Instruction 1780.

The District shall be required to submit a copy of its audit agreement for review and concurrence by Rural Development prior to pre-closing the loan.

Annual audits, budgets, and reports will be submitted to Rural Development showing separate accounts.

12. Accomplish Audits for Years in Which Federal Financial Assistance is Received:

The District will accomplish audits in accordance with OMB Circular A-133, during the years in which federal funds are received. The District will provide copies of the audits to the Area Office and the appropriate Federal cognizant agency as designated by OMB Circular A-133.

13. Insurance and Bonding:

The following insurance and bonding will be required:

- A. Adequate Liability and Property Damage Insurance including vehicular coverage, if applicable, must be obtained and maintained by the District. The District should obtain amounts of coverage as recommended by its attorney, consulting engineer and/or insurance provider.
- B. Worker's Compensation - The District will carry worker's compensation insurance for employees in accordance with applicable state laws.
- C. Fidelity Bond - The District will provide Fidelity Bond Coverage for all persons who have access to funds. Coverage may be provided either for all individual positions or persons, or through "blanket" coverage providing protection for all appropriate employees and/or officials. The amount of coverage required for all RUS loans is \$200,000.
- D. Real Property Insurance - The District will obtain and maintain adequate fire and extended coverage on all structures including major items of equipment or machinery located in the structures. The amounts of coverage should be based on recommendations obtained by the District from its attorney, consulting engineer and/or insurance provider. Subsurface lift stations do not have to be covered except for the value of electrical and pumping equipment therein.
- E. Flood Insurance - The District will obtain and maintain adequate coverage on any facilities located in a special flood and mudslide prone areas.

14. Planning and Performing Development:

Christian County Water District

- A. The engineer should not be authorized to commence work on final plans and specifications until a determination has been made that the project can be planned and constructed within the estimated cost shown in paragraph "24" of this letter. The engineer may then proceed to develop final plans and specifications to be completed no later than 180 days from this date, and prepare bid documents. The Area Director is prepared to furnish the necessary guide to follow so as to keep the project plans and documents within our guidelines and requirements. The project should not be advertised for construction bids until all easements and enforceable options have been obtained, and total funds are committed or available for the project.
- B. The following documents will be submitted to Rural Development for review and must be concurred in by Rural Development prior to advertisement for construction bids:
1. Final plans, specifications and bid documents.
 2. Applicant's letter on efforts to encourage small business and minority-owned business participation.
 3. Legal Service Agreements.
 4. Engineering Agreements.

Revision in these documents will be subject to Rural Development concurrence. Any agreements, contracts, etc. not reviewed and approved by Rural Development will not be eligible for payment from project funds or revenues from facilities financed by this Agency.

Prior to receipt of an authorization to advertise for construction bids, the District will obtain advance clearance from Bond Counsel regarding compliance with KRS 424 pertaining to publishing of the advertisement for construction bids in local newspapers and the period of time the notice is required to be published.

15. Civil Rights & Equal Opportunity:

You should be aware of and will be required to comply with other federal statute requirements including but not limited to:

A. Section 504 of the Rehabilitation Act of 1973:

Under Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), no handicapped individual in the United States shall, solely by reason of their handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Rural Development financial assistance.

B. Civil Rights Act of 1964:

All borrowers are subject to, and facilities must be operated in accordance with, Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and Subpart E of Part 1901 of this Title, particularly as it relates to conducting

and reporting of compliance reviews. Instruments of conveyance for loans and/or grants subject to the Act must contain the covenant required by paragraph 1901.202(e) of this Title.

C. The Americans with Disabilities Act (ADA) of 1990:

This Act (42 U.S.C. 12101 et seq.) prohibits discrimination on the basis of disability in employment, state and local government services, public transportation, public accommodations, facilities, and telecommunications. Title II of the Act applies to facilities operated by state and local public entities that provide services, programs, and activities. Title III of the Act applies to facilities owned, leased, or operated by private entities that accommodate the public.

D. Age Discrimination Act of 1975:

This Act (42 U.S.C. 6101 et seq.) provides that no person in the United States shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

Rural Development financial programs must be extended without regard to race, color, religion, sex, national origin, marital status, age, or physical or mental handicap.

16. Closing Instructions:

The Office of General Counsel, our Regional Attorney, will be required to write closing instructions in connection with this loan. Conditions listed therein must be met by the District.

17. Compliance with Special Laws and Regulations:

The District will be required to conform to any and all state and local laws and regulations affecting this type project.

18. Water Treatment Plant and System Operator:

The District is reminded that the water treatment plant and system operator must have an Operator's Certificate issued by the State.

19. Prior to Pre-Closing the Loan, the District Will Be Required to Adopt:

- A. Form RUS Bulletin 1780-27, "Loan Resolution (Public Bodies)."
- B. Form RD 400-1, "Equal Opportunity Agreement."
- C. Form RD 400-4, "Assurance Agreement."
- D. Form AD-1047, "Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transaction."

Christian County Water District

- E. Form RD 1910-11, "Applicant Certification Federal Collection Policies for Consumer or Commercial Debts."
- F. RD Instruction 1940-Q, Exhibit A-1, "Certification for Contracts, Grants and Loans."
- G. RUS Bulletin 1780-22, "Eligibility Certification."

20. Refinancing and Graduation Requirements:

The District is reminded that if at any time it shall appear to the Government that the District is able to refinance the amount of the RUS indebtedness then outstanding, in whole or in part, by obtaining a loan from commercial sources at reasonable rates and terms, upon the request of the Government, the District will apply for and accept such loan in sufficient amount to repay the Government.

21. Commercial Interim Financing:

The District will be required to use commercial interim financing for the project during construction for the RUS loan portion of the financing, if available at reasonable rates and terms.

Before the loan is closed, the District will be required to provide Rural Development with statements from the contractor, engineer and attorneys that they have been paid to date in accordance with their contract or other agreements and, in the case of the contractor, that he has paid his suppliers and sub-contractors.

22. Disbursement of Project Funds:

A construction account for the purpose of disbursement of project funds (RUS) will be established by the District prior to start of construction. The position of officials entrusted with the receipt and disbursement of RUS project funds will be covered by a "Fidelity Bond," with USDA Rural Development as Co-Obligee, in the amount of construction funds on hand at any one time during the construction phase.

For each "construction account" as established, if the amount of RUS loan and grant funds plus any applicant contributions or funds from other sources to be deposited into the account are expected to exceed \$250,000 at any time, the financial institution will secure the amount in excess of \$250,000 by pledging collateral with the Federal Reserve Bank in an amount not less than the excess in accordance with 7 CFR, 1902.7(a).

During construction, the District shall disburse project funds in a manner consistent with subsection 1780.76 (e) of RUS Instruction 1780. Form RD 1924-18, "Partial Payment Estimate," or similar form approved by Rural Development, shall be used for the purpose of documenting periodic construction estimates, and shall be submitted to Rural Development for review and acceptance. Prior to disbursement of funds by the District, the Board of Directors shall review and approve each payment estimate. All bills and vouchers must be approved by Rural Development prior to payment by the District.

Christian County Water District

Form RD 440-11, "Estimate of Funds Needed for 30-Day Period Commencing _____," will be prepared by the District and submitted to Rural Development in order that a periodic advance of federal cash may be requested.

Borrowers receiving federal loan and/or grant funds by EFT will have funds directly deposited to a specified account at a financial institution with funds being available to the recipient on the date of payment. The borrower should complete Form SF-3881, "Electronic Funds Transfer Payment Enrollment Form," for each account where funds will be electronically received. The completed form(s) must be received by Rural Development at least thirty (30) days prior to the first advance of funds.

Monthly audits of the District's construction account records shall be made by Rural Development.

23. Disbursement of Grant Funds:

The RUS funds will be advanced as they are needed in the amount(s) necessary to cover the RUS proportionate share of obligations due and payable by the District. Grant funds, upon receipt, must be deposited in an interest bearing account in accordance with 7 CFR part 3016 (as applicable). Interest earned on grant funds in excess of \$100 (as applicable) per year will be submitted to RUS at least quarterly.

24. Cost of Facility:

Breakdown of Costs:

Development	\$ 1,973,700
Land and Rights	5,000
Legal and Administrative	30,500
Engineering	242,900
Interest	35,000
Contingencies	<u>212,900</u>
TOTAL	\$ 2,500,000

Financing:

RUS Loan	\$ 1,800,000
RUS Grant	<u>700,000</u>
TOTAL	\$ 2,500,000

25. Use of Remaining Project Funds:

After providing for all authorized costs, any remaining project funds will be considered to be RUS grant funds and refunded in proportion to participation in the project. If the amount of unused project funds exceeds the grant(s), that part would be RUS loan funds.

26. Proposed Operating Budget:

Christian County Water District

You will be required to submit to Rural Development a copy of your proposed annual operating budget that supports the proposed loan repayment prior to this agency giving you written authorization to proceed with the bidding phase. The operating budget should be based on a typical year cash flow, subject to completion of this project in the first full year of operation. Form RD 442-7, "Operating Budget," or similar form may be utilized for this purpose.

27. Rates and Charges:

Rates and charges for facilities and services rendered by the District must be at least adequate to meet cost of maintaining, repairing and operating the water system and meeting required principal and interest payments and the required deposits to debt service and/or depreciation reserve.

Water rates will be at least:

First	0	gallons @ \$	19.95. - Minimum Bill.
All Over	0	gallons @ \$	6.54. - per 1,000 gallons.

28. Water Purchase Contract:

The District will submit a Water Purchase Contract for approval by Rural Development before advertising for construction bids. If the contract is not on Form RD 442-30, "Water Purchase Contract," the contract will require approval by our Regional Attorney. The contract must meet the requirements of subsection 1780.62 of RUS Instruction 1780.

29. Compliance with the Bioterrorism Act:

Prior to the loan, the District will provide a certification they have completed a Vulnerability Assessment (VA) and prepared an emergency response plan (ERP) as required by the Safe Drinking Water Act (SDWA).

30. Floodplain Construction:

The District will be required to pass and adopt a Resolution or amend its By-Laws whereby the District will deny any water service to any future customer wishing to build on or develop property located within a designated floodplain. If a customer or developer requests service for construction in a designated floodplain, the customer or developer must provide evidence and a justification for approval by the District and Rural Development officials that there are no other alternatives to construction or development within the designated floodplain. The community must be a participant in the National Flood Insurance Program (NFIP) and the customer or developer must obtain the required permits prior to the tap on restrictions being waived.

31. Mitigation Measures:

Christian County Water District

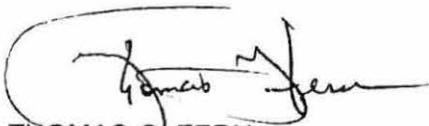
- A. The project shall be in compliance with all requirements noted in the Governor's Office for Local Development letter dated October 29, 2014, from Ms. Lee Nalley.
- B. The design and construction shall be in compliance with the requirements of the U.S. Fish and Wildlife Service as requested by letter dated February 26, 2015, and signed by Virgil Lee Andrews, Jr., Field Supervisor.
- C. The line design and construction shall be accomplished in a way that will leave flood plains and farmland without effect after construction is complete. The Army Corps of Engineers Nationwide Permit No. 12 applies to all floodplain and wetland utility line construction.
- D. Any excavation by Contractor that uncovers a historical or archaeological artifact shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO).
- E. The design and construction shall be in compliance with all local, state and federal environmental statutes, regulations and executive orders applicable to the project.
- F. Best Management Practices shall be incorporated into the project design, construction, and maintenance.

32. Final Approval Conditions:

Final approval of this assistance will depend on your willingness, with the assistance of all your co-workers, to meet the conditions of this letter in an orderly and systematic manner. Then too, final approval will depend on funds being available.

If you desire to proceed with your application, the Area Director will allot a reasonable portion of time to provide guidance in application processing.

Sincerely,



THOMAS G. FERN
State Director

Enclosures

cc: Area Director - Madisonville, Kentucky
Pennyrile ADD - Hopkinsville, Kentucky
McGhee Engineering - Guthrie, Kentucky
Johns and Assoc. - Hopkinsville, Kentucky



Rural Development

March 8, 2017

Kentucky State Office

771 Corporate Drive,
Suite 200
Lexington, KY
40503

Ashbel Brunson
Christian County Water District
P.O. Box 7
Hopkinsville, Kentucky 42241

Voice 859.224.7300
Fax 855.661.8335
TTY 859.224.7422

Re: Letter of Conditions Dated March 23, 2015

Dear Chairman Brunson:

This letter shall serve as Amendment No.1 to the Letter of Conditions dated March 23, 2015. The purpose of this amendment is to revise project costs and funding.

The second paragraph on Page 1 is revised to read as follows:

"This letter is not to be considered as loan and/or grant approval or as a representation as to the availability of funds. The docket may be completed on the basis of a RUS loan not to exceed \$1,800,000, a RUS grant not to exceed \$700,000, a Department of Housing and Urban Development (HUD) Community Development Block Grant (CDBG) of \$1,000,000. No applicant cash contribution is required."

Paragraph numbered "24" is revised to read as follows:

"24. Cost of Facility:

Breakdown of Costs:

Development	\$ 2,745,925
Land and Rights	5,000
Legal and Administrative	85,000
Engineering	345,300
Interest	35,000
Environmental & Miscellaneous	40,000
Contingencies	<u>243,775</u>
TOTAL	\$ 3,500,000

Financing:

RUS Loan	\$ 1,800,000
RUS Grant	700,000
HUD-CDBG	<u>1,000,000</u>
TOTAL	\$ 3,500,000

USDA is an equal opportunity provider, employer and lender.

If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (PDF), found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at program.intake@usda.gov.

All other provisions of the referenced Letter of Conditions remain in full force and unchanged.

Sincerely,



JEFF JONES
Acting State Director

cc: Area Director - Madisonville, Kentucky
Pennyrite ADD - Hopkinsville, Kentucky
McGhee Engineering - Guthrie, Kentucky
John P. Kirkham - Hopkinsville, Kentucky
PSC - ATTN: Talina Mathews - Frankfort, Kentucky

CP: AH: lb
Christian Co WD amend loc wep



Rural Development

May 10, 2017

Kentucky State Office

771 Corporate Drive,
Suite 200
Lexington, KY
40503

Ashbel Brunson, Chairman
Christian County Water District
P.O. Box 7
Hopkinsville, Kentucky 42241-007

Voice 859.224.7300
Fax 855.661.8335
TTY 859.224.7422

Re: Letter of Conditions Dated March 23, 2015

Dear Chairman Brunson:

This letter shall serve as Amendment No. 2 to the Letter of Conditions dated March 23, 2015. The purpose of this amendment is to revise item #27 to reflect the full required rate structure.

Paragraph numbered "27" is revised to read as follows:

"27. Rates and Charges:

Rates and charges for facilities and services rendered by the District must be at least adequate to meet cost of maintaining, repairing and operating the water system and meeting required principal and interest payments and the required deposits to debt service and/or depreciation reserve.

Water rates will be at least:

5/8 x 3/4 Inch Meter

First	0 gallons @ \$19.95 - Minimum Bill.
All Over	0 gallons @ \$ 6.54 - per 1,000 gallons.

1 Inch Meter

First	5,000 gallons @ \$52.65 - Minimum Bill.
All Over	5,000 gallons @ \$ 6.54 - per 1,000 gallons.

1.5 Inch Meter

First	10,000 gallons @ \$85.35 - Minimum Bill.
All Over	10,000 gallons @ \$ 6.54 - per 1,000 gallons.

2 Inch Meter

First	50,000 gallons @ \$346.95 - Minimum Bill.
All Over	50,000 gallons @ \$ 6.54 - per 1,000 gallons.

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If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (PDF), found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at program.intake@usda.gov.

4 Inch Meter

First	100,000 gallons @ \$673.95 - Minimum Bill.
All Over	100,000 gallons @ \$ 6.54 - per 1,000 gallons.

All other provisions of the referenced Letter of Conditions and of Amendment #1 dated March 8, 2017 remain in full force and unchanged.

Sincerely,



JEFF JONES
Acting State Director

cc: Area Director - Mayfield, Kentucky
Area Specialist - Madisonville, Kentucky
Pennyrite ADD - Hopkinsville, Kentucky
McGhee Engineering - Guthrie, Kentucky
Johns & Assoc. - Hopkinsville, Kentucky
Rubin & Hays - Louisville, Kentucky
PSC - ATTN: Talina Mathews - Frankfort, Kentucky



United States Department of Agriculture

Rural Development May 10, 2017

Kentucky State Office

771 Corporate Drive,
Suite 200
Lexington, KY
40503

Voice 859.224.7300
Fax 859.224.7425
TTY 859.224.7422

SUBJECT: Christian County Water District
Phase VIII System Upgrade
Contract Award Concurrence

TO: Area Office
Madisonville, Kentucky

Based on the bids received and the recommendation of the consulting engineer, Rural Development concurs in the award of subject contract to the low bidder on Contract 1, Horsley Construction, Inc., in the amount of \$1,944,533.40, and the low bidder on Contract 2, Horsley Construction, Inc., in the amount of \$745,82.25.

If you have any questions, please contact Julie Anderson, State Engineer, at (859) 224-7348.

Jeff Jones
Acting State Director
Rural Development

cc: McGhee Engineering
Guthrie, Kentucky

Randy Jones
Louisville, Kentucky

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**CERTIFICATE OF CHAIRMAN OF CHRISTIAN COUNTY
WATER DISTRICT AS TO STATEMENT REQUIRED BY
SECTION 2(6) OF 807 KAR 5:069**

I, the undersigned, hereby certify that I am the duly qualified and acting Chairman of the Christian County Water District and that said District is in the process of arranging to finance the construction of improvements to the water system (the "Project"), in cooperation with McGhee Engineering, Guthrie, Kentucky, the Engineers for the District (the "Engineers").

Based on information furnished to me by said Engineers, I hereby certify as follows:

1. That the proposed plans and specifications for the Project have been designed to meet the minimum construction and operating requirements set out in 807 KAR 5:066 Section 4(3) and (4); Section 5(1); Sections 6 and 7; Section 8(1) through (3); Section 9(1) and Section 10.
2. That all other state approvals and/or permits have been obtained.
3. That the rates proposed by the District in its current Application filed with the Kentucky Public Service Commission are contemplated to produce total revenue requirements recommended in the Engineering Reports prepared by such Engineers and filed with the Public Service Commission.
4. That it is now contemplated that construction of the Project will begin on or about June 15, 2017, and will end on or about June 10, 2018.

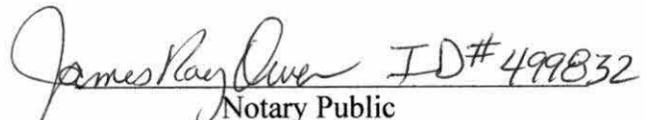
IN TESTIMONY WHEREOF, witness my signature this May 10, 2017.



Chairman
Christian County Water District

STATE OF KENTUCKY)
) SS
COUNTY OF CHRISTIAN)

Subscribed and sworn to before me by Ashbel Brunson, Chairman of the Board of Commissioners of the Christian County Water District on this May 10, 2017.

 ID# 499832

Notary Public
In and For Said State and County

NOTICE OF PROPOSED RATE CHANGE

In accordance with the requirements of the Kentucky Public Service Commission ("PSC") as set out in 807 KAR 5:069, Section 3, notice is hereby given to the customers of the Christian County Water District ("District") of a change in water rates for users of the District's water system. The changes in water rates are required by the U.S. Department of Agriculture, acting through Rural Development ("RD") in connection with a loan by RD to the District in the principal amount of \$1,800,000 to be evidenced by the issuance by the District of its waterworks revenue bonds in such amount, which RD has agreed to purchase provided the District meets certain conditions of RD, including revising the water rates as set forth below:

Current Monthly Water Rates

<u>5/8 x 3/4 Inch Meter</u>	<u>Monthly Rate</u>
First 0 gallons	\$16.00 Minimum
All Over 0 gallons	\$6.49 Per 1,000 gallons
<u>1 Inch Meter</u>	
First 5,000 gallons	\$48.45 Minimum
All Over 5,000 gallons	\$6.49 Per 1,000 gallons
<u>1.5 Inch Meter</u>	
First 10,000 gallons	\$80.90 Minimum
All Over 10,000 gallons	\$6.49 Per 1,000 gallons
<u>2 Inch Meter</u>	
First 50,000 gallons	\$340.50 Minimum
All Over 50,000 gallons	\$6.49 Per 1,000 gallons
<u>4 Inch Meter</u>	
First 100,000 gallons	\$665.00 Minimum
All Over 100,000 gallons	\$6.49 Per 1,000 gallons

Proposed Monthly Water Rates

<u>5/8 x 3/4 Inch Meter</u>	<u>New Monthly Rate</u>	<u>Dollar Change</u>	<u>Percent Change</u>
First 0 gallons	\$19.95	\$3.95	24.7%
All Over 0 gallons	\$6.54	\$0.05	0.8%
 <u>1 Inch Meter</u>			
First 5,000 gallons	\$52.65	\$4.20	8.7%
All Over 5,000 gallons	\$6.54	\$0.05	0.8%
 <u>1.5 Inch Meter</u>			
First 10,000 gallons	\$85.35	\$4.45	5.5%
All Over 10,000 gallons	\$6.54	\$0.05	0.8%
 <u>2 Inch Meter</u>			
First 50,000 gallons	\$346.95	\$6.45	1.9%
All Over 50,000 gallons	\$6.54	\$0.05	0.8%
 <u>4 Inch Meter</u>			
Fist 100,000 gallons	\$673.95	\$8.95	1.3%
All Over 100,000 gallons	\$6.54	\$0.05	0.8%

The proposed monthly water rates shall be effective for water sold after the date of the final approving Order of the PSC, which Order is expected to be issued no later than 30 days of the filing of the Application. The amount of average usage for all residential and commercial customers in the calendar year 2015 was 4,508 gallons per month thus generating an average monthly billing based on current rates of \$45.26. The proposed monthly rates will increase the average monthly billing to \$49.43 for an impact of \$4.17 or 9.2%. The Application for approval of the rate change has been filed with the PSC and may be examined during normal business hours at the following locations: (i) Christian County Water District Office, 1960 Dawson Springs Road, Hopkinsville, KY 42241; (ii) PSC, 211 Sower Boulevard, Frankfort, Kentucky, Monday through Friday, 8:00 a.m. to 4:30 p.m., E.T.; and (iii) via the PSC website at <http://psc.ky.gov>. Comments regarding the Application may be submitted to the PSC via its website or by mail to PSC, P.O. Box 615, Frankfort, Kentucky 40602.

The proposed rates are required under the terms of an agreement between the District and RD and KRS 278.023 does not grant the PSC any discretionary authority to modify or reject any portion of the agreement between the District and RD, or to defer the issuance of all necessary orders to implement the terms of the agreement. The RD loan proceeds will be used to finance the costs of (Contract 1) installation of approximately 146,070 linear feet of 4, 6 and 8 inch water main replacement and extensions plus associated appurtenances in the general vicinity of KY Highway 109; and (Contract 2) installation of approximately 46,635 linear feet of 6 and 8 inch water main replacement and extensions plus associated appurtenances along KY Highway 1349 & US Highway 41N. Signed: Ashbel Brunson, Chairman, Christian County Water District.

PRELIMINARY ENGINEERING REPORT

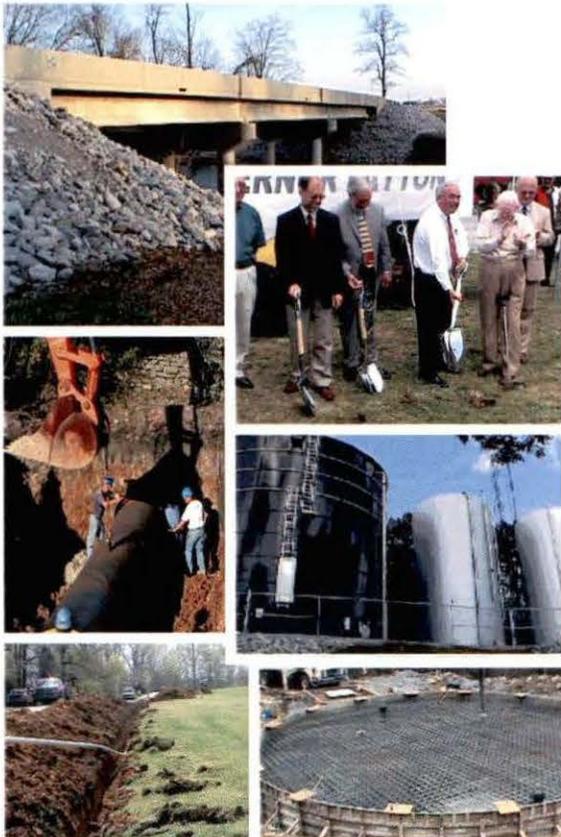
CHRISTIAN COUNTY WATER DISTRICT PHASE VIII SYSTEM UPGRADE PROJECT

October 2016 (Update)

RECEIVED

MAY 18 2017

Public Service
Commission



MCGHEE ENGINEERING, INC.

202 South Ewing Street
Guthrie, Kentucky 42234

(270) 483-9985
www.mcgheeengineering.com

**Preliminary Engineering Report
(Update)**

prepared for the

**Christian
County
Water
District**



Phase VIII System Upgrade Project

Ashbel Brunson, III
Chairman

David Johnson
Treasurer

Steve Hunt
Secretary

Ronald Adams
Commissioner

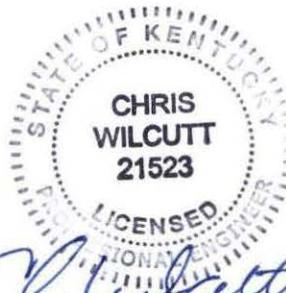
Barbara Morris
Commissioner

James Owen
Manager

prepared by

McGhee Engineering, Inc.

202 Ewing Street, P. O. Box 267
Guthrie, Kentucky 42234
(270) 483-9985



Chris Wilcutt

10/31/16

October 2016

Preliminary Engineering Report (Update)
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1.0 INTRODUCTION

The Christian County Water District (CCWD) was formed by Christian County Fiscal Court order November 13, 1967 to supply potable water to rural residents of Christian County, Kentucky. The District is controlled by a Board of Directors, which consists of a Chairman and four Directors. The District is regulated by the Kentucky Public Service Commission.

The Christian County Water District (CCWD) is comprised of approximately 570 miles of water line, 12 water storage tanks with a combined capacity of 1,850,000 gallons, and 13 booster pumping stations. CCWD serves approximately 5,934 customers, which are almost entirely rural residences. The CCWD purchases nearly all of its treated water from the City of Hopkinsville (HWEA), but also purchases portions from the Lake Barkley Water District and the Logan Todd Regional Water Commission. Average daily purchases is currently just over 1,303,200 gpd.

The CCWD is a large district both in terms of customers and geographic area, covering over 700 square miles. The CCWD is one of only three public water systems in Christian County. The other two are the City of Oak Grove and the Hopkinsville Water Environment Authority, which serves Hopkinsville, Crofton and Pembroke. The CCWD service area includes all of Christian County, excluding the incorporated areas of Hopkinsville, Crofton, Pembroke and Oak Grove, and the property occupied by Ft. Campbell. With the exception of a few isolated locations in the north and southwest parts of the county, most of the roads within the county have water service, with only short extensions needed from time to time to accommodate new development.

The main problems that have plagued the District were its long-term supply of treated water, low pressure in certain areas of the system, extending water service to unserved areas, and installing lines for improved hydraulic performance. HWEA's recent capacity improvements plus recent USDA extension projects have resolved the majority of these problems. However, there are many original areas that are now strained due to the dramatic growth of the District. To initiate a solution to alleviating these "growing pains", the Christian County Water District has requested funding assistance to undertake their Phase VIII System Upgrade Project.

The proposed project involves construction of nearly 37 miles of water line upgrade and replacement along seven primary transmission routes. The project is expected to be financed with a \$1,000,000 Community Block Development Grant and \$2,500,000 from USDA Rural Development via a loan and grant. The total cost of the proposed project is estimated to be \$3,500,000.

2.0 PROJECT PLANNING AREA

2.1 Location

The waterline construction of the Christian County Water District's project will be contained to seven highway corridors. Nearly 37 miles of new waterline upgrade and replacement have been identified and proposed along KY Highway 109, US Highway 41, KY Highway 1349, KY Highway 398, KY Highway 800, Consolation Loop and Mt. Carmel-Hawkins

Road. Pipe sizes will range from 6" to 8" piping, and both PVC and ductile iron piping will be considered for the upgrades and extension. The roads to be served, including project alternates, are shown in the following table.

Table 1
Project Road List

Map Ref.	Primary Roadways	Length	Number of	Line Size
		(Miles)	Houses	(Inches)
①	Madisonville Road South (US Highway 41)	5.3	150	8
②	Quisenberry Lane (KY Highway 1349)	3.7	57	6
③	Dawson Springs Road (KY Highway 109)	18.5	278	8
④	Consolation Loop & KY Highway 800	2.0	7	6
⑤	Bainbridge Road (KY Highway 398)	6.6	11	6
⑥	Mt. Carmel-Hawkins Road	0.9	5	6
	SUBTOTAL - New Line Extensions	36.9	508	
	Alternate Roadways	Length		Line Size
		(Miles)		(Inches)
A	Princeton Road (KY Highway 91)	10.1		6
B	Madisonville Road North (US Highway 41)	5.4		6
C	Everett Lane	2.8		6
D	Green Hills Subdivision	0.3		6
E	Happy Hollow Road	3.0		6
F	Witty Lane	3.8		6
	SUBTOTAL - Alternate Line Extensions	99.2		

The proposed project is illustrated on Exhibit 1.

2.2 Land Use and Environmental Resources Present

As stated earlier, the line portion of the project is contained entirely to seven different road corridors. The line work is proposed to be constructed within utility easements previously acquired or to be acquired by the Christian County Water District. The project will affect four main resources during construction: residential, agriculture, grazing and transportation. The general construction effect to the resources is the disturbances associated with building the facilities. No long-term impact is expected to any environmental resource.

An archeological investigation is not anticipated for the affected line routes due to the fact these areas have been previously disturbed. Furthermore, a declaration of "no adverse affect" has been issued for the project by the State Historical Preservation Officer.

2.3 Growth Areas and Population Trends

The population history of Christian County is an important element in determining the growth patterns over the last 60 years. Analysis of the population history will assist in forming a reliable estimate of the future water needs of the project area.

According to historical records, Christian County's population was 42,359 in 1950, which represents its lowest census year during the last 60 years. Table 2 provides the population history and projections of Christian County based on data obtained from the U.S. Bureau of the Census.

**Table 2
Population History and Projections**

		Historical						Projections					
		1 9 5 0	1 9 6 0	1 9 7 0	1 9 8 0	1 9 9 0	2 0 0 0	2 0 1 0	2 0 2 5	2 0 3 0	2 0 3 5	2 0 4 0	
CHRISTIAN	Hopkinsville	12,526	19,465	20,415	27,318	30,137	30,089	31,577	32,434	33,236	33,979	34,591	35,047
	Oak Grove	-	-	-	1,995	2,843	7,064	7,489	7,671	7,897	8,079	8,215	8,306
	Pembroke	532	517	634	732	794	797	869	890	916	937	953	964
	Crofton	500	892	631	823	713	838	749	769	788	806	821	831
	LaFayette	246	196	158	186	105	193	165	169	174	178	181	183
	Rural Areas	28,555	35,834	34,386	35,824	34,349	33,284	33,106	34,029	34,829	35,601	36,254	36,750
	Christina Co.	42,359	56,904	56,224	66,878	68,941	72,265	73,955	75,962	77,840	79,580	81,015	82,081
% Change			34.3%	-1.2%	18.9%	3.1%	4.8%	2.3%	2.7%	2.5%	2.2%	1.8%	1.3%
Notes to Table 1:		1. Shaded areas have been calculated based on census and projection data. 2. Oak Grove was incorporated in 1974.											
Sources to Table 1:		1. Historical & Projections provided by the KY State Data Center and Census Bureau University of Louisville, State Data Center (http://cbpa.louisville.edu/ksdc/)											

Analyzing Table 2 from 1950 to 2010 shows that Christian County grew rather sporadically through 1980, then at a fairly steady pace to the present. Much of the cities' gains came at the expense of the rural populations in the earlier years. However, there is evidence of that trend slowing in recent years. Further analysis of these projections indicates Christian County's population is projected to grow modestly every five years, adding about 8,126 persons by 2035. It should be noted that population would be impacted by the availability or unavailability of water supply. An ample and readily available supply of water will promote growth while the lack thereof will be a limitation. These factors must be considered when reviewing this report since many assumptions are dependent on these projections.

Several factors influence the growth of a community, some of which include accessibility, technology, education, water infrastructure, sewer facilities, and jobs. In recent years, the community has experienced the benefit of the US Highway 68 four-lane project among others, which has increased the areas access to larger Kentucky cities such as Paducah and Bowling Green plus improved access to Interstates 24 and 65. High speed internet and wireless technology is becoming more readily available to the communities, creating greater and easier contact to the rest of the world. The local school system is strong and provides a quality education.

The Christian County Water district has experienced strong growth in its number of customers over the past twenty years. This is due to an aggressive expansion program, and also to the renewed popularity of rural living. The change in number of customers and water sales for the period from 1995 to 2013 is shown in Table 3.

Table 3
Water Customer and Sales History

	1995	2000	2005	2010	2011	2012	2013	2014	2015
No. of Meters	3,137	4,258	5,034	5,622	5,745	5,759	5,773	5,871	5,934
% Change		+36%	+18%	+12%	+2%	+0.2%	+0.2%	+1.7%	+1.1%
Total Water Sales (MG)	190	262	354	386	364	379	349	389	380
% Change		+38%	+35%	+9%	-6%	+4%	-8%	+11.5%	-2.3%

3.0 EXISTING FACILITIES

3.1 History and Assets

The Christian County Water District (CCWD) was formed by Christian County Fiscal Court order in 1967 to supply potable water to residents of rural areas of Christian County. The District is comprised of approximately 570 miles of water line and several water storage tanks and booster pumping stations. The existing distribution system consists of 10", 8", 6", 4", 3" and 2" PVC lines. The general service area is depicted in Exhibit 1, which illustrates the overall layout of the system, and shows the proposed Phase VIII upgrades and replacements.

The CCWD has twelve water storage structures with a combined capacity of 1,850,000 gallons, and thirteen booster pumping stations. The high number of tanks and pump stations is required in part because of the large geographical area and varying terrain. Another factor that creates the need for many tanks and pump stations is the manner in which rural water systems typically develop over time. Each major system extension is usually supported by a tank and pump because the previous extension did not allow sufficient capacity for expansion. This is the case with Christian County, as with most other rural systems. As the systems approach build-out, it is usually beneficial to perform a system-wide hydraulic study to assess the possibility of interconnecting adjacent pressure zones to eliminate tanks and/or pump stations.

3.2 Regulatory Compliance

According to the Division of Water's remarks within the Clearinghouse Comments, the Christian County water system is currently in compliance with appropriate regulatory agencies. No other remarks were given to suggest that the water system was in or near a noncompliance status. The comments of the Division of Water and other agencies are included in Appendix A.

3.3 Existing Financial Charges and Status

3.3.1 Current Rate Schedule

5/8" Meter				
First	0	Gallons @	\$ 16.00	Minimum (Flat Rate)
Over	0	Gallons @	\$ 6.49	per 1,000 Gallons
1" Meter				
First	5,000	Gallons @	\$ 48.45	Minimum
Over	5,000	Gallons @	\$ 6.49	per 1,000 Gallons
1½" Meter				
First	10,000	Gallons @	\$ 80.90	Minimum
Over	10,000	Gallons @	\$ 6.49	per 1,000 Gallons
2" Meter				
First	50,000	Gallons @	\$ 340.50	Minimum
Over	50,000	Gallons @	\$ 6.49	per 1,000 Gallons
4" Meter				
First	100,000	Gallons @	\$ 665.00	Minimum
Over	100,000	Gallons @	\$ 6.49	per 1,000 Gallons

The current rate schedule went into effect on June 5, 2010.

3.3.2 O&M Costs (FYE 12/31/15)

Item No.	Expense Item	Amount
1	Water Purchased	\$ 1,184,223
2	Depreciation	\$ 582,137
3	Salaries	\$ 572,401
4	Maintenance & Repairs	\$ 70,321
5	Insurance	\$ 177,032
6	Rental Expense	\$ 1,039
7	Electricity for Pumping	\$ 84,682
8	Professional Services	\$ 34,315
9	Office Supplies & Expense	\$ 140,908
10	Operating Materials & Supplies	\$ 51,832
11	Payroll Taxes & Fringe Benefits	\$ 195,609
12	Transportation Expenses	\$ 25,641
Total Utility Expense		\$ 3,120,140

3.3.3 Long Term Debts (FYE 12/31/15)

Date of Issue	Bond/Note Holder	Principal Balance	Payment Date	Bond Type	Amount on Deposit in Reserve
1993	KIA	\$ 85,000	2021	Water	
2004	RD	\$ 350,000	2043	Water	
2005	KRWFC	\$ 2,370,000	2029	Water	
2008	RD	\$ 1,742,000	2047	Water	
2012	KRWFC	\$ 2,755,000	2038	Water	
2013	KRWFC	\$ 1,565,000	2029	Water	
Total		\$ 8,867,000			\$ 331,319

4.0 NEED FOR PROJECT

4.1 Health and Safety

Portions of the Christian County Water District are currently strained due to growth and multiple expansion projects to serve unserved areas. For many utilities, this type of strain limits the utility's ability to deliver drinking water to all its customers at proper pressure and quantity as set forth by the Kentucky Division of Water (KDOW). The Ten State Standards require a minimum working pressure of 35 psi. Similarly, the District constantly battles line breaks of older pipelines as well as water loss within the system. Due to the vast area served, the Christian County Water District has methodically broken its system into mini zones to better monitor and locate leaks as they arise. Unfortunately, the attempts to solve the water loss problems also creates pressure problems as more flow is forced into fewer pipelines rather than multiple loops. Thus, the District constantly has to balance its effort to minimize water loss with its requirement to deliver proper pressure and flow.

4.2 System O&M

The primary reason for the District's proposed project is to reduce interruptions of service from older line breaks and improve its ability to supply stable pressures above the Ten States Standard threshold. The water system has experienced the majority of its growth in some of the original constructed areas of the water system. During pipeline breaks on the primary distribution lines, the secondary feeder lines are incapable of providing adequate flows resulting in unacceptable pressures. Also, this problem has shown not only to be a nuisance to the maintenance crews in non-ideal conditions but also very costly to the District's finances due to material needs, overtime pay, and equipment costs.

4.3 Growth

As mentioned earlier, the population of Christian County should grow by nearly 11% over the next 25 years based upon reliable census records and expected growth. The proposed project is necessary to provide continued and reliable water service to all its nearly 5,950 customers. The new infrastructure will be a first step to insure the District's ability to properly serve the existing customer base plus future growth in the area.

5.0 ALTERNATIVES CONSIDERED

A resolution to the problems faced by the Christian County Water District is a relatively simple project with two alternatives.

5.1 Alternative 1

The first obvious alternative is to do nothing or a smaller variation of the project. However, the District would continue their current endurance of operation, maintenance and water flow problems. Therefore, the 'do nothing' alternative is not a viable option as it would only prolong the inevitable.

5.2 *Alternative 2*

The second alternative is one that offers several advantages and alleviates the growing pains to some of the primary transmission lines in north Christian. The alternative replaces system-plaguing pipeline sections known for leaks, and the project upgrades this transmission line with larger diameter piping to better deliver sufficient quantity to the northern reaches of the county. The overall project adheres with the Commonwealth's drive to provide a reliable and potable water source to all families by the year 2020.

5.2.1 *Description*

The project involves construction of nearly 37 miles of new waterline upgrade and replacement along KY Highway 109, US Highway 41, KY Highway 1349, KY Highway 398, KY Highway 800, Consolation Loop and Mt. Carmel-Hawkins Road. Both PVC and ductile iron piping will be considered for the installations. These lines are being built to improve the hydraulic performance of the existing distribution system plus provide new service to a small unserved area of the county. Some of the lower pressure areas will be improved by the up-sizing and reconnection of branching lines.

The alternative is illustrated in Exhibit 1.

5.2.2 *Environmental Impacts and Land Requirements*

The alternative has little to no impact upon the environment and land resources because the majority of construction are replacements/upgrades that will be done within existing easements or adjacent to current District properties and highway right-of-ways. As mentioned earlier, the project will affect four main land resources during construction: residential, agriculture, grazing and transportation. The general construction effect to the resources is the disturbances associated with building the facilities. No other effect to the resources is expected after construction of the facilities is complete.

5.2.3 *Construction Problems*

There are no severe construction problems foreseen for the project. The Christian County service area has varying soil conditions ranging from near ideal in some of the southern parts of the county, to sporadic instances of rock outcrops in the north. The entire pipeline route is very accessible from the road right-of-ways, and there is little evidence of a high water table. Mobilization may be a minimal issue since the work areas are somewhat spread out along multiple roadways. Also, portions of the waterline will require stream crossings, but none of which should be unmanageable or exceptionally costly.

5.2.4 *Cost Estimates*

The Christian County Water District's Phase VIII Expansion project is estimated to have a total cost of \$3,500,000. The project cost consists of construction, non-construction and contingency costs, which are approximately \$2,750,000, \$450,000 and \$300,000 respectively. The project is anticipated to be funded in part by a \$1,000,000

CDBG grant plus \$700,000 grant and \$1,800,000 loan, both from USDA Rural Development.

6.0 PROPOSED PROJECT

6.1 Project Design

6.1.1 *Water Supply*

For the affected portions of the water system in this project, the District will purchase its potable water from the City of Hopkinsville (HWEA). The Hopkinsville water treatment plant has adequate water available to serve the project. With HWEA's recent water system upgrades and raw water line project to Lake Barkley, sufficient capacity exists to serve the Christian County project.

6.1.2 *Storage*

The proposed project will not include any additions to or modifications of the District's water storage facilities. Adequate storage volume exists at their twelve water storage tank sites. Each of the four proposed waterlines are in their own respective pressure zone area. The Madisonville Road waterline upgrade will continue to be fed by the 200,000 gallon elevated water tank along US Highway 41, just south of Crofton. The Dawson Springs Road area waterlines will continue to be fed by the 200,000 gallon elevated water tank along KY Highway 109. The Quisenberry Lane waterline upgrade will continue to be fed by the 75,000 gallon ground storage tank long KY Highway 91 (Princeton Road).

6.1.3 *Distribution Layout*

The waterline construction of the Christian County Water District's system upgrade project will be contained to multiple roadways totaling approximately 194,850 LF of waterline, located in both the northern and western areas of the county. The line portion of the project involves upgrading with approximately 125,500 LF of 8" treated water line and 69,350 LF of 6" treated water line. Both PVC and ductile iron piping will be considered for the upgrades and extension.

The proposed line upgrades and extension is illustrated in Exhibit 1.

6.1.4 *Regulatory Compliance*

The proposed project has been submitted to the Kentucky State Clearinghouse for their comments. The clearinghouse comments are included in Appendix A. The clearinghouse review of the proposal indicates there are no identifiable conflicts with any state or local plan, goal, or objective. Furthermore, no notices have been received and none are expected to suggest that the water system is in or near a noncompliance status.

6.1.5 Hydraulic Calculations

For preliminary planning purposes, the computer hydraulic model, KYPIPE 2000, has been used to determine the hydraulic characteristics of the Christian County Water District's various pressure zones as it presently exists. The model includes all of the existing lines from the water supply connection with Hopkinsville, plus the proposed line upgrades, replacements and extensions that comprise the Phase VIII project.

More detailed modeling will be required during the plan preparation phase to accompany the submittal to the Kentucky Division of Water. The model results will be available upon request.

6.2 Cost Estimate

The proposed itemized cost estimate of the Christian County Water District Phase VIII System Upgrade Project is shown in Table 4 and the proposed financing package is illustrated in Table 5.

Table 4
Project Cost Estimate

New Line Upgrades & Extensions					
Map Ref.	Road/Item	Length (Miles)	Number of Houses	Line Size (Inches)	Estimated Construction Cost
①	Madisonville Road Upgrade (US Hwy 41)	5.3	150	8	\$ 495,675
②	Quisenberry Lane Upgrade (KY Highway 1349)	3.7	57	6	\$ 228,100
③	Dawson Springs Road Upgrade (KY Hwy 109)	18.5	278	8	\$ 1,498,775
④	Consolation Loop & KY Highway 800	2.0	7	6	\$ 67,950
⑤	Bainbridge Road (KY Highway 398)	6.6	11	6	\$ 391,075
⑥	Mt. Carmel - Hawkins Road	0.9	5	6	\$ 64,350
	SUBTOTAL - New Line Extensions	36.9	508		\$ 2,745,925
Total Construction Cost					\$ 2,745,925
Non-Construction Costs					
Administrative Expenses					\$ 60,000
Land & Right-of-Way					\$ 5,000
Legal Costs					\$ 25,000
Environmental & Conservation Costs					\$ 25,000
Preliminary Engineering & Environmental Services					\$ 30,000
Surveys and Hydraulic Modeling					\$ 15,000
Design Engineering					\$ 140,900
Construction Phase Engineering Services					\$ 60,400
Construction Inspection					\$ 114,000
Subtotal - Non-Construction					\$ 475,300
Total Project Cost					
Contingency (+10%)					\$ 278,775
Total Estimated Project Cost					\$ 3,500,000

Table 5
Proposed Funding Package

Rural Development Grant	\$ 700,000
Rural Development Loan	\$ 1,800,000
CDBG Grant	\$ 1,000,000
FUNDING SOURCES TOTAL	\$ 3,500,000

6.3 Annual Operating Budget

The proposed annual operating budget for the Christian County Water District Phase VIII System Upgrade Project is shown in Table 6.

Table 6
Proposed Operating Budget

Operating Income	Existing ⁽¹⁾	Extension Only	Future
Water Sales	\$3,021,959.00	\$2,527.20 ⁽³⁾	\$3,325,978.00 ⁽⁹⁾
Other Charges	\$104,787.00	\$0.00	\$104,787.00
Total Operating Income	\$3,126,746.00	\$2,527.20	\$3,430,765.00
Operating and Maintenance Expense			
Purchased Water	\$1,041,561.00	\$600.00 ⁽³⁾	\$1,042,161.00 ⁽⁵⁾
Payroll Expense	\$681,676.00	\$20,450.00 ⁽⁴⁾	\$702,126.00
Maintenance & Repairs	\$72,086.00	\$2,160.00 ⁽⁴⁾	\$74,246.00
Professional Services	\$33,296.00	\$1,000.00 ⁽⁴⁾	\$34,296.00
Utilities & Telephone	\$68,816.00	\$2,060.00 ⁽⁴⁾	\$70,876.00
Operating Materials & Supplies	\$43,819.00	\$1,310.00 ⁽⁴⁾	\$45,129.00
Office Supplies & Expenses	\$129,214.00	\$3,880.00 ⁽⁴⁾	\$133,094.00
Insurance	\$178,867.00	\$5,370.00 ⁽⁴⁾	\$184,237.00
Travel	\$42,718.00	\$1,280.00 ⁽⁴⁾	\$43,998.00
Rental Expense	\$6,438.00	\$190.00 ⁽⁴⁾	\$6,628.00
Total Operating Expenses	\$2,298,491.00	\$38,300.00	\$2,336,791.00
Net Operating Income	\$828,255.00	(\$35,772.80)	\$1,093,974.00
Non-Operating Income (Expense)			
Interest Income	\$26,496.00	\$0.00	\$26,496.00
RUS Interest (Bonds pre-2014)	(\$100,941.00)	\$0.00	(\$98,381.00) ⁽⁷⁾
RUS Principal (Bonds pre-2014)	(\$27,000.00)	\$0.00	(\$29,500.00) ⁽⁷⁾
RUS Interest (2017 Issue)	\$0.00	(\$58,500.00) ⁽⁶⁾	(\$58,500.00) ⁽⁶⁾
RUS Principal (2017 Issue)	\$0.00	(\$24,700.00) ⁽⁶⁾	(\$24,700.00) ⁽⁶⁾
Non-RUS Interest	(\$312,642.00)	\$0.00	(\$254,208.00)
Non-RUS Principal	(\$220,500.00)	\$0.00	(\$360,000.00)
Total Non-Operating Income & Debt	(\$634,587.00)	(\$83,200.00)	(\$798,793.00)
Net for Coverage & Depreciation	\$193,668.00	(\$118,972.80)	\$295,181.00
10% Debt Service Coverage	(\$66,108.00)	(\$8,320.00)	(\$82,529.00)
Subtotal	\$127,560.00	(\$127,292.80)	\$212,652.00
Short Lived Assets ⁽²⁾	(\$216,000.00)	\$0.00	(\$216,000.00)
Net for Depreciation	(\$88,440.00) ⁽⁸⁾	(\$127,292.80)	(\$3,348.00)

Notes:

1. Based on the December 31, 2013 Audit & PSC Report
2. CCWD currently deposits, on most months, \$18,000 into the Short Lived Asset fund. No increase proposed.
3. Based on 4 new customers at 5,000 per month avg usage with new CCWD's 5/8" Meter Rates & avg HWEA rate \$2.48/1k gal
4. Based on 3% nominal increase due to anticipated annual cost increases.
5. Reflects 2013 total purchase (420,217,000 gallons) @ current HWEA Rate + New usage of proposed customers.
6. Estimated Project Debt Service: Based on a **\$1,800,000 RUS loan** at 3.25% and 38 payments
7. Debt Service per Amortization Schedules. 2015 Figures used for Future.
8. The 2013 Depreciation Expense was **\$570,434** per the 2013 Audit
9. Approximate 10% revenue increase (to the 2013 figures) required to provide desired Net for Depreciation

Based on the projections and assumptions outlined above, the commitment of a \$750,000 Rural Development Grant and added revenues from the increased water rates are expected to produce a more desired Net for Depreciation. Without securing the referenced Rural Development grant, it is estimated that an additional 1.14% increase in water sales revenue would be required to offset the increase in debt service and maintain the same equivalent Net for Depreciation.

Table 7 illustrates the project's rate schedule with the requested USDA Grant, and Table 8 shows the necessary rate schedule if the project is undertaken without any grant funds and funded entirely with the USDA loan.

**Table 7
Proposed Rate Schedule (with USDA Grant)**

5/8" Meter				
First	0	Gallons @	\$ 19.95	Minimum
Over	0	Gallons @	\$ 6.54	per 1,000 Gallons
1" Meter				
First	5,000	Gallons @	\$ 52.65	Minimum
Over	5,000	Gallons @	\$ 6.54	per 1,000 Gallons
1½" Meter				
First	10,000	Gallons @	\$ 85.35	Minimum
Over	10,000	Gallons @	\$ 6.54	per 1,000 Gallons
2" Meter				
First	50,000	Gallons @	\$ 346.95	Minimum
Over	50,000	Gallons @	\$ 6.54	per 1,000 Gallons
4" Meter				
First	100,000	Gallons @	\$ 673.95	Minimum
Over	100,000	Gallons @	\$ 6.54	per 1,000 Gallons

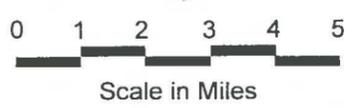
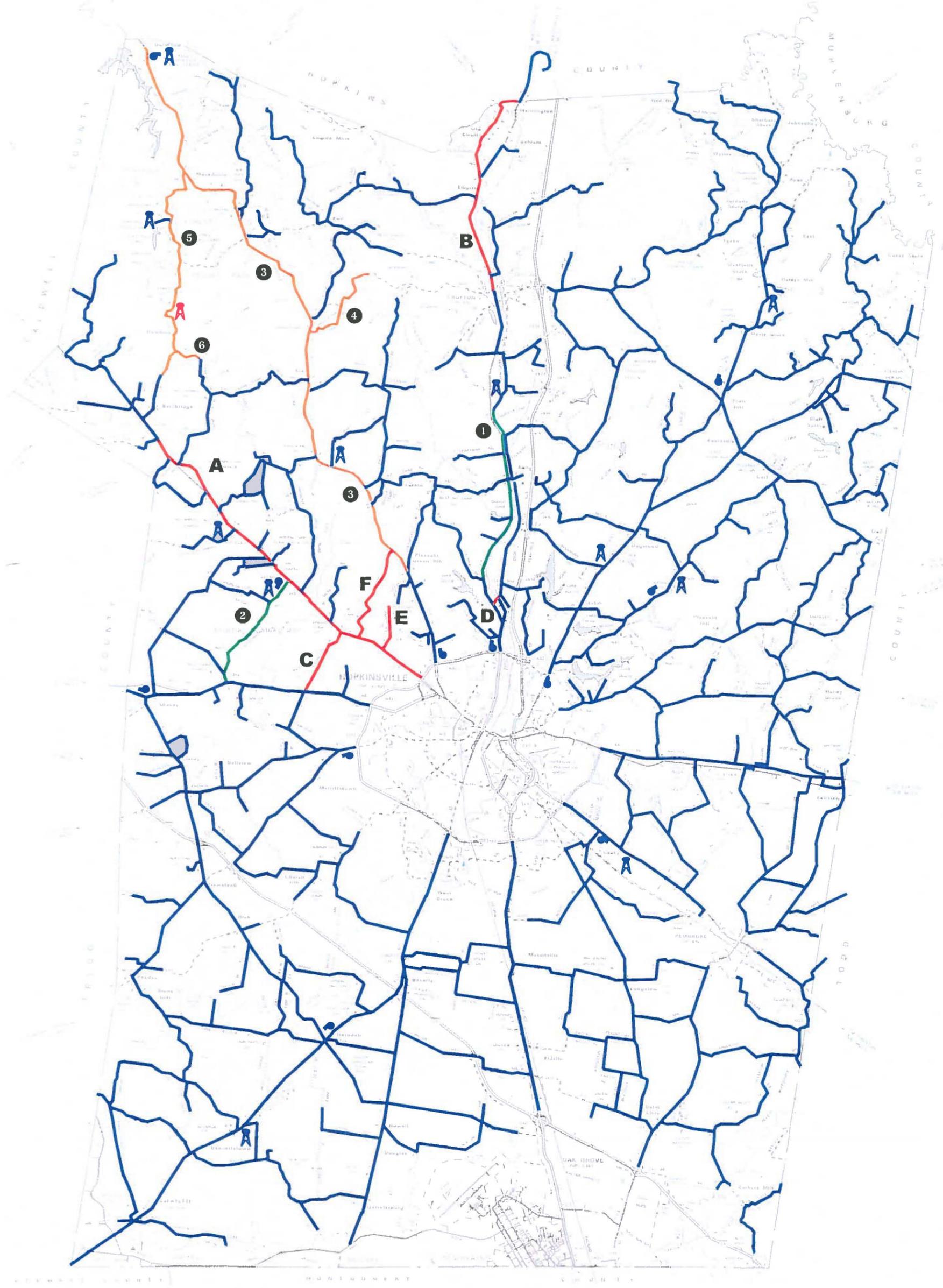
**Table 8
Proposed Rate Schedule (without USDA Grant)**

5/8" Meter				
First	0	Gallons @	\$ 20.00	Minimum
Over	0	Gallons @	\$ 6.65	per 1,000 Gallons
1" Meter				
First	5,000	Gallons @	\$ 53.25	Minimum
Over	5,000	Gallons @	\$ 6.65	per 1,000 Gallons
1½" Meter				
First	10,000	Gallons @	\$ 86.50	Minimum
Over	10,000	Gallons @	\$ 6.65	per 1,000 Gallons
2" Meter				
First	50,000	Gallons @	\$ 352.50	Minimum
Over	50,000	Gallons @	\$ 6.65	per 1,000 Gallons
4" Meter				
First	100,000	Gallons @	\$ 685.00	Minimum
Over	100,000	Gallons @	\$ 6.65	per 1,000 Gallons

7.0 RECOMMENDED SOLUTION

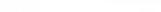
In order to address the problems and needs of the water system, the Christian County Water District should do the following:

- Construct approximately 37 miles of upgraded waterline to better serve the northern and western Christian County customer base to improve the system's hydraulics and water quality.
- Continue the application process for \$700,000 in grant and \$1,800,000 in loan from Rural Development.
- Continue the application process for a \$1,000,000 CDBG grant from the state's Department for Local Government.
- Initiate discussion among the District's Board of Directors concerning public awareness and implementation of raising water rates to fund the project if grant funds are unavailable.
- Continue pursuing different means of financing through other available agencies and methods.



Background Map: KyDOT Christian County General Highway Map—1999

LEGEND

-  Existing Water Line
-  Proposed Water Line—Phase VIII—Contract A
-  Proposed Water Line—Phase VIII—Contract B
-  Alternate Water Line—Phase VIII Upgrades
-  Proposed Water Storage Tank
-  Existing Water Storage Tank
-  Existing Pump Station



MCGHEE ENGINEERING, INC.

Guthrie, Kentucky

Christian County Water District
Phase VIII System Upgrade Project
LAYOUT MAP

By:
McGhee

Scale:
As Noted

Date:
March 2015

Page:
E-1

Appendix A

Kentucky State Clearinghouse Comments
Kentucky Heritage Council's SHPO Clearance Letters



STEVEN L. BESHEAR
GOVERNOR

DEPARTMENT FOR LOCAL GOVERNMENT
OFFICE OF THE GOVERNOR
1024 CAPITAL CENTER DRIVE, SUITE 340
FRANKFORT, KENTUCKY 40601-8204
PHONE (502) 573-2382 FAX (502) 573-2939
TOLL FREE (800) 346-5606
WWW.DLG.KY.GOV

TONY WILDER
COMMISSIONER

July 17, 2014

Mr. Chris Wilcutt
McGhee Engineering
P.O. Box 267
Guthrie, KY 42234

RE: Christian Count Water District - Phase VIII Upgrade Project
WX21047038
SAI# KY20140624-0719
CFDA# 10-760

Dear Mr. Wilcutt:

The Kentucky State Clearinghouse, which has been officially designated as the Commonwealth's Single Point of Contact (SPOC) pursuant to Presidential Executive Order 12372, has completed its evaluation of your proposal. The clearinghouse review of this proposal indicates there are no identifiable conflicts with any state or local plan, goal, or objective. Therefore, the State Clearinghouse recommends this project be approved for assistance by the cognizant federal agency.

Although the primary function of the State Single Point of Contact is to coordinate the state and local evaluation of your proposal, the Kentucky State Clearinghouse also utilizes this process to apprise the applicant of statutory and regulatory requirements or other types of information which could prove to be useful in the event the project is approved for assistance. Information of this nature, if any, concerning this particular proposal will be attached to this correspondence.

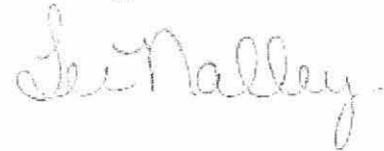
You should now continue with the application process prescribed by the appropriate funding agency. This process may include a detailed review by state agencies that have authority over specific types of projects.

This letter signifies only that the project has been processed through the State Single Point of Contact. It is neither a commitment of funds from this agency or any other state or federal agency.

The results of this review are valid for one year from the date of this letter.
Continuation or renewal applications must be submitted to the State Clearinghouse annually. An application not submitted to the funding agency, or not approved within one year after completion of this review, must be re-submitted to receive a valid intergovernmental review.

If you have any questions regarding this letter, please feel free to contact my office at 502-573-2382.

Sincerely,

A handwritten signature in cursive script that reads "Lee Nalley".

Lee Nalley
Kentucky State Clearinghouse

Attachments

The Kentucky Infrastructure Agency has made the following advisory comment pertaining to State Application Identifier Number KY201406240719

Project reviewed in the WRIS Project Profile by KIA staff.

The Natural Resources has made the following advisory comment pertaining to State Application Identifier Number KY201406240719

This review is based upon the information that was provided by the applicant through the Clearinghouse for this project. An endorsement of this project does not satisfy, or imply, the acceptance or issuance of any permits, certifications, or approvals that may be required from this agency under Kentucky Revised Statutes or Kentucky Administrative Regulations. Such endorsement means this agency has found no major concerns from the review of the proposed project as presented other than those stated as conditions or comments.

The proposed project is subject to Division of Water (DOW) jurisdiction because the following are or appear to be involved: water lines and appurtenances. Prior approval must be obtained from the DOW before construction can begin. The applicant must cite the State Application Identifier (SAI #KY201406240719) when submitting plans and specifications.

This project is consistent with the Christian County Water Management Plan. It is approved for water management planning. It is approved for water withdrawal by the Water Quantity Management Section of DOW. From the application data, DOW ascertains that a stream construction permit application will need to be submitted for the area of proposed construction located at approximate coordinates of latitude 36.95325 and longitude -87.54612; a length of approximately 603 feet along route KY109, Dawson Springs Road. If construction is not taking place in this length of line, then a stream construction permit will not be required for this project. Julia Harrod, Watershed Management Branch, (502) 564-3410, Julia.Harrod@ky.gov.

This project will replace approximately 110,000 linear feet of 6-inch and 8-inch water lines in the Christian County service area. These lines will replace ageing infrastructure and help reduce Operation and Maintenance costs for the water district. Completion of this project will provide improved water service to 347 households, 20 commercial entities, and 5 miscellaneous entities (schools, churches, etc.) as well as provide new water service to 4 households.

The Engineering Section of the Water Infrastructure Branch of the DOW does not oppose this project as presented. Plans, specifications, and hydraulic calculations (including, but not limited to, flushing velocities) shall be submitted to the Engineering Section for review. Construction shall not begin until written approval is received from the DOW. Mark Rasche, Water Infrastructure Branch, (502) 564-3410, Mark.Rasche@ky.gov.

This replacement of old infrastructure should help the system save with Operation and Maintenance costs and will benefit a number of household and commercial entities. Jason Lambert, Water Infrastructure Branch, (502) 564-3410, Jason.Lambert@ky.gov.

Best management practices shall be utilized to reduce runoff from the project into adjacent surface waters. John Brumley, Water Quality Branch, (502) 564-3410, John.Brumley@ky.gov.

No comment. Phil O'dell, Watershed Management Branch, (502) 564-3410, Phillip.O'Dell@ky.gov.

No comment. Sarah Gaddis, Compliance and Technical Assistance Branch, (502) 564-3410, Sarah.Gaddis@ky.gov.

The Division of Enforcement does not object to the project proposed by the applicant. Tim Harrod, Division of Enforcement, (502) 564-2150, Timothy.Harrod@ky.gov.

If the construction area disturbed is equal to or greater than 1 acre, the applicant will need to apply for a Kentucky Pollutant Discharge Elimination System (KPDES) storm water discharge permit.

Utility line projects that cross a stream will require a Section 404 permit from the US Army Corps of Engineers and a 401 Water Quality Certification from DOW.

The Kentucky Division of Water supports the goals of EPA's Sustainable Infrastructure Initiative. This Initiative seeks to promote sustainable practices that will help to reduce the potential gap between funding needs and spending at the local and national level. The Sustainable Infrastructure Initiative will guide our efforts in changing how Kentucky views, values, manages, and invests in its water infrastructure. This website, www.epa.gov/waterinfrastructure/, contains information that will help you ensure your facility and operations are consistent with and can benefit from the aims of the Sustainable Infrastructure Initiative.

The Housing, Building, Construction has made the following advisory comment pertaining to State Application Identifier Number KY201406240719
no comment

The Heritage Council has made the following advisory comment pertaining to State Application Identifier Number KY201406240719

The applicant must ensure compliance with the Advisory Council on Historic Preservation's Rules and Regulations for the Protection of Historic and Cultural Properties (36CRF, Part 800) pursuant to the National Historic Preservation Act of 1966, the National Environmental Policy Act of 1969, and Executive Order 11593.

Thank you for submitting your project for review. Currently, you have not provided enough information to determine this project's potential to impact sites listed or eligible for listing on the National Register of Historic Places.

Per the Section 106 regulations, it is expected that the applicant or responsible agency provide appropriate base information to our office to facilitate a review—including previously identified cultural resources that may be impacted by the proposed undertaking. You may not be aware, but effective July 8, 2013 we instituted a new Section 106 submission process to assist applicants and agencies in providing us the appropriate level of information to make our comments. Please refer to the following website <http://www.heritage.ky.gov/siteprotect/> where you will find three separate documents to assist you in submitting additional information to our office for review. Those documents include a memo outlining the standardized Section 106 submission process, a Section 106 Cover sheet that must be included with all submissions to our office, and instructions for the proper completion of the required cover sheet and associated information. Please include the SAI# when submitting additional information to the Kentucky Heritage Council.

If you have questions, please contact Yvonne Sherrick of my staff at 502.564.7005, extension 113.

The KY Dept. of Transportation has made the following advisory comment pertaining to State Application Identifier Number KY201406240719

Hall (D2), Nick: The Kentucky Department of Highways is responsible for controlling both public and private usage of right-of-way of the State road system. Any firm, individual, or governmental agency desiring access to a State road or desiring to perform any type of work (including signage) on State right-of-way must obtain a permit from the Department.

To obtain the necessary permits and/or discuss the details of this project, please contact our District Office in Madisonville at the following address/number:

Mr. Kenny Potts, TEBM for Engineering Support
Kentucky Department of Highways
1840 North Main Street
Madisonville, Kentucky 42431
Telephone (270) 824-7080
Fax (270) 824-7091

This review was based upon the information that was provided by the applicant through the Clearinghouse for this project. An endorsement of this project does not satisfy, or imply, the acceptance or issuance of any permits, certifications or approvals that may be required from this agency. Such endorsement means this agency has found no major concerns from the review of the proposed project as presented, other than those stated as conditions or comments.

The Labor Cabinet has made the following advisory comment pertaining to State Application Identifier Number KY201406240719

STATE PW RATES MAY APPLY TO PROJECTS EXCEEDING \$250,000.00. CONTACT KY LABOR CABINET FOR MORE INFORMATION 502 564 3534

The KY State Fish & Wildlife has made the following advisory comment pertaining to State Application Identifier Number KY201406240719

Based on the information provided, the Kentucky Department of Fish & Wildlife Resources has no comments concerning the proposed project. Please contact Dan Stoelb @ 502-564-7109 ex. 4453 or Daniel.Stoelb@ky.gov if you have further questions or require additional information.



STEVEN L. BESHEAR
GOVERNOR

DEPARTMENT FOR LOCAL GOVERNMENT
OFFICE OF THE GOVERNOR
1024 CAPITAL CENTER DRIVE, SUITE 340
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WWW.DLG.KY.GOV

TONY WILDER
COMMISSIONER

July 22, 2015

Ms. Ashley Johnson
Pennyrile Area Development District
300 Hammond Drive
Hopkinsville, KY 42240

RE: Christian Count Water District - Phase VIII Upgrade Project
WX21047038
SAI# KY20150702-0842
CFDA# 14.228

Dear Ms. Johnson:

The Kentucky State Clearinghouse, which has been officially designated as the Commonwealth's Single Point of Contact (SPOC) pursuant to Presidential Executive Order 12372, has completed its evaluation of your proposal. The clearinghouse review of this proposal indicates there are no identifiable conflicts with any state or local plan, goal, or objective. Therefore, the State Clearinghouse recommends this project be approved for assistance by the cognizant federal agency.

Although the primary function of the State Single Point of Contact is to coordinate the state and local evaluation of your proposal, the Kentucky State Clearinghouse also utilizes this process to apprise the applicant of statutory and regulatory requirements or other types of information which could prove to be useful in the event the project is approved for assistance. Information of this nature, if any, concerning this particular proposal will be attached to this correspondence.

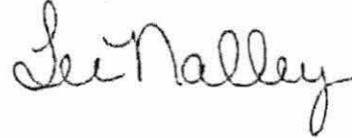
You should now continue with the application process prescribed by the appropriate funding agency. This process may include a detailed review by state agencies that have authority over specific types of projects.

This letter signifies only that the project has been processed through the State Single Point of Contact. It is neither a commitment of funds from this agency or any other state or federal agency.

The results of this review are valid for one year from the date of this letter.
Continuation or renewal applications must be submitted to the State Clearinghouse annually. An application not submitted to the funding agency, or not approved within one year after completion of this review, must be re-submitted to receive a valid intergovernmental review.

If you have any questions regarding this letter, please feel free to contact my office at 502-573-2382.

Sincerely,

A handwritten signature in black ink that reads "Lee Nalley". The signature is written in a cursive style with a large initial "L" and "N".

Lee Nalley
Kentucky State Clearinghouse

Attachments

The KY Dept. of Transportation has made the following advisory comment pertaining to State Application Identifier Number KY201507020842

Hall (D2), Nick: if any of the new lines will impact a state route, please read below

Hall (D2), Nick: The Kentucky Department of Highways is responsible for controlling both public and private usage of right-of-way of the State road system. Any firm, individual, or governmental agency desiring access to a State road or desiring to perform any type of work (including signage) on State right-of-way must obtain a permit from the Department.

To obtain the necessary permits and/or discuss the details of this project, please contact our District Office in Madisonville at the following address/number:

Mr. Kenny Potts, TEBM for Engineering Support
Kentucky Department of Highways
1340 North Main Street
Madisonville, Kentucky 42431
Telephone (270) 824-7080
Fax (270) 824-7091

This review was based upon the information that was provided by the applicant through the Clearinghouse for this project. An endorsement of this project does not satisfy, or imply, the acceptance or issuance of any permits, certifications or approvals that may be required from this agency. Such endorsement means this agency has found no major concerns from the review of the proposed project as presented, other than those stated as conditions or comments.

The Heritage Council has made the following advisory comment pertaining to State Application Identifier Number KY201507020842

Thank you for submitting your project for review. Currently, you have not provided enough information to determine this project's potential to impact sites listed or eligible for listing on the National Register of Historic Places.

Per the Section 106 regulations, it is expected that the applicant or responsible agency provide appropriate base information to our office to facilitate a review—including previously identified cultural resources that may be impacted by the proposed undertaking. You may not be aware, but effective July 8, 2013 we instituted a new Section 106 submission process to assist applicants and agencies in providing us the appropriate level of information to make our comments. Please refer to the following website <http://www.heritage.ky.gov/siteprotect/> where you will find three separate documents to assist you in submitting additional information to our office for review. Those documents include a memo outlining the standardized Section 106 submission process, a Section 106 Cover sheet that must be included with all submissions to our office, and instructions for the proper completion of the required cover sheet and associated information. Please include the SAI# when submitting additional information to the Kentucky Heritage Council.

If you have already submitted the requested additional information to our office for review, you should be receiving our comments soon.

If you have questions, please contact Nick Laracuente of my staff at 502.564.7005, extension 122.

The Pennyrile ADD has made the following advisory comment pertaining to State Application Identifier Number KY201507020842
no comments

The Housing, Building, Construction has made the following advisory comment pertaining to State Application Identifier Number KY201507020842
no comments

The Natural Resources has made the following advisory comment pertaining to State Application Identifier Number KY201507020842

Sandlick Creek is an Outstanding State Resource Water and Reference Reach. Best management practices shall be utilized to reduce runoff from the project into the Sandlick Creek watershed and other surface waters. John Brumley, Water Quality Branch, (502) 564-3410, John.Brumley@ky.gov.

This review is based upon the information that was provided by the applicant through the Clearinghouse for this project. An endorsement of this project does not satisfy, or imply, the acceptance or issuance of any permits, certifications, or approvals that may be required from this agency under Kentucky Revised Statutes or Kentucky Administrative Regulations. Such endorsement means this agency has found no major concerns from the review of the proposed project as presented other than those stated as conditions or comments.

The proposed project is subject to Division of Water (DOW) jurisdiction because the following are or appear to be involved: water lines and appurtenances and water storage tank construction. Prior approval must be obtained from the DOW before construction can begin. The applicant must cite the State Application Identifier (SAI #KY201507020842) when submitting plans and specifications.

This project is consistent with the Christian County Water Management Plan. It is approved for water management planning. It is approved for water withdrawal by the Water Quantity Management Section of DOW. The portions of this project that are proposed for construction in the floodplain will need a stream construction permit application submitted to the DOW for further review. Julia Harrod, Watershed Management Branch, (502) 564-3410, Julia.Harrod@ky.gov.

This project will replace and install approximately 207,354 linear feet of 6-inch and 8-inch water lines in the Christian County service area. These new lines will replace ageing infrastructure, extend to cover new customers, and help reduce operation and maintenance costs for the water district. This project will also replace an inadequate water tank from 52,000 gallons to 250,000 gallons. Completion of this project will provide new water service to 4 households as well as provide improved water service to 347 households.

The Engineering Section of the Water Infrastructure Branch does not oppose this project as it is presented. Plans, specifications, and hydraulic calculation (including, but not limited to, peak demand flows, flushing velocities, tank cycling times) shall be submitted to the Engineering Section for review. Construction shall not begin until written approval has been received from the DOW. Mark Rasche, Water Infrastructure Branch, (502) 564-3410, Mark.Rasche@ky.gov.

Currently the tank is 52,000 gallons with a daily turnover of 50%. The replacement tank will be 250,000 gallons. The system stated that they are intending to reconfigure the distribution system so as to place more demand on the tank which should address the turnover. System purchases from Hopkinsville (currently at 39% gallons per day) and Barkley Lake (34% gallons per day). Jason Lambert, Water Infrastructure Branch, (502) 564-3410, Jason.Lambert@ky.gov.

Please be advised that there are no permits, certifications or formal approvals needed from the Groundwater Section for this project to go forward. However, there may be activities associated with this project that require a groundwater protection plan (GPP), such as refueling and/or temporary storage of fuel and heavy equipment, or the stockpiling of fill, dredged or excavated materials. Due to these factors, we recommend that the applicant be made aware of the requirements of 401 KAR 5:037, Section 2, and the need to develop GPPs to address any activities associated with the development of this project which may have the potential to contaminate groundwater. David Jackson, Watershed Management Branch, (502) 564-3410, DavidA.Jackson@ky.gov.

No comment. Sarah Gaddis, Compliance and Technical Assistance Branch, (502) 564-3410, Sarah.Gaddis@ky.gov.

The Division of Enforcement does not object to the project proposed by the applicant. Tim Harrod, Division of Enforcement, (502) 564-2150, Timothy.Harrod@ky.gov.

If the construction area disturbed is equal to or greater than 1 acre, the applicant will need to apply for a Kentucky Pollutant Discharge Elimination System (KPDES) storm water discharge permit.

Utility line projects that cross a stream will require a Section 404 permit from the US Army Corps of Engineers and a 401 Water Quality Certification from DOW.

The Kentucky Division of Water supports the goals of EPA's Sustainable Infrastructure Initiative. This Initiative seeks to promote sustainable practices that will help to reduce the potential gap between funding needs and spending at the local and national level. The Sustainable Infrastructure Initiative will guide our efforts in changing how Kentucky views, values, manages, and invests in its water infrastructure. This website, www.epa.gov/waterinfrastructure/, contains information that will help you ensure your facility and operations are consistent with and can benefit from the aims of the Sustainable Infrastructure Initiative.

The Kentucky Infrastructure Agency has made the following advisory comment pertaining to State Application Identifier Number KY201507020842

Water Rates are inconsistent with WRIS Portal. Please contact Amy Frogue at Pennyrite ADD to confirm water rates.

This project was reviewed by KIA Staff in the WRIS Portal.

The Labor Cabinet has made the following advisory comment pertaining to State Application Identifier Number KY201507020842

STATE PREVAILING WAGE RATES MAY APPLY TO PROJECTS EXCEEDING \$250,000.00. CONTACT KY LABOR CABINET AT 502 564 3534

The KY State Fish & Wildlife has made the following advisory comment pertaining to State Application Identifier Number KY201507020842

To minimize impacts to the aquatic environment the Kentucky Dept. of Fish & Wildlife Resources recommends that erosion control measures be developed and implemented prior to construction to reduce siltation into waterways located within the project area. Such erosion control measures may include, but are not limited to silt fences, staked straw bales, brush barriers, sediment basins, and diversion ditches. Erosion control measures will need to be installed prior to construction and should be inspected and repaired regularly as needed. Please contact Dan Stoelb @ 502-564-7109 ex. 4453 or Daniel.Stoelb@ky.gov if you have further questions or require additional information.



MATTHEW G. BEVIN
GOVERNOR

**TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL**

REGINA STIVERS
DEPUTY SECRETARY

DON PARKINSON
SECRETARY

THE STATE HISTORIC PRESERVATION OFFICE

300 WASHINGTON STREET
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-7005
FAX (502) 564-5820
www.heritage.ky.gov

CRAIG A. POTTS
EXECUTIVE DIRECTOR
& STATE HISTORIC
PRESERVATION OFFICER

October 24, 2016

Chris Wilcutt, P.E.
McGhee Engineering
P.O. Box 267
Guthrie, KY 42234

Re: Christian County Water District SAI# 20140624-0719

Dear Mr. Wilcutt:

Thank you for your August 24 letter concerning the above referenced project. Based on the information provided, an archaeological survey or cultural historic survey should not be necessary for the proposed project area. We concur that the proposed undertaking should have No Effect to Historic Resources that are potentially eligible for the National Register of Historic Places.

Should the project plans change, or should additional information become available regarding cultural resources or citizens' concerns regarding impacts to cultural resources, please submit that information to our office as additional consultation may be warranted. In the event that human remains are encountered during project activities, all work should be immediately stopped in the area and the area cordoned off, and in accordance with KRS 72.020 the county coroner and local law enforcement must be contacted immediately. Upon confirmation that the human remains are not of forensic interest, the unanticipated discovery must be reported to the Kentucky Heritage Council and the Kentucky Office of State Archaeology in the Anthropology Department at the University of Kentucky.

Should you have any questions, feel free to contact Nick Laracuate of my staff at 502.564.7005, extension 122.

Sincerely,

Craig A. Potts,
Executive Director and
State Historic Preservation Officer

CP:nrl KHC # 47698

#Preservation50: Commemorating the 50th anniversary of the National Historic Preservation Act
and the Kentucky Heritage Council 1966-2016



STEVEN L. BESHEAR
GOVERNOR

TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL

BOB STEWART
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CRAIG A. POTTS
EXECUTIVE DIRECTOR AND
STATE HISTORIC PRESERVATION OFFICER

March 30, 2015

Mr. Chris Wilcutt
McGhee Engineering, Inc.
102 Ewing Street, P.O. Box 267
Cynthiana, KY 42234

Re: Christian County Water District, Phase VIII System Upgrade Project, SAI#KY20140624-0719

Dear Mr. Wilcutt:

Thank you for your correspondence concerning the above referenced project. Our review indicates that the proposed project will not impact any National Register properties or sites. In accordance with 36 CFR Part 800.4(d) of the Advisory Council's revised regulations our finding is that there will be **No Historic Properties Affected** within the undertaking's area of potential impact.

However, should the project plans change, or should additional information become available regarding cultural resources or citizens' concerns regarding impacts to cultural resources, please submit that information to our office as additional consultation may be warranted. In the event that human remains are encountered during project activities, all work should be immediately stopped in the area and the area cordoned off, and in accordance with KRS 72.020 the county coroner and local law enforcement must be contacted immediately. Upon confirmation that the human remains are not of historic interest, the unanticipated discovery must be reported to the Kentucky Heritage Council and the Kentucky Office of State Archaeology in the Anthropology Department at the University of Kentucky.

Should you have any questions, feel free to contact Yvonne Sherrick of my staff at 564-7005, ext. 113.

Sincerely,

Craig A. Potts
Executive Director and
State Historic Preservation Officer

HP:43589



MATTHEW G. BEVIN
GOVERNOR

**TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL**

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CRAIG A. POTTS
EXECUTIVE DIRECTOR
& STATE HISTORIC
PRESERVATION OFFICER

May 18, 2016

Ashley Johnson
Community Development / Public Administration Specialist
Pennyrile Area Development District
300 Hammond Drive
Hopkinsville, KY 42240

Re: Rehabilitation of 144,500LF of Water Lines in North Western Christian County

Dear Ms. Johnson:

Thank you for the additional information concerning the above referenced project. Based on the information provided and our review of the application, an archaeological or cultural historic survey should not be necessary for the proposed project area unless the project impacts areas that have not been previously disturbed. Specifically, if new routes are chosen that diverge from the existing lines to be replaced and archaeological survey may be needed.

Should the project plans change, or should additional information become available regarding cultural resources or citizens' concerns regarding impacts to cultural resources, please submit that information to our office as additional consultation may be warranted.

In the event that human remains are encountered during project activities, all work should be immediately stopped in the area and the area cordoned off, and in accordance with KRS 72.020 the county coroner and local law enforcement must be contacted immediately. Upon confirmation that the human remains are not of forensic interest, the unanticipated discovery must be reported to the Kentucky Heritage Council and the Kentucky Office of State Archaeology in the Anthropology Department at the University of Kentucky.

Should you have any questions, feel free to contact Nick Laracuate of my staff at 502.564.7005, extension 122.

Sincerely,

Craig A. Potts,
Executive Director and
State Historic Preservation Officer

CP:nrl KHC # 46486

#Preservation50: Commemorating the 50th anniversary of the National Historic Preservation Act
and the Kentucky Heritage Council 1966-2016

FINAL ENGINEERING REPORT

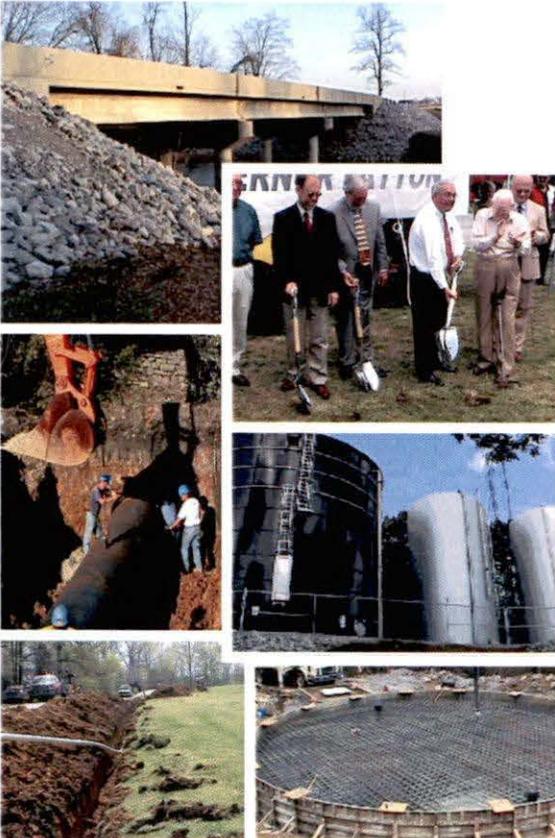
CHRISTIAN COUNTY WATER DISTRICT PHASE VIII SYSTEM UPGRADE PROJECT

May 2016

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MAY 18 2017

Public Service
Commission



McGHEE ENGINEERING, INC.

202 South Ewing Street
Guthrie, Kentucky 42234

(270) 483-9985
www.mcgheeengineering.com

Final Engineering Report

prepared for the

**Christian
County
Water
District**



Phase VIII System Upgrade Project

Ashbel Brunson, III
Chairman

David Johnson
Treasurer

Steve Hunt
Secretary

Ronald Adams
Commissioner

Barbara Morris
Commissioner

James Owen
Manager

prepared by

McGhee Engineering, Inc.

202 Ewing Street, P. O. Box 267
Guthrie, Kentucky 42234
(270) 483-9985



Chris Wilcutt
5/5/17

May 2017

Final Engineering Report
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Christian County Water District's Phase VIII System Upgrade Project

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Overall Project Layout with Christian County Highway Map

No.
1

Appendix

A Bid Tabulation

1.0 INTRODUCTION

The Christian County Water District (CCWD) was formed by Christian County Fiscal Court order November 13, 1967 to supply potable water to rural residents of Christian County, Kentucky. The District is controlled by a Board of Directors, which consists of a Chairman and four Directors. The District is regulated by the Kentucky Public Service Commission.

The Christian County Water District (CCWD) is comprised of approximately 570 miles of water line, 12 water storage tanks with a combined capacity of 1,850,000 gallons, and 13 booster pumping stations. CCWD serves approximately 5,934 customers, which are almost entirely rural residences. The CCWD purchases nearly all of its treated water from the City of Hopkinsville (HWEA), but also purchases portions from the Lake Barkley Water District and the Logan Todd Regional Water Commission. Average daily purchases is currently just over 1,303,200 gpd.

The CCWD is a large district both in terms of customers and geographic area, covering over 700 square miles. The CCWD is one of only three public water systems in Christian County. The other two are the City of Oak Grove and the Hopkinsville Water Environment Authority, which serves Hopkinsville, Crofton and Pembroke. The CCWD service area includes all of Christian County, excluding the incorporated areas of Hopkinsville, Crofton, Pembroke and Oak Grove, and the property occupied by Ft. Campbell. With the exception of a few isolated locations in the north and southwest parts of the county, most of the roads within the county have water service, with only short extensions needed from time to time to accommodate new development.

The main problems that have plagued the District were its long-term supply of treated water, low pressure in certain areas of the system, extending water service to unserved areas, and installing lines for improved hydraulic performance. HWEA's recent capacity improvements plus recent USDA extension projects have resolved the majority of these problems. However, there are many original areas that are now strained due to the dramatic growth of the District. To initiate a solution to alleviating these "growing pains", the Christian County Water District has requested funding assistance to undertake their Phase VIII System Upgrade Project.

The proposed project involves construction of nearly 37 miles of water line upgrade and replacement along seven primary transmission routes. The project is expected to be financed with a \$1,000,000 Community Block Development Grant and \$2,500,000 from USDA Rural Development via a loan and grant. The total cost of the proposed project is estimated to be \$3,500,000.

2.0 PROJECT PLANNING AREA

2.1 Location

The waterline construction of the Christian County Water District's project will be contained to seven highway corridors. Nearly 37 miles of new waterline upgrade and replacement have been identified and proposed along KY Highway 109, US Highway 41, KY Highway 1349, KY Highway 398, KY Highway 800, Consolation Loop and Mt. Carmel-Hawkins

Road. Pipe sizes will range from 6" to 8" piping, and both PVC and ductile iron piping will be considered for the upgrades and extension. The roads to be served, including project alternates, are shown in the following table.

Table 1
Project Road List

Map Ref.	Primary Roadways	Length	Number of	Line Size
		(Miles)	Houses	(Inches)
①	Madisonville Road South (US Highway 41)	5.2	150	8
②	Quisenberry Lane (KY Highway 1349)	3.6	57	6
③	Dawson Springs Road (KY Highway 109)	18.4	278	8
④	Consolation Loop & KY Highway 800	2.0	7	6
⑤	Bainbridge Road (KY Highway 398)	6.5	11	6
⑥	Mt. Carmel-Hawkins Road	0.8	5	6
	SUBTOTAL - New Line Extensions	36.5	508	
	Alternate Roadways	Length		Line Size
		(Miles)		(Inches)
A	Princeton Road (KY Highway 91)	10.1		6
B	Madisonville Road North (US Highway 41)	5.4		6
C	Everett Lane	2.8		6
D	Green Hills Subdivision	0.3		6
E	Happy Hollow Road	3.0		6
F	Witty Lane	3.8		6
	SUBTOTAL - Alternate Line Extensions	98.5		

The proposed project is illustrated on Exhibit 1.

2.2 Land Use and Environmental Resources Present

As stated earlier, the line portion of the project is contained entirely to seven different road corridors. The line work is proposed to be constructed within utility easements previously acquired or to be acquired by the Christian County Water District. The project will affect four main resources during construction: residential, agriculture, grazing and transportation. The general construction effect to the resources is the disturbances associated with building the facilities. No long-term impact is expected to any environmental resource.

An archeological investigation is not anticipated for the affected line routes due to the fact these areas have been previously disturbed. Furthermore, a declaration of "no adverse affect" has been issued for the project by the State Historical Preservation Officer.

2.3 Growth Areas and Population Trends

The population history of Christian County is an important element in determining the growth patterns over the last 60 years. Analysis of the population history will assist in forming a reliable estimate of the future water needs of the project area.

According to historical records, Christian County's population was 42,359 in 1950, which represents its lowest census year during the last 60 years. Table 2 provides the population history and projections of Christian County based on data obtained from the U.S. Bureau of the Census.

**Table 2
Population History and Projections**

YEAR	Historical								Projections				
	1 9 5 0	1 9 6 0	1 9 7 0	1 9 8 0	1 9 9 0	2 0 0 0	2 0 1 0	2 0 2 5	2 0 2 0	2 0 3 5	2 0 3 0	2 0 5 5	
CHRISTIAN													
Hopkinsville	12,526	19,465	20,415	27,318	30,137	30,089	31,577	32,434	33,236	33,979	34,591	35,047	
Oak Grove	-	-	-	1,995	2,843	7,064	7,489	7,671	7,897	8,079	8,215	8,306	
Pembroke	532	517	634	732	794	797	869	890	916	937	953	964	
Crofton	500	892	631	823	713	838	749	769	788	806	821	831	
LaFayette	246	196	158	186	105	193	165	169	174	178	181	183	
Rural Areas	28,555	35,834	34,386	35,824	34,349	33,284	33,106	34,029	34,829	35,601	36,254	36,750	
Christina Co.	42,359	56,904	56,224	66,878	68,941	72,265	73,955	75,962	77,840	79,580	81,015	82,081	
% Change		34.3%	-1.2%	18.9%	3.1%	4.8%	2.3%	2.7%	2.5%	2.2%	1.8%	1.3%	
Notes to Table 1:	1. Shaded areas have been calculated based on census and projection data. 2. Oak Grove was incorporated in 1974.												
Sources to Table 1:	1. Historical & Projections provided by the KY State Data Center and Census Bureau University of Louisville, State Data Center (http://cbpa.louisville.edu/ksdc/)												

Analyzing Table 2 from 1950 to 2010 shows that Christian County grew rather sporadically through 1980, then at a fairly steady pace to the present. Much of the cities' gains came at the expense of the rural populations in the earlier years. However, there is evidence of that trend slowing in recent years. Further analysis of these projections indicates Christian County's population is projected to grow modestly every five years, adding about 8,126 persons by 2035. It should be noted that population would be impacted by the availability or unavailability of water supply. An ample and readily available supply of water will promote growth while the lack thereof will be a limitation. These factors must be considered when reviewing this report since many assumptions are dependent on these projections.

Several factors influence the growth of a community, some of which include accessibility, technology, education, water infrastructure, sewer facilities, and jobs. In recent years, the community has experienced the benefit of the US Highway 68 four-lane project among others, which has increased the areas access to larger Kentucky cities such as Paducah and Bowling Green plus improved access to Interstates 24 and 65. High speed internet and wireless technology is becoming more readily available to the communities, creating greater and easier contact to the rest of the world. The local school system is strong and provides a quality education.

The Christian County Water district has experienced strong growth in its number of customers over the past twenty years. This is due to an aggressive expansion program, and also to the renewed popularity of rural living. The change in number of customers and water sales for the period from 1995 to 2013 is shown in Table 3.

Table 3
Water Customer and Sales History

	1995	2000	2005	2010	2011	2012	2013	2014	2015
No. of Meters	3,137	4,258	5,034	5,622	5,745	5,759	5,773	5,871	5,934
% Change		+36%	+18%	+12%	+2%	+0.2%	+0.2%	+1.7%	+1.1%
Total Water Sales (MG)	190	262	354	386	364	379	349	389	380
% Change		+38%	+35%	+9%	-6%	+4%	-8%	+11.5%	-2.3%

3.0 EXISTING FACILITIES

3.1 History and Assets

The Christian County Water District (CCWD) was formed by Christian County Fiscal Court order in 1967 to supply potable water to residents of rural areas of Christian County. The District is comprised of approximately 570 miles of water line and several water storage tanks and booster pumping stations. The existing distribution system consists of 10", 8", 6", 4", 3" and 2" PVC lines. The general service area is depicted in Exhibit 1, which illustrates the overall layout of the system, and shows the proposed Phase VIII upgrades and replacements.

The CCWD has twelve water storage structures with a combined capacity of 1,850,000 gallons, and thirteen booster pumping stations. The high number of tanks and pump stations is required in part because of the large geographical area and varying terrain. Another factor that creates the need for many tanks and pump stations is the manner in which rural water systems typically develop over time. Each major system extension is usually supported by a tank and pump because the previous extension did not allow sufficient capacity for expansion. This is the case with Christian County, as with most other rural systems. As the systems approach build-out, it is usually beneficial to perform a system-wide hydraulic study to assess the possibility of interconnecting adjacent pressure zones to eliminate tanks and/or pump stations.

3.2 Regulatory Compliance

According to the Division of Water's remarks within the Clearinghouse Comments, the Christian County water system is currently in compliance with appropriate regulatory agencies. No other remarks were given to suggest that the water system was in or near a noncompliance status.

3.3 Existing Financial Charges and Status

3.3.1 Current Rate Schedule

5/8" Meter				
First	0	Gallons @	\$ 16.00	Minimum (Flat Rate)
Over	0	Gallons @	\$ 6.49	per 1,000 Gallons
1" Meter				
First	5,000	Gallons @	\$ 48.45	Minimum
Over	5,000	Gallons @	\$ 6.49	per 1,000 Gallons
1½" Meter				
First	10,000	Gallons @	\$ 80.90	Minimum
Over	10,000	Gallons @	\$ 6.49	per 1,000 Gallons
2" Meter				
First	50,000	Gallons @	\$ 340.50	Minimum
Over	50,000	Gallons @	\$ 6.49	per 1,000 Gallons
4" Meter				
First	100,000	Gallons @	\$ 665.00	Minimum
Over	100,000	Gallons @	\$ 6.49	per 1,000 Gallons

The current rate schedule went into effect on June 5, 2010.

3.3.2 O&M Costs (FYE 12/31/15)

Item No.	Expense Item	Amount
1	Water Purchased	\$ 1,184,223
2	Depreciation	\$ 582,137
3	Salaries	\$ 572,401
4	Maintenance & Repairs	\$ 70,321
5	Insurance	\$ 177,032
6	Rental Expense	\$ 1,039
7	Electricity for Pumping	\$ 84,682
8	Professional Services	\$ 34,315
9	Office Supplies & Expense	\$ 140,908
10	Operating Materials & Supplies	\$ 51,832
11	Payroll Taxes & Fringe Benefits	\$ 195,609
12	Transportation Expenses	\$ 25,641
Total Utility Expense		\$ 3,120,140

3.3.3 Long Term Debts (FYE 12/31/15)

Date of Issue	Bond/Note Holder	Principal Balance	Payment Date	Bond Type	Amount on Deposit in Reserve
1993	KIA	\$ 85,000	2021	Water	
2004	RD	\$ 350,000	2043	Water	
2005	KRWFC	\$ 2,370,000	2029	Water	
2008	RD	\$ 1,742,000	2047	Water	
2012	KRWFC	\$ 2,755,000	2038	Water	
2013	KRWFC	\$ 1,565,000	2029	Water	
Total		\$ 8,867,000			\$ 331,319

4.0 NEED FOR PROJECT

4.1 Health and Safety

Portions of the Christian County Water District are currently strained due to growth and multiple expansion projects to serve unserved areas. For many utilities, this type of strain limits the utility's ability to deliver drinking water to all its customers at proper pressure and quantity as set forth by the Kentucky Division of Water (KDOW). The Ten State Standards require a minimum working pressure of 35 psi. Similarly, the District constantly battles line breaks of older pipelines as well as water loss within the system. Due to the vast area served, the Christian County Water District has methodically broken its system into mini zones to better monitor and locate leaks as they arise. Unfortunately, the attempts to solve the water loss problems also creates pressure problems as more flow is forced into fewer pipelines rather than multiple loops. Thus, the District constantly has to balance its effort to minimize water loss with its requirement to deliver proper pressure and flow.

4.2 System O&M

The primary reason for the District's proposed project is to reduce interruptions of service from older line breaks and improve its ability to supply stable pressures above the Ten States Standard threshold. The water system has experienced the majority of its growth in some of the original constructed areas of the water system. During pipeline breaks on the primary distribution lines, the secondary feeder lines are incapable of providing adequate flows resulting in unacceptable pressures. Also, this problem has shown not only to be a nuisance to the maintenance crews in non-ideal conditions but also very costly to the District's finances due to material needs, overtime pay, and equipment costs.

4.3 Growth

As mentioned earlier, the population of Christian County should grow by nearly 11% over the next 25 years based upon reliable census records and expected growth. The proposed project is necessary to provide continued and reliable water service to all its nearly 5,950 customers. The new infrastructure will be a first step to insure the District's ability to properly serve the existing customer base plus future growth in the area.

5.0 ALTERNATIVES CONSIDERED

A resolution to the problems faced by the Christian County Water District is a relatively simple project with two alternatives.

5.1 Alternative 1

The first obvious alternative is to do nothing or a smaller variation of the project. However, the District would continue their current endurance of operation, maintenance and water flow problems. Therefore, the 'do nothing' alternative is not a viable option as it would only prolong the inevitable.

5.2 Alternative 2

The second alternative is one that offers several advantages and alleviates the growing pains to some of the primary transmission lines in north Christian. The alternative replaces system-plaguing pipeline sections known for leaks, and the project upgrades this transmission line with larger diameter piping to better deliver sufficient quantity to the northern reaches of the county. The overall project adheres with the Commonwealth's drive to provide a reliable and potable water source to all families by the year 2020.

5.2.1 *Description*

The project involves construction of nearly 37 miles of new waterline upgrade and replacement along KY Highway 109, US Highway 41, KY Highway 1349, KY Highway 398, KY Highway 800, Consolation Loop and Mt. Carmel-Hawkins Road. Both PVC and ductile iron piping will be considered for the installations. These lines are being built to improve the hydraulic performance of the existing distribution system plus provide new service to a small unserved area of the county. Some of the lower pressure areas will be improved by the up-sizing and reconnection of branching lines.

The alternative is illustrated in Exhibit 1.

5.2.2 *Environmental Impacts and Land Requirements*

The alternative has little to no impact upon the environment and land resources because the majority of construction are replacements/upgrades that will be done within existing easements or adjacent to current District properties and highway right-of-ways. As mentioned earlier, the project will affect four main land resources during construction: residential, agriculture, grazing and transportation. The general construction effect to the resources is the disturbances associated with building the facilities. No other effect to the resources is expected after construction of the facilities is complete.

5.2.3 *Construction Problems*

There are no severe construction problems foreseen for the project. The Christian County service area has varying soil conditions ranging from near ideal in some of the southern parts of the county, to sporadic instances of rock outcrops in the north. The entire pipeline route is very accessible from the road right-of-ways, and there is little evidence of a high water table. Mobilization may be a minimal issue since the work areas are somewhat spread out along multiple roadways. Also, portions of the waterline will require stream crossings, but none of which should be unmanageable or exceptionally costly.

5.2.4 *Cost Estimates*

The Christian County Water District's Phase VIII Expansion project is estimated to have a total cost of \$3,500,000. The project cost consists of construction, non-construction and contingency costs, which are approximately \$2,750,000, \$450,000 and \$300,000 respectively. The project is anticipated to be funded in part by a \$1,000,000

CDBG grant plus \$700,000 grant and \$1,800,000 loan, both from USDA Rural Development.

6.0 PROPOSED PROJECT

6.1 Project Design

6.1.1 *Water Supply*

For the affected portions of the water system in this project, the District will purchase its potable water from the City of Hopkinsville (HWEA). The Hopkinsville water treatment plant has adequate water available to serve the project. With HWEA's recent water system upgrades and raw water line project to Lake Barkley, sufficient capacity exists to serve the Christian County project.

6.1.2 *Storage*

The proposed project will not include any additions to or modifications of the District's water storage facilities. Adequate storage volume exists at their twelve water storage tank sites. Each of the four proposed waterlines are in their own respective pressure zone area. The Madisonville Road waterline upgrade will continue to be fed by the 200,000 gallon elevated water tank along US Highway 41, just south of Crofton. The Dawson Springs Road area waterlines will continue to be fed by the 200,000 gallon elevated water tank along KY Highway 109. The Quisenberry Lane waterline upgrade will continue to be fed by the 75,000 gallon ground storage tank long KY Highway 91 (Princeton Road).

6.1.3 *Distribution Layout*

The waterline construction of the Christian County Water District's system upgrade project will be contained to multiple roadways totaling approximately 192,705 LF of waterline, located in both the northern and western areas of the county. The line portion of the project primarily involves upgrading with approximately 124,285 LF of 8" treated water line and 68,090 LF of 6" treated water line. Both PVC and ductile iron piping will be considered for the upgrades and extension.

The proposed line upgrades and extension is illustrated in Exhibit 1.

6.1.4 *Regulatory Compliance*

The proposed project has been submitted to the Kentucky State Clearinghouse for their comments. The clearinghouse review of the proposal indicates there are no identifiable conflicts with any state or local plan, goal, or objective. Furthermore, no notices have been received and none are expected to suggest that the water system is in or near a noncompliance status.

6.1.5 Hydraulic Calculations

For preliminary planning purposes, the computer hydraulic model, KYPIPE 2000, has been used to determine the hydraulic characteristics of the Christian County Water District's various pressure zones as it presently exists. The model includes all of the existing lines from the water supply connection with Hopkinsville, plus the proposed line upgrades, replacements and extensions that comprise the Phase VIII project.

More detailed modeling will be required during the plan preparation phase to accompany the submittal to the Kentucky Division of Water. The model results will be available upon request.

6.2 Cost Estimate

The as-bid itemized cost estimate of the Christian County Water District Phase VIII System Upgrade Project is shown in Table 4 and the proposed financing package is illustrated in Table 5.

Table 4
As-Bid Project Budget

CONSTRUCTION		
Contract/Roads	Planning Budget	As-Bid Budget*
Phase 8, Contract 1 - Dawson Rd, Consolation, Bainbridge, Mt. Carmel-Hawkins	\$ 2,022,150	\$ 1,944,533
Phase 8, Contract 2 - Base - Quisenberry Lane	\$ 228,100	\$ 273,575
Phase 8, Contract 2 - Alternate - Madisonville Rd	\$ 495,675	\$ 472,257
Total Construction Cost	\$ 2,745,925	\$ 2,690,365
NON-CONSTRUCTION		
Administrative	\$ 60,000	\$ 60,000
Land & Right-of-Way	\$ 5,000	\$ -
Legal	\$ 25,000	\$ 23,000
Environmental & Conservation Costs	\$ 25,000	\$ 23,115
Preliminary Engineering and Environmental Services	\$ 30,000	\$ 30,000
Surveys and Hydraulic Modeling	\$ 15,000	\$ 15,000
Design Engineering	\$ 140,900	\$ 138,500
Construction Phase Engineering Services	\$ 60,400	\$ 59,400
Construction Inspection	\$ 114,000	\$ 112,600
SUBTOTAL - Non-Construction	\$ 475,300	\$ 461,615
Contingency	\$ 278,775	\$ 348,020
TOTAL PROJECT COST	\$ 3,500,000	\$ 3,500,000

Table 5
Proposed Funding Package

Rural Development Grant	\$ 700,000
Rural Development Loan	\$ 1,800,000
CDBG Grant	\$ 1,000,000
FUNDING SOURCES TOTAL	\$ 3,500,000

6.3 Annual Operating Budget

The proposed annual operating budget for the Christian County Water District Phase VIII System Upgrade Project is shown in Table 6.

Table 6
Proposed Operating Budget

Operating Income	Existing ⁽¹⁾	Extension Only	Future
Water Sales	\$3,021,959.00	\$2,527.20 ⁽³⁾	\$3,325,978.00 ⁽⁹⁾
Other Charges	\$104,787.00	\$0.00	\$104,787.00
Total Operating Income	\$3,126,746.00	\$2,527.20	\$3,430,765.00
Operating and Maintenance Expense			
Purchased Water	\$1,041,561.00	\$600.00 ⁽³⁾	\$1,042,161.00 ⁽⁵⁾
Payroll Expense	\$681,676.00	\$20,450.00 ⁽⁴⁾	\$702,126.00
Maintenance & Repairs	\$72,086.00	\$2,160.00 ⁽⁴⁾	\$74,246.00
Professional Services	\$33,296.00	\$1,000.00 ⁽⁴⁾	\$34,296.00
Utilities & Telephone	\$68,816.00	\$2,060.00 ⁽⁴⁾	\$70,876.00
Operating Materials & Supplies	\$43,819.00	\$1,310.00 ⁽⁴⁾	\$45,129.00
Office Supplies & Expenses	\$129,214.00	\$3,880.00 ⁽⁴⁾	\$133,094.00
Insurance	\$178,867.00	\$5,370.00 ⁽⁴⁾	\$184,237.00
Travel	\$42,718.00	\$1,280.00 ⁽⁴⁾	\$43,998.00
Rental Expense	\$6,438.00	\$190.00 ⁽⁴⁾	\$6,628.00
Total Operating Expenses	\$2,298,491.00	\$38,300.00	\$2,336,791.00
Net Operating Income	\$828,255.00	(\$35,772.80)	\$1,093,974.00
Non-Operating Income (Expense)			
Interest Income	\$26,496.00	\$0.00	\$26,496.00
RUS Interest (Bonds pre-2014)	(\$100,941.00)	\$0.00	(\$98,381.00) ⁽⁷⁾
RUS Principal (Bonds pre-2014)	(\$27,000.00)	\$0.00	(\$29,500.00) ⁽⁷⁾
RUS Interest (2017 Issue)	\$0.00	(\$58,500.00) ⁽⁶⁾	(\$58,500.00) ⁽⁶⁾
RUS Principal (2017 Issue)	\$0.00	(\$24,700.00) ⁽⁶⁾	(\$24,700.00) ⁽⁶⁾
Non-RUS Interest	(\$312,642.00)	\$0.00	(\$254,208.00)
Non-RUS Principal	(\$220,500.00)	\$0.00	(\$360,000.00)
Total Non-Operating Income & Debt	(\$634,587.00)	(\$83,200.00)	(\$798,793.00)
Net for Coverage & Depreciation	\$193,668.00	(\$118,972.80)	\$295,181.00
10% Debt Service Coverage	(\$66,108.00)	(\$8,320.00)	(\$82,529.00)
Subtotal	\$127,560.00	(\$127,292.80)	\$212,652.00
Short Lived Assets ⁽²⁾	(\$216,000.00)	\$0.00	(\$216,000.00)
Net for Depreciation	(\$88,440.00) ⁽⁸⁾	(\$127,292.80)	(\$3,348.00)

Notes:

1. Based on the December 31, 2013 Audit & PSC Report
2. CCWD currently deposits, on most months, \$18,000 into the Short Lived Asset fund. No increase proposed.
3. Based on 4 new customers at 5,000 per month avg usage with new CCWD's 5/8" Meter Rates & avg HWEA rate \$2.48/1k gal
4. Based on 3% nominal increase due to anticipated annual cost increases.
5. Reflects 2013 total purchase (420,217,000 gallons) @ current HWEA Rate + New usage of proposed customers.
6. Estimated Project Debt Service: Based on a **\$1,800,000 RUS loan** at 3.25% and 38 payments
7. Debt Service per Amortization Schedules. 2015 Figures used for Future.
8. The 2013 Depreciation Expense was **\$570,434** per the 2013 Audit
9. Approximate 10% revenue increase (to the 2013 figures) required to provide desired Net for Depreciation

Based on the projections and assumptions outlined above, the commitment of a \$750,000 Rural Development Grant and added revenues from the increased water rates are expected to produce a more desired Net for Depreciation. Without securing the referenced Rural Development grant, it is estimated that an additional 1.14% increase in water sales revenue would be required to offset the increase in debt service and maintain the same equivalent Net for Depreciation.

Table 7 illustrates the project's rate schedule as included in USDA's Letter of Conditions, issued March 23, 2015

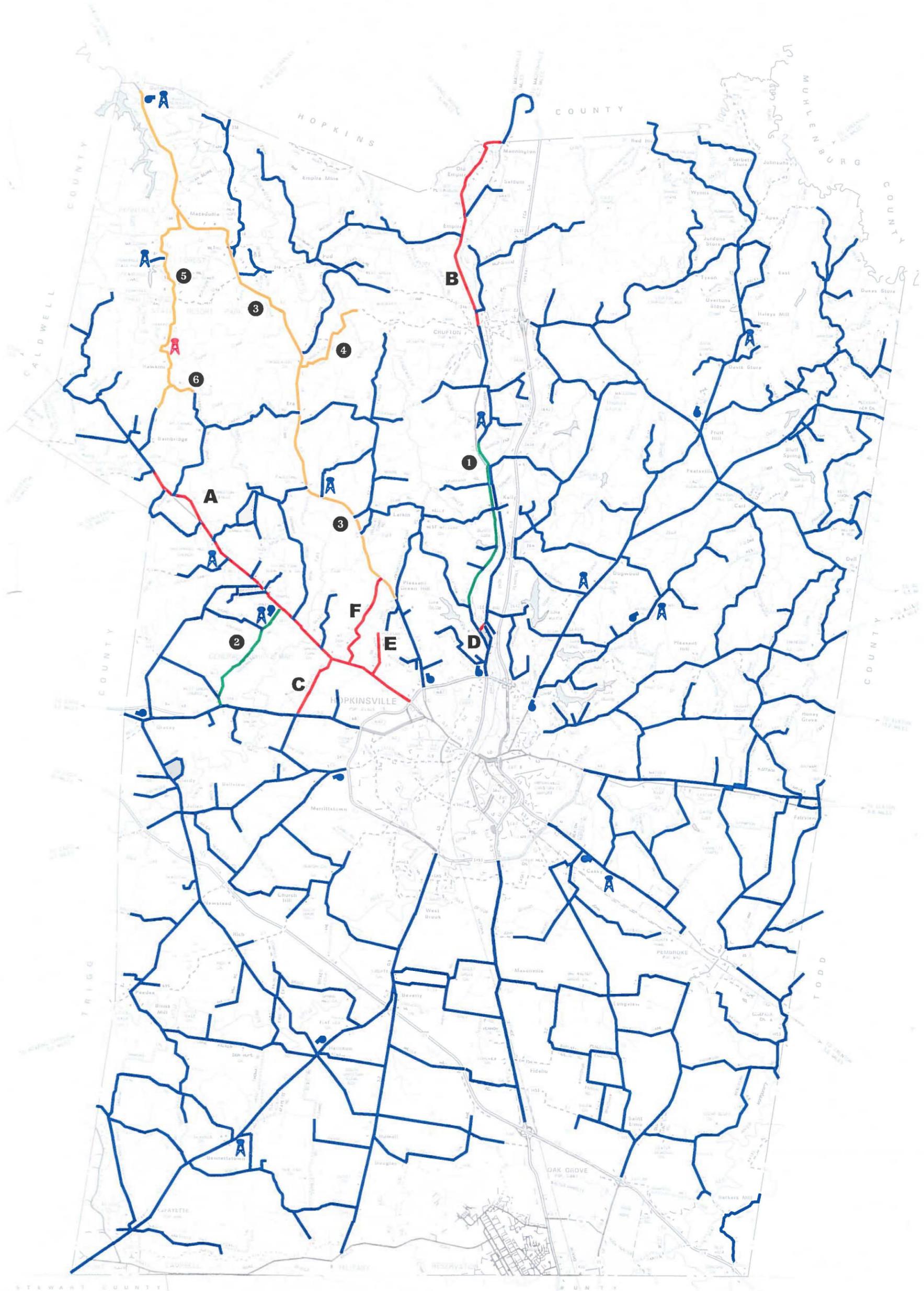
Table 7
Proposed Rate Schedule

5/8" Meter				
First	0	Gallons @	\$ 19.95	Minimum
Over	0	Gallons @	\$ 6.54	per 1,000 Gallons
1" Meter				
First	5,000	Gallons @	\$ 52.65	Minimum
Over	5,000	Gallons @	\$ 6.54	per 1,000 Gallons
1½" Meter				
First	10,000	Gallons @	\$ 85.35	Minimum
Over	10,000	Gallons @	\$ 6.54	per 1,000 Gallons
2" Meter				
First	50,000	Gallons @	\$ 346.95	Minimum
Over	50,000	Gallons @	\$ 6.54	per 1,000 Gallons
4" Meter				
First	100,000	Gallons @	\$ 673.95	Minimum
Over	100,000	Gallons @	\$ 6.54	per 1,000 Gallons

7.0 RECOMMENDED SOLUTION

In order to address the problems and needs of the water system, the Christian County Water District should do the following:

- Construct approximately 37 miles of upgraded waterline to better serve the northern and western Christian County customer base to improve the system's hydraulics and water quality.
- Finalize the application process for \$700,000 in grant and \$1,800,000 in loan from Rural Development.
- Finalize the application process for a \$1,000,000 CDBG grant from the state's Department for Local Government.
- Initiate discussion among the District's Board of Directors concerning public awareness and implementation of raising water rates to fund the project if grant funds are unavailable.



LEGEND

-  Existing Water Line
-  Proposed Water Line—Phase VIII—Contract 1
-  Proposed Water Line—Phase VIII—Contract 2
-  Alternate Water Line—Phase VIII Upgrades
-  Proposed Water Storage Tank
-  Existing Water Storage Tank
-  Existing Pump Station



MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Christian County Water District
Phase VIII System Upgrade Project
LAYOUT MAP

By: McGhee	Scale: As Noted	Date: March 2015	Page: E-1
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Background Map: KyDOT Christian County General Highway Map—1999

Appendix A

Bid Tabulation

Christian County Water District
Phase VIII System Upgrade Project

TABULATION OF BIDS: Contract No. 1 - KY Highway 109 Area Waterlines

Contract No. 1 - Bids Received: March 2, 2017 @ 11:00 a.m.

Contract No. 1 No. BASE BID ITEM	QUANTITY	Horsley Construction, Inc. Hudson, KY		Cleary Construction, Inc. Tompkinsville, KY		Twin States Utilities, Inc. Mount Herman, KY		Norris Bros. Excavating LLC Crossville, TN	
		UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL
01 8-inch Class 200 PVC water line	68,090 LF	\$ 7.90	\$ 537,911.00	\$ 8.65	\$ 588,978.50	\$ 12.70	\$ 864,743.00	\$ 23.28	\$ 1,585,135.20
02 8-inch Class 250 PVC water line	28,130 LF	\$ 10.15	\$ 285,519.50	\$ 10.80	\$ 303,804.00	\$ 13.70	\$ 385,381.00	\$ 24.25	\$ 682,152.50
03 8-inch Class 250 PVC Yelomine-CL	330 LF	\$ 11.00	\$ 3,630.00	\$ 10.80	\$ 3,564.00	\$ 28.70	\$ 9,471.00	\$ 31.04	\$ 10,243.20
04 8-inch Class 350 DIP water line	400 LF	\$ 26.00	\$ 10,400.00	\$ 29.60	\$ 11,840.00	\$ 29.70	\$ 11,880.00	\$ 34.92	\$ 13,968.00
05 6-inch Class 200 PVC water line	45,380 LF	\$ 6.05	\$ 274,549.00	\$ 6.91	\$ 313,575.80	\$ 10.70	\$ 485,566.00	\$ 13.58	\$ 616,260.40
06 6-inch Class 250 PVC water line	3,410 LF	\$ 7.69	\$ 26,222.90	\$ 8.60	\$ 29,326.00	\$ 11.70	\$ 39,897.00	\$ 16.49	\$ 56,230.90
07 4-inch Class 200 PVC water line	330 LF	\$ 7.00	\$ 2,310.00	\$ 6.00	\$ 1,980.00	\$ 9.70	\$ 3,201.00	\$ 13.58	\$ 4,481.40
08 Final Cleanup	144,533 LF	\$ 2.00	\$ 289,066.00	\$ 2.11	\$ 304,964.63	\$ 2.00	\$ 289,066.00	\$ 2.00	\$ 289,066.00
09 Steel, cased road bore; 16"cs/8"cr	460 LF	\$ 85.00	\$ 39,100.00	\$ 142.00	\$ 65,320.00	\$ 200.00	\$ 92,000.00	\$ 174.60	\$ 80,316.00
10 Steel, cased road bore; 10"cs/6"cr	230 LF	\$ 80.00	\$ 18,400.00	\$ 126.00	\$ 28,980.00	\$ 125.00	\$ 28,750.00	\$ 155.20	\$ 35,696.00
11 Steel, cased road bore; 8"cs/4"cr	90 LF	\$ 80.00	\$ 7,200.00	\$ 123.00	\$ 11,070.00	\$ 100.00	\$ 9,000.00	\$ 145.50	\$ 13,095.00
12 Uncased driveway bore	596 LF	\$ 30.00	\$ 17,880.00	\$ 59.10	\$ 35,223.60	\$ 50.00	\$ 29,800.00	\$ 58.20	\$ 34,687.20
13 Cased, Open Cut Road Xing; 16"cs/8"cr	60 LF	\$ 56.35	\$ 3,381.00	\$ 84.40	\$ 5,064.00	\$ 120.00	\$ 7,200.00	\$ 135.80	\$ 8,148.00
14 Open Cut, Uncased Pavement Repair	101 LF	\$ 20.00	\$ 2,020.00	\$ 44.40	\$ 4,484.40	\$ 50.00	\$ 5,050.00	\$ 29.10	\$ 2,939.10
15 Wide Stream Crossing: 16" casing	280 LF	\$ 96.00	\$ 26,880.00	\$ 159.00	\$ 44,520.00	\$ 150.00	\$ 42,000.00	\$ 106.70	\$ 29,876.00
16 Shallow Ditch/Creek Crossing; all sizes	425 LF	\$ 21.00	\$ 8,925.00	\$ 95.00	\$ 40,375.00	\$ 100.00	\$ 42,500.00	\$ 27.16	\$ 11,543.00
17 8"x8" tapping sleeve, valve & box	1 EA	\$ 1,744.00	\$ 1,744.00	\$ 4,009.00	\$ 4,009.00	\$ 4,200.00	\$ 4,200.00	\$ 2,910.00	\$ 2,910.00
18 6"x6" tapping sleeve, valve & box	1 EA	\$ 1,325.00	\$ 1,325.00	\$ 3,692.00	\$ 3,692.00	\$ 3,700.00	\$ 3,700.00	\$ 2,716.00	\$ 2,716.00
19 4"x4" tapping sleeve, valve & box	2 EA	\$ 1,148.00	\$ 2,296.00	\$ 2,954.00	\$ 5,908.00	\$ 3,500.00	\$ 7,000.00	\$ 2,425.00	\$ 4,850.00
20 8" Gate Valve & Box	49 EA	\$ 1,247.00	\$ 61,103.00	\$ 1,688.00	\$ 82,712.00	\$ 1,300.00	\$ 63,700.00	\$ 970.00	\$ 47,530.00
21 6" Gate Valve and box	27 EA	\$ 915.00	\$ 24,705.00	\$ 1,266.00	\$ 34,182.00	\$ 880.00	\$ 23,760.00	\$ 824.50	\$ 22,261.50
22 4" Gate Valve and box	15 EA	\$ 790.00	\$ 11,850.00	\$ 950.00	\$ 14,250.00	\$ 725.00	\$ 10,875.00	\$ 630.50	\$ 9,457.50
23 3" Gate Valve & Box	1 EA	\$ 745.00	\$ 745.00	\$ 897.00	\$ 897.00	\$ 675.00	\$ 675.00	\$ 582.00	\$ 582.00
24 8" EZ Valve Insertion & Box	1 EA	\$ 4,303.00	\$ 4,303.00	\$ 7,384.00	\$ 7,384.00	\$ 6,500.00	\$ 6,500.00	\$ 5,723.00	\$ 5,723.00
25 Large Flush Hydrant + 8" Valve	1 EA	\$ 3,500.00	\$ 3,500.00	\$ 3,903.00	\$ 3,903.00	\$ 4,000.00	\$ 4,000.00	\$ 3,298.00	\$ 3,298.00
26 Large Flush Hydrant + 6" Valve	2 EA	\$ 3,000.00	\$ 6,000.00	\$ 3,692.00	\$ 7,384.00	\$ 3,800.00	\$ 7,600.00	\$ 3,298.00	\$ 6,596.00
27 Large Flush Hydrant + 4" Valve	29 EA	\$ 3,225.00	\$ 93,525.00	\$ 3,482.00	\$ 100,978.00	\$ 3,600.00	\$ 104,400.00	\$ 2,134.00	\$ 61,886.00
28 Terminate/Reinstall Flush + 6" Valve	1 EA	\$ 2,000.00	\$ 2,000.00	\$ 2,110.00	\$ 2,110.00	\$ 2,200.00	\$ 2,200.00	\$ 1,455.00	\$ 1,455.00
29 Connect to Existing 8" Waterline	1 EA	\$ 2,000.00	\$ 2,000.00	\$ 1,794.00	\$ 1,794.00	\$ 2,300.00	\$ 2,300.00	\$ 1,455.00	\$ 1,455.00
30 Connect to Existing 6" Waterline	2 EA	\$ 2,000.00	\$ 4,000.00	\$ 1,794.00	\$ 3,588.00	\$ 2,200.00	\$ 4,400.00	\$ 1,455.00	\$ 2,910.00
31 Connect to Existing 4" Waterline	14 EA	\$ 2,000.00	\$ 28,000.00	\$ 1,530.00	\$ 21,420.00	\$ 2,200.00	\$ 30,800.00	\$ 1,455.00	\$ 20,370.00
32 Connect to Existing 3" Waterline	2 EA	\$ 2,000.00	\$ 4,000.00	\$ 1,266.00	\$ 2,532.00	\$ 2,200.00	\$ 4,400.00	\$ 1,940.00	\$ 3,880.00
33 Connect to Existing 2" Waterline	1 EA	\$ 2,000.00	\$ 2,000.00	\$ 1,266.00	\$ 1,266.00	\$ 2,100.00	\$ 2,100.00	\$ 1,940.00	\$ 1,940.00
34 Air Release Valve	14 EA	\$ 1,200.00	\$ 16,800.00	\$ 1,583.00	\$ 22,162.00	\$ 1,500.00	\$ 21,000.00	\$ 1,164.00	\$ 16,296.00
35 Plug & Cap Existing 4" Waterline	1 EA	\$ 500.00	\$ 500.00	\$ 528.00	\$ 528.00	\$ 2,000.00	\$ 2,000.00	\$ 2,910.00	\$ 2,910.00
36 Plug & Cap Existing 3" Waterline	2 EA	\$ 500.00	\$ 1,000.00	\$ 528.00	\$ 1,056.00	\$ 1,900.00	\$ 3,800.00	\$ 2,716.00	\$ 5,432.00
37 Reconnect 3/4" Service; near side	130 EA	\$ 300.00	\$ 39,000.00	\$ 422.00	\$ 54,860.00	\$ 510.00	\$ 66,300.00	\$ 824.50	\$ 107,185.00
38 Reconnect 3/4" Service; far side	156 EA	\$ 400.00	\$ 62,400.00	\$ 686.00	\$ 107,016.00	\$ 1,550.00	\$ 241,800.00	\$ 955.45	\$ 149,050.20
39 Relocate & Reconnect Meter Service	24 EA	\$ 650.00	\$ 15,600.00	\$ 633.00	\$ 15,192.00	\$ 1,100.00	\$ 26,400.00	\$ 824.50	\$ 19,788.00
40 Reconnect 2" Service; far side	1 EA	\$ 743.00	\$ 743.00	\$ 2,638.00	\$ 2,638.00	\$ 2,500.00	\$ 2,500.00	\$ 1,940.00	\$ 1,940.00
41 Relocate & Reconnect Mainline PRV	1 EA	\$ 2,000.00	\$ 2,000.00	\$ 897.00	\$ 897.00	\$ 3,000.00	\$ 3,000.00	\$ 824.50	\$ 824.50
Total Amount of Bid			\$ 1,944,533.40		\$ 2,295,427.93		\$ 2,994,915.00		\$ 3,977,083.60
No. SUPPLEMENTAL BID ITEM	QUANTITY	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL
A01 Unclassified Undercut	1 CY	\$ 100.00	\$ 100.00	\$ 10.60	\$ 10.60	\$ 50.00	\$ 50.00	\$ 38.80	\$ 38.80
A02 No. 57 Aggregate Refill	1 Ton	\$ 25.00	\$ 25.00	\$ 26.40	\$ 26.40	\$ 50.00	\$ 50.00	\$ 38.80	\$ 38.80
A03 Class 'B' Concrete Refill	1 CY	\$ 150.00	\$ 150.00	\$ 169.00	\$ 169.00	\$ 250.00	\$ 250.00	\$ 121.25	\$ 121.25
A04 Relocate & Reconnect; near with old parts	1 EA	\$ 750.00	\$ 750.00	\$ 422.00	\$ 422.00	\$ 1,200.00	\$ 1,200.00	\$ 1,164.00	\$ 1,164.00
A05 New Meter Service; near side	1 EA	\$ 1,000.00	\$ 1,000.00	\$ 1,055.00	\$ 1,055.00	\$ 1,400.00	\$ 1,400.00	\$ 1,455.00	\$ 1,455.00
A06 New Meter Service; far side	1 EA	\$ 1,050.00	\$ 1,050.00	\$ 1,583.00	\$ 1,583.00	\$ 2,100.00	\$ 2,100.00	\$ 1,940.00	\$ 1,940.00
A07 4" EZ Valve Insertion & Box	1 EA	\$ 4,000.00	\$ 4,000.00	\$ 5,802.00	\$ 5,802.00	\$ 7,300.00	\$ 7,300.00	\$ 4,365.00	\$ 4,365.00
A08 6" EZ Valve Insertion & Box	1 EA	\$ 4,303.00	\$ 4,303.00	\$ 6,330.00	\$ 6,330.00	\$ 7,500.00	\$ 7,500.00	\$ 5,335.00	\$ 5,335.00

Engineer:
McGhee Engineering, Inc.
P. O. Box 267
Guthrie, Kentucky 42234
(270) 483-9985

Owner:
Christian County Water District
1960 Dawson Springs Road
Hopkinsville, Kentucky 42241
(270) 886-3696

Christian County Water District
Phase VIII System Upgrade Project

TABULATION OF BIDS: Contract No. 2 - KY Highway 1349 & US Highway 41 Waterlines

Contract No. 2 - Bids Received: March 2, 2017 @ 11:30 a.m.

Contract No. 2		Horsley Construction, Inc. Hudson, KY		Salmon Construction, Inc. Mt. Washington, KY		United Pipeline, Inc. Tompkinsville, KY		Cleary Construction, Inc. Tompkinsville, KY		Twin States Utilities, Inc. Mount Herman, KY		
No.	BASE BID ITEM - KY HWY 1349	QUANTITY	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL
01	6-inch Class 250 PVC water line	19,200 LF	\$ 6.71	\$ 128,832.00	\$ 16.20	\$ 311,040.00	\$ 13.00	\$ 249,600.00	\$ 36.40	\$ 698,880.00	\$ 22.25	\$ 427,200.00
02	6-inch Class 250 PVC Yelomine-CL	100 LF	\$ 20.58	\$ 2,058.00	\$ 113.15	\$ 11,315.00	\$ 29.00	\$ 2,900.00	\$ 40.10	\$ 4,010.00	\$ 33.00	\$ 3,300.00
03	Final Cleanup	18,977 LF	\$ 2.00	\$ 37,954.00	\$ 2.00	\$ 37,954.00	\$ 2.00	\$ 37,954.00	\$ 3.20	\$ 60,726.40	\$ 2.00	\$ 37,954.00
04	Uncased driveway bore	323 LF	\$ 30.00	\$ 9,690.00	\$ 39.00	\$ 12,597.00	\$ 54.00	\$ 17,442.00	\$ 106.00	\$ 34,238.00	\$ 50.00	\$ 16,150.00
05	Wide Stream Crossing: 10" casing	80 LF	\$ 100.00	\$ 8,000.00	\$ 150.00	\$ 12,000.00	\$ 100.00	\$ 8,000.00	\$ 148.00	\$ 11,840.00	\$ 130.00	\$ 10,400.00
06	Shallow Ditch/Creek Crossing; all sizes	80 LF	\$ 21.00	\$ 1,680.00	\$ 100.00	\$ 8,000.00	\$ 35.00	\$ 2,800.00	\$ 95.00	\$ 7,600.00	\$ 100.00	\$ 8,000.00
07	6"x6" tapping sleeve, valve & box	2 EA	\$ 1,325.00	\$ 2,650.00	\$ 1,500.00	\$ 3,000.00	\$ 1,500.00	\$ 3,000.00	\$ 3,692.00	\$ 7,384.00	\$ 3,700.00	\$ 7,400.00
08	6" Gate Valve and box	18 EA	\$ 915.00	\$ 16,470.00	\$ 1,015.00	\$ 18,270.00	\$ 1,000.00	\$ 18,000.00	\$ 1,266.00	\$ 22,788.00	\$ 880.00	\$ 15,840.00
09	3" Gate Valve & Box	1 EA	\$ 745.00	\$ 745.00	\$ 1,000.00	\$ 1,000.00	\$ 800.00	\$ 800.00	\$ 897.00	\$ 897.00	\$ 675.00	\$ 675.00
10	Air Release Valve	3 EA	\$ 1,155.00	\$ 3,465.00	\$ 1,000.00	\$ 3,000.00	\$ 900.00	\$ 2,700.00	\$ 1,477.00	\$ 4,431.00	\$ 1,400.00	\$ 4,200.00
11	Large Flush Hydrant + 4" Gate Valve	7 EA	\$ 3,100.00	\$ 21,700.00	\$ 3,500.00	\$ 24,500.00	\$ 3,700.00	\$ 25,900.00	\$ 3,482.00	\$ 24,374.00	\$ 3,600.00	\$ 25,200.00
12	Reinstall Existing Flush Hydrant + 4" GV	1 EA	\$ 2,000.00	\$ 2,000.00	\$ 1,200.00	\$ 1,200.00	\$ 2,000.00	\$ 2,000.00	\$ 1,899.00	\$ 1,899.00	\$ 1,800.00	\$ 1,800.00
13	Connect to Existing 6" Waterline	4 EA	\$ 2,000.00	\$ 8,000.00	\$ 900.00	\$ 3,600.00	\$ 2,000.00	\$ 8,000.00	\$ 1,477.00	\$ 5,908.00	\$ 2,200.00	\$ 8,800.00
14	Connect to Existing 3" Waterline	1 EA	\$ 2,000.00	\$ 2,000.00	\$ 900.00	\$ 900.00	\$ 2,000.00	\$ 2,000.00	\$ 1,003.00	\$ 1,003.00	\$ 2,200.00	\$ 2,200.00
15	Plug & Cap Existing 6" Waterline	2 EA	\$ 2,000.00	\$ 4,000.00	\$ 500.00	\$ 1,000.00	\$ 2,000.00	\$ 4,000.00	\$ 528.00	\$ 1,056.00	\$ 2,100.00	\$ 4,200.00
16	Reconnect 3/4" Service; near side	21 EA	\$ 296.00	\$ 6,216.00	\$ 350.00	\$ 7,350.00	\$ 400.00	\$ 8,400.00	\$ 633.00	\$ 13,293.00	\$ 600.00	\$ 12,600.00
17	Reconnect 3/4" Service; far side	31 EA	\$ 400.00	\$ 12,400.00	\$ 350.00	\$ 10,850.00	\$ 900.00	\$ 27,900.00	\$ 1,266.00	\$ 39,246.00	\$ 1,650.00	\$ 51,150.00
18	Relocate & Reconnect Meter Service	9 EA	\$ 635.00	\$ 5,715.00	\$ 1,500.00	\$ 13,500.00	\$ 800.00	\$ 7,200.00	\$ 633.00	\$ 5,697.00	\$ 1,100.00	\$ 9,900.00
Total Amount of Base Bid				\$ 273,575.00		\$ 481,076.00		\$ 428,596.00		\$ 945,270.40		\$ 646,969.00
No.	ALTERNATE BID ITEM - US HWY 41	QUANTITY	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL
A01	8-inch Class 200 PVC water line	27,175 LF	\$ 8.15	\$ 221,476.25	\$ 11.65	\$ 316,588.75	\$ 17.00	\$ 461,975.00	\$ 8.70	\$ 236,422.50	\$ 22.00	\$ 597,850.00
A02	8-inch Class 250 PVC Yelomine-CL	160 LF	\$ 23.00	\$ 3,680.00	\$ 120.00	\$ 19,200.00	\$ 27.00	\$ 4,320.00	\$ 10.80	\$ 1,728.00	\$ 36.00	\$ 5,760.00
A03	Final Cleanup	26,410 LF	\$ 2.00	\$ 52,820.00	\$ 2.00	\$ 52,820.00	\$ 2.00	\$ 52,820.00	\$ 2.20	\$ 58,102.00	\$ 2.00	\$ 52,820.00
A04	Steel Cased, Road Bore; 16"cs/8"cr	180 LF	\$ 85.00	\$ 15,300.00	\$ 150.00	\$ 27,000.00	\$ 270.00	\$ 48,600.00	\$ 142.00	\$ 25,560.00	\$ 200.00	\$ 36,000.00
A05	Cased, Open Cut Road x-ing: 16"cs/8"cr	95 LF	\$ 80.00	\$ 7,600.00	\$ 150.00	\$ 14,250.00	\$ 100.00	\$ 9,500.00	\$ 84.40	\$ 8,018.00	\$ 120.00	\$ 11,400.00
A06	Uncased Driveway Bore	478 LF	\$ 30.00	\$ 14,340.00	\$ 40.00	\$ 19,120.00	\$ 60.00	\$ 28,680.00	\$ 59.10	\$ 28,249.80	\$ 50.00	\$ 23,900.00
A07	Pavement Replacement & Backfill	172 LF	\$ 20.00	\$ 3,440.00	\$ 75.00	\$ 12,900.00	\$ 55.00	\$ 9,460.00	\$ 44.40	\$ 7,636.80	\$ 50.00	\$ 8,600.00
A08	Wide Stream Crossing: 16" casing	120 LF	\$ 100.00	\$ 12,000.00	\$ 200.00	\$ 24,000.00	\$ 140.00	\$ 16,800.00	\$ 159.00	\$ 19,080.00	\$ 150.00	\$ 18,000.00
A09	Shallow Ditch/Creek Crossing; all sizes	165 LF	\$ 21.00	\$ 3,465.00	\$ 150.00	\$ 24,750.00	\$ 35.00	\$ 5,775.00	\$ 95.00	\$ 15,675.00	\$ 100.00	\$ 16,500.00
A10	10"x8" tapping sleeve, valve & box	1 EA	\$ 1,720.00	\$ 1,720.00	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 4,747.00	\$ 4,747.00	\$ 4,200.00	\$ 4,200.00
A11	6"x6" tapping sleeve, valve & box	1 EA	\$ 1,325.00	\$ 1,325.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 3,692.00	\$ 3,692.00	\$ 3,700.00	\$ 3,700.00
A12	8" Gate Valve and box	19 EA	\$ 1,247.00	\$ 23,693.00	\$ 1,350.00	\$ 25,650.00	\$ 1,300.00	\$ 24,700.00	\$ 1,688.00	\$ 32,072.00	\$ 1,300.00	\$ 24,700.00
A13	6" Gate Valve and box	2 EA	\$ 915.00	\$ 1,830.00	\$ 1,000.00	\$ 2,000.00	\$ 1,000.00	\$ 2,000.00	\$ 1,266.00	\$ 2,532.00	\$ 880.00	\$ 1,760.00
A14	4" Gate Valve and box	3 EA	\$ 790.00	\$ 2,370.00	\$ 1,000.00	\$ 3,000.00	\$ 900.00	\$ 2,700.00	\$ 950.00	\$ 2,850.00	\$ 725.00	\$ 2,175.00
A15	3" Gate Valve & Box	2 EA	\$ 700.00	\$ 1,400.00	\$ 1,000.00	\$ 2,000.00	\$ 800.00	\$ 1,600.00	\$ 897.00	\$ 1,794.00	\$ 675.00	\$ 1,350.00
A16	Large Flush Hydrant + 4" Gate Valve	7 EA	\$ 3,100.00	\$ 21,700.00	\$ 3,500.00	\$ 24,500.00	\$ 3,700.00	\$ 25,900.00	\$ 3,692.00	\$ 25,844.00	\$ 3,600.00	\$ 25,200.00
A17	Reinstall Existing Flush Hydrant + 4" GV	2 EA	\$ 1,500.00	\$ 3,000.00	\$ 2,500.00	\$ 5,000.00	\$ 2,500.00	\$ 5,000.00	\$ 3,482.00	\$ 6,964.00	\$ 2,000.00	\$ 4,000.00
A18	Air Release Valve	4 EA	\$ 1,155.00	\$ 4,620.00	\$ 1,200.00	\$ 4,800.00	\$ 900.00	\$ 3,600.00	\$ 1,477.00	\$ 5,908.00	\$ 1,500.00	\$ 6,000.00
A19	Plug & Cap Existing 6" Waterline	2 EA	\$ 2,000.00	\$ 4,000.00	\$ 500.00	\$ 1,000.00	\$ 2,000.00	\$ 4,000.00	\$ 844.00	\$ 1,688.00	\$ 2,200.00	\$ 4,400.00
A20	Connect to Existing 8" Waterline	1 EA	\$ 2,000.00	\$ 2,000.00	\$ 1,100.00	\$ 1,100.00	\$ 2,000.00	\$ 2,000.00	\$ 1,266.00	\$ 1,266.00	\$ 2,300.00	\$ 2,300.00
A21	Connect to Existing 6" Waterline	2 EA	\$ 2,000.00	\$ 4,000.00	\$ 1,600.00	\$ 3,200.00	\$ 2,000.00	\$ 4,000.00	\$ 1,161.00	\$ 2,322.00	\$ 2,200.00	\$ 4,400.00
A22	Connect to Existing 4" Waterline	3 EA	\$ 2,000.00	\$ 6,000.00	\$ 1,050.00	\$ 3,150.00	\$ 2,000.00	\$ 6,000.00	\$ 1,055.00	\$ 3,165.00	\$ 2,200.00	\$ 6,600.00
A23	Connect to Existing 3" Waterline	1 EA	\$ 2,000.00	\$ 2,000.00	\$ 1,000.00	\$ 1,000.00	\$ 2,000.00	\$ 2,000.00	\$ 950.00	\$ 950.00	\$ 2,200.00	\$ 2,200.00
A24	Connect to Existing 2" Waterline	1 EA	\$ 2,000.00	\$ 2,000.00	\$ 1,000.00	\$ 1,000.00	\$ 2,000.00	\$ 2,000.00	\$ 844.00	\$ 844.00	\$ 2,100.00	\$ 2,100.00
A25	Reconnect 3/4" Service; near side	53 EA	\$ 296.00	\$ 15,688.00	\$ 275.00	\$ 14,575.00	\$ 400.00	\$ 21,200.00	\$ 422.00	\$ 22,366.00	\$ 610.00	\$ 32,330.00
A26	Reconnect 3/4" Service; far side	48 EA	\$ 400.00	\$ 19,200.00	\$ 300.00	\$ 14,400.00	\$ 900.00	\$ 43,200.00	\$ 686.00	\$ 32,928.00	\$ 1,650.00	\$ 79,200.00
A27	Relocate & Reconnect Meter Service	34 EA	\$ 635.00	\$ 21,590.00	\$ 1,100.00	\$ 37,400.00	\$ 800.00	\$ 27,200.00	\$ 633.00	\$ 21,522.00	\$ 1,200.00	\$ 40,800.00
Subtotal of Alternate Bid Items				\$ 472,257.25		\$ 657,903.75 *		\$ 818,530.00		\$ 573,926.10		\$ 1,018,245.00
Total of Base + Alternate				\$ 745,832.25		\$ 1,138,979.75 *		\$ 1,247,126.00		\$ 1,519,196.50		\$ 1,665,214.00
No.	SUPPLEMENTAL BID ITEM	QUANTITY	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL
a	Unclassified Undercut	1 CY	\$ 100.00	\$ 100.00	\$ 10.00	\$ 10.00	\$ 30.00	\$ 30.00	\$ 10.60	\$ 10.60	\$ 50.00	\$ 50.00
b	No. 57 Aggregate Refill	1 Ton	\$ 25.00	\$ 25.00	\$ 20.00	\$ 20.00	\$ 35.00	\$ 35.00	\$ 26.40	\$ 26.40	\$ 50.00	\$ 50.00
c	Class 'B' Concrete Refill	1 CY	\$ 150.00	\$ 150.00	\$ 110.00	\$ 110.00	\$ 300.00	\$ 300.00	\$ 169.00	\$ 169.00	\$ 250.00	\$ 250.00
d	Relocate & Reconnect; near with old parts	1 EA	\$ 750.00	\$ 750.00	\$ 700.00	\$ 700.00	\$ 600.00	\$ 600.00	\$ 422.00	\$ 422.00	\$ 1,200.00	\$ 1,200.00
e	New Meter Service; near side	1 EA	\$ 1,000.00	\$ 1,000.00	\$ 1,200.00	\$ 1,200.00	\$ 1,100.00	\$ 1,100.00	\$ 1,055.00	\$ 1,055.00	\$ 1,400.00	\$ 1,400.00
f	New Meter Service; far side	1 EA	\$ 1,050.00	\$ 1,050.00	\$ 1,700.00	\$ 1,700.00	\$ 1,400.00	\$ 1,400.00	\$ 1,583.00	\$ 1,583.00	\$ 2,100.00	\$ 2,100.00
g	6" EZ Valve Insertion & Box	1 EA	\$ 4,000.00	\$ 4,000.00	\$ 8,250.00	\$ 8,250.00	\$ 7,000.00	\$ 7,000.00	\$ 6,330.00	\$ 6,330.00	\$ 7,500.00	\$ 7,500.00
h	8" EZ Valve Insertion & Box	1 EA	\$ 4,303.00	\$ 4,303.00	\$ 8,725.00	\$ 8,725.00	\$ 8,000.00	\$ 8,000.00	\$ 7,384.00	\$ 7,384.00	\$ 8,150.00	\$ 8,150.00

Denotes Calculation Error *

Engineer:
McGhee Engineering, Inc.
P. O. Box 267
Guthrie, Kentucky 42234

Owner:
Christian County Water District
1960 Dawson Springs Road
Hopkinsville, Kentucky 42241