Rubin & Hays

ATTORNEYS AT LAW

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

June 2, 2008

Ms. Stephanie Stumbo
Executive Director
Public Service Commission
P.O. Box 615
Frankfort, Kentucky 40602

Re: East Logan Water District - KRS 278.023 Application

2008-201

Dear Ms. Stumbo:

Enclosed please find the original and ten (10) copies of the Application of the East Logan 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**.

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

Sincerely,

Rubin & Hays

By
W. Randall Jones

WRJ:jlm
Enclosures
cc: Distribution List

DISTRIBUTION LIST

Account No. 632.0000

Re: East Logan Water District Waterworks Revenue Bonds, Series 2008, in the principal amount of $1,700,000

Mr. Kenneth H. Slone, State Director
Rural Development
771 Corporate Drive, Suite 200
Lexington, Kentucky 40503-5477
Telephone: (859) 224-7336
Fax: (859) 224-7425

Mr. Jerry Cloyd
Rural Development
320B Traylor Street
Princeton, Kentucky 42445
Telephone: (270) 365-6530

Ms. Sarah Moore
East Logan Water District
P. O. Box 715
Auburn, Kentucky 42206
Telephone: (270) 542-6894

Mr. Chris Wilcutt
McGhee Engineering, Inc.
202 Ewing Street
P.O. Box 267
Guthrie, Kentucky 42234-0267
Telephone: (270) 483-9985
Fax: (270) 483-9986

Mark Collins, Esq.
Attorney at Law
P.O. Box 746
Elkton, Kentucky 42220-0746
Telephone: (270) 265-2912
Fax: (270) 265-2054

W. Randall Jones, Esq.
Rubin & Hays
Kentucky Home Trust Building
450 South Third Street
Louisville, Kentucky 40202
Telephone: (502) 569-7534
Fax: (502) 569-7555

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF EAST LOGAN WATER DISTRICT FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT, FINANCE AND INCREASE RATES PURSUANT TO KRS 278.023.	))))))	**Case No. 2008 - 261**

APPLICATION

This Application of the East Logan Water District ("Applicant") of Logan County, Kentucky, respectfully shows:

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

2. That the post office address of Applicant is:

East Logan Water District
c/o Mr. Bill Stokes, Chairman
P.O. Box 715
Auburn, Kentucky 42206

3. That Applicant, pursuant to the provisions of KRS 278.020 and 278.023, seeks (i) a Certificate of Public Convenience and Necessity, permitting Applicant to construct a waterworks construction project, consisting of extensions, additions, and improvements (the "Project") to the existing waterworks system of Applicant; (ii) an Order approving increased rates; and (iii) approval of the proposed plan of financing said Project.

4. That the Phase 2 project consists of the construction and installation of (i) an upgrade to the telemetry system, (ii) a new booster pumping station, (iii) new master meter stations, (iv) approximately 24 miles of water distribution line and appurtenances, (v) conversion of existing water meters to radio read meters, and (vi) addition of new GIS system hardware and software.

5. That Applicant proposes to finance the construction of the Project through (i) the issuance of $1,700,000 of its Waterworks Revenue Bonds, (ii) a USDA, Rural Development ("RD") Grant in the amount of $700,000; (iii) a Kentucky State grant in the amount of $200,000; (iv) a contribution from the Logan/Todd Regional Water Commission in the amount of $100,000; and (v) an Applicant contribution in the amount of $345,000. Applicant has a commitment from RD to

purchase said $1,700,000 of bonds maturing over a 40-year period, at an interest rate of not exceeding 4.125% 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 Public Service Commission.

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

EXHIBIT A. Copy of RD Letter of Conditions, as amended.

EXHIBIT B. Copy of RD Letter of Concurrence in Bid Award.

EXHIBIT C. Certified statement from the Chairman of Applicant, 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 already been obtained;

(3) The proposed rates of Applicant shall produce the total revenue requirements set out in the engineering reports; and

(4) Setting out the dates when it is anticipated that construction will begin and end.

Applicant also files herewith two (2) copies of Preliminary and Final Engineering Reports.

8. That Applicant has arranged for the publication, prior to or at the same time this Application is filed, of a Notice of Proposed Rate Change pursuant to Section 2 of 807 KAR 5:069, in the *News Democrat and Leader,* which is the newspaper of general circulation in Applicant's service area and in Logan County, Kentucky. Said Notice sets out the current rates and the proposed rates of Applicant and a short description of the Project. A copy of said Notice is filed herewith as **EXHIBIT D**.

9. That the foregoing constitutes the documents necessary to obtain the approval of the Kentucky Public Service 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 1.

WHEREFORE, Applicant, the East Logan 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 waterworks project consisting of extensions, additions, and improvements to the existing waterworks system of Applicant.

b. An Order approving the financing arrangements made by Applicant, viz., the issuance of (i) $1,700,000 of East Logan Water District Waterworks Revenue Bonds, at an interest rate of not exceeding 4.125% per annum, (ii) an RD Grant in the amount of $700,000; (iii) a Kentucky State grant in the amount of $200,000, (iv) a contribution from the Logan/Todd Regional Water Commission in the amount of $100,000; ~~(v) Applicant connection fees in the amount of $300,000~~; and (vi) an Applicant contribution in the amount of $45,000.

c. An Order approving the proposed increased rates as set out in Section 28 of the RD Letter of Conditions, as amended, filed herewith as an Exhibit.

East Logan 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
(502) 569-7525

COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF LOGAN)

The undersigned, Bill Stokes, being duly sworn, deposes and states that he is the Chairman of the Board of Commissioners of the East Logan Water District, Applicant, in the above proceedings; that he has read the foregoing Application and has noted the contents thereof; that the same is true of his own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, he believes same to be true.

IN TESTIMONY WHEREOF, witness the signature of the undersigned on this May 30, 2008.

Bill Stokes, Chairman
East Logan Water District

Subscribed and sworn to before me by Bill Stokes, Chairman of the Board of Commissioners of the East Logan Water District, on this May 30, 2008.

My Commission expires: 4/24/12.

Notary Public, Logan County, Kentucky

United States Department of Agriculture
Rural Development
Kentucky State Office

January 23, 2007

Mr. Bill Stokes, Chairman
East Logan Water District
P.O. Box 715
Auburn, Kentucky 42206

Dear Mr. Stokes:

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/or 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/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 $1,700,000; a RUS grant not to exceed $700,000; a Kentucky State grant in the amount of $800,000; a cash contribution from the Logan Todd Regional Water Commission in the amount of $100,000; and an applicant contribution in the amount of $300,000.

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 240 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:

1. Number of Users and Their Contribution:

There shall be 2,645 water users, all of which are existing users. The Area Director will review and authenticate the number of users and amount of applicant contribution prior to advertising for construction bids.

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 1st and July 1st) 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 can 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 SF 5510, "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 $750 per month into a "Funded Depreciation Reserve Account" until the account reaches $90,000. The deposits are to be resumed any time the account falls below the $90,000.

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 ordinances.

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 $1,500 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.

7. Security Requirements:

A pledge of gross water revenue 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.

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, bookkeeping, making and delivering required reports and audits.

11. Accounts, Records and Audits:

The District will be required to maintain adequate records and accounts and submit annual budgets and year-end reports (annual audits) in accordance with subsection 1780.47 of RUS Instruction 1780 and RUS Staff Instruction 1780-4, a copy of which is enclosed.

The enclosed audit booklet will be used as a guide for preparation of audits. 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.

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 $249,000.

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:

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 210 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. Treatment Plant/System Operator:

The District is reminded that the treatment plant and/or 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."

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.

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.

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.

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		$ 2,850,000
Land and Rights		25,000
Legal and Administrative		50,000
Engineering		359,000
Interest		36,000
Contingencies		280,000
	TOTAL	$ 3,600,000

Financing:

RUS Loan		$ 1,700,000
RUS Grant		700,000
Kentucky State Grant		800,000
Logan Todd Regional Water Comm. Contribution		100,000
Applicant Contribution/Connection Fees		300,000
	TOTAL	$ 3,600,000

25. Commitment of Other Project Funds:

This Letter of Conditions is issued contingent upon a firm commitment being in effect prior to advertising for construction bids for the Kentucky State grant in the amount of $800,000 and for the Logan Todd Regional Water Commission contribution in the amount of $100,000.

26. Use of Remaining Project Funds:

The applicant contribution shall be considered as the first funds expended. After providing for all authorized costs, any remaining project funds will be considered to be RUS/Kentucky State grant funds and refunded in proportion to participation in the project. If the amount of unused project funds exceeds the grants, that part would be RUS loan funds.

27. Proposed Operating Budget:

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.

28. 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:

Water rates will be at least:

First	2,000	gallons @ $	20.41 - Minimum Bill.
Next	2,000	gallons @ $	9.67 - per 1,000 gallons.
Next	2,000	gallons @ $	9.24 - per 1,000 gallons.
Next	4,000	gallons @ $	8.05 - per 1,000 gallons.
All Over	10,000	gallons @ $	5.69 - per 1,000 gallons.

29. 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.

30. Compliance with the Bioterrorism Act:

Prior to pre-closing 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).

31. 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.

32. Mitigation Measures:

A. The project shall be in compliance with all requirements noted in the Governor's Office for Local Development letter dated January 19, 2006, from Mr. Ronald W. Cook, Manager.

B. 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.

C. The design and construction shall be in compliance with all local, state and federal environmental statutes, regulations and executive orders applicable to the project.

33. 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,

Kenneth Slone
KENNETH SLONE
State Director

Enclosures

cc: Area Director - Princeton, Kentucky
Rural Development Manager - Elkton, Kentucky
Pennyrile ADD - Hopkinsville, Kentucky
✓Rubin and Hays - Louisville, Kentucky
Jay Joines - Russellville, Kentucky
McGhee Engineering, Inc. - Guthrie, Kentucky
PSC - ATTN: Bob Amato - Frankfort, Kentucky

United States Department of Agriculture
Rural Development
Kentucky State Office

MAY 13 2008

May 2, 2008

Mr. Bill Stokes, Chairman
East Logan Water District
P.O. Box 715
Auburn, Kentucky 42206

Re: Letter of Conditions Dated January 23, 2007

Dear Mr. Stokes:

This letter shall serve as Amendment No. 1 to the Letter of Conditions dated January 23, 2007. The purpose of this amendment is to revise the project cost, project funding, and proposed rates after the project has been bid.

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 $1,700,000, a RUS grant not to exceed $700,000, a Kentucky State grant of $200,000, a cash contribution from the Logan/Todd Regional Water Commission of $100,000, and an applicant cash contribution of $345,000. "

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

" 24. Cost of Facility:

Breakdown of Costs:

Development		$ 2,465,485
Land and Rights		25,000
Legal and Administrative		50,000
Engineering and Environmental		343,770
Interest		36,000
Contingencies		124,745
	TOTAL	$ 3,045,000

771 Corporate Drive • Suite 200 • Lexington, KY 40503
Phone: (859) 224-7336 • Fax: (859) 224-7444 • TDD: (859) 224-7422 • Web: http://www.rurdev.usda.gov/ky

Financing:

RUS Loan	$ 1,700,000
RUS Grant	700,000
Kentucky State Grant	200,000
Logan/Todd Regional W.C. Contribution	100,000
Applicant Contribution	345,000
TOTAL	$ 3,045,000 "

Paragraph numbered "26" is revised to read as follows:

" 26. Use of Remaining Project Funds:

The applicant contribution and connection fees, along with the Logan/Todd Regional Water Commission cash contribution, shall be considered as the first funds expended. After providing for all authorized costs, any remaining project funds will be considered to be RUS/Kentucky State grant funds and refunded in proportion to participation in the project. If the amount of unused project funds exceeds the grants, that part would be RUS loan funds. "

Paragraph numbered "28" is revised to read as follows:

" 28. 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	2,000	gallons @ $	22.01 - Minimum Bill.
Next	2,000	gallons @ $	10.45 - per 1,000 gallons.
Next	2,000	gallons @ $	10.02 - per 1,000 gallons.
Next	4,000	gallons @ $	8.80 - per 1,000 gallons.
All Over	10,000	gallons @ $	6.40 - per 1,000 gallons.

1 Inch Meter:

First	4,000	gallons @ $	42.91 - Minimum Bill.
Next	2,000	gallons @ $	10.02 - per 1,000 gallons.
Next	4,000	gallons @ $	8.80 - per 1,000 gallons.
All Over	10,000	gallons @ $	6.40 - per 1,000 gallons.

1 1/2 Inch Meter:

First	6,000	gallons @ $	62.95 - Minimum Bill.
Next	4,000	gallons @ $	8.80 - per 1,000 gallons.
All Over	10,000	gallons @ $	6.40 - per 1,000 gallons.

2 Inch Meter:

First	10,000	gallons @ $	98.15 - Minimum Bill.
All Over	10,000	gallons @ $	6.40 - per 1,000 gallons.

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

Sincerely,

for Vernon C Slone
KENNETH SLONE
State Director

cc: Area Director - Princeton, Kentucky
Pennyrile ADD - Hopkinsville, Kentucky
Rubin and Hays - Louisville, Kentucky
Jay Jones - Russellville, Kentucky
McGhee Engineering - Guthrie, Kentucky
PSC - ATTN: Dennis Jones - Frankfort, Kentucky

United States Department of Agriculture
Rural Development
Kentucky State Office

April 15, 2008

SUBJECT: East Logan Water District
Waterline extensions
Contract Award Concurrence

TO: Area Director
Princeton, 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 $1,638,836.23, the low bidder on contract 2, EFI & Hanks Construction in the amount of $108,307.64, and the low bidder on contract 3, C.I. Thornburg Co., Inc., in the amount of $438,341.83.

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

KENNETH SLONE
State Director
Rural Development

cc: McGhee Engineering, Inc.
Guthrie, Kentucky

Rubin and Hays
Louisville, Kentucky

771 Corporate Drive • Suite 200 • Lexington, KY 40503
Phone: (859) 224-7300 • Fax: (859) 224-7425 • TDD: (859) 224-7422 • Web: http://www.rurdev.usda.gov/ky

CERTIFICATE OF CHAIRMAN OF EAST LOGAN WATER DISTRICT, AS TO STATEMENT REQUIRED BY SECTION 1(5) OF 807 KAR 5:069

I, Bill Stokes, hereby certify that I am the duly qualified and acting Chairman of the East Logan Water District, and that said District is in the process of arranging to finance the construction of extensions, additions and improvements to the existing waterworks system of the District (the "Project"), in cooperation with McGhee Engineering, Inc., Guthrie, Kentucky, the Engineers for the District (the "Engineers").

Based on information furnished to me by said Engineers for the District, 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 already been obtained.

3. That the rates proposed by the District in its current Application filed with the Public Service Commission of Kentucky are contemplated to produce total revenue requirements set out 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 1, 2008, and will end on or about December 1, 2008.

IN TESTIMONY WHEREOF, witness my signature this May 30, 2008.

Bill Stokes
Chairman
East Logan Water District

STATE OF KENTUCKY)
) SS
COUNTY OF LOGAN)

Subscribed and sworn to before me by Bill Stokes, Chairman of the Board of Commissioners of the East Logan Water District, on this May 30, 2008.

Sarah Moore
Notary Public
In and For Said State and County

NOTICE OF PROPOSED RATE CHANGE

In accordance with the requirements of the Public Service Commission of the Commonwealth of Kentucky as set out in 807 KAR 5:069, Section 2, notice is hereby given to the customers of the East Logan Water District of a change to the District's rate schedule as set forth herein. The proposed rate change is required by USDA, Rural Development in connection with a loan by RD to the District in the amount of $1,700,000 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 its water rates as set forth below:

Current Monthly Rates

5/8" x 3/4" Meter:

First 2,000 gallons	$19.98 minimum bill
Next 2,000 gallons	9.49 per 1,000 gallons
Next 2,000 gallons	9.10 per 1,000 gallons
Next 4,000 gallons	7.99 per 1,000 gallons
All over 10,000 gallons	5.81 per 1,000 gallons

1" Meter:

First 4,000 gallons	$38.95 minimum bill
Next 2,000 gallons	9.10 per 1,000 gallons
Next 4,000 gallons	7.99 per 1,000 gallons
All over 10,000 gallons	5.81 per 1,000 gallons

1½" Meter:

First 6,000 gallons	$57.15 minimum bill
Next 4,000 gallons	7.99 per 1,000 gallons
All over 10,000 gallons	5.81 per 1,000 gallons

2" Meter:

First 10,000 gallons	$89.10 minimum bill
All over 10,000 gallons	5.81 per 1,000 gallons

Proposed Monthly Rates

5/8" x 3/4" Meter:

First 2,000 gallons	$22.01 minimum bill
Next 2,000 gallons	10.45 per 1,000 gallons
Next 2,000 gallons	10.02 per 1,000 gallons
Next 4,000 gallons	8.80 per 1,000 gallons
All over 10,000 gallons	6.40 per 1,000 gallons

1" Meter:

First 4,000 gallons	$42.91 minimum bill
Next 2,000 gallons	10.02 per 1,000 gallons
Next 4,000 gallons	8.80 per 1,000 gallons
All over 10,000 gallons	6.40 per 1,000 gallons

1½" Meter:

First 6,000 gallons	$62.95 minimum bill
Next 4,000 gallons	8.80 per 1,000 gallons
All over 10,000 gallons	6.40 per 1,000 gallons

2" Meter:

First 10,000 gallons	$98.15 minimum bill
All over 10,000 gallons	6.40 per 1,000 gallons

The RD loan proceeds will be used in conjunction with various grants and contributions to finance the Phase 2 project, consisting of the construction and installation of (i) an upgrade to the telemetry system, (ii) a new booster pumping station, (iii) new master meter stations, (iv) approximately 24 miles of water distribution line and appurtenances, (v) conversion of existing water meters to radio read meters, and (vi) addition of new GIS system hardware and software. Signed: Bill Stokes, Chairman, East Logan Water District.

Preliminary Engineering Report

prepared for the

East Logan Water District

2006 Phase 2 System Upgrade Project

Bill Stokes
Chairman

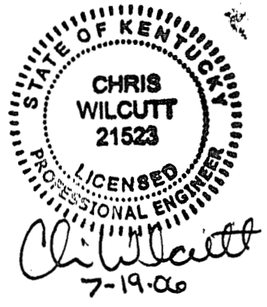
Rudy Shelton
Secretary/Treasurer

Carroll Browning
Board Member

Charles Kelly Hanks
Manager

prepared by

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



July 2006

Preliminary Engineering Report
Table of Contents
East Logan Water District 2006 Phase 2 System Upgrade Project

Tables

Preliminary Engineering Report
Table of Contents (cont.-)
East Logan Water District 2006 Phase 2 System Upgrade Project

Exhibits

Appendix

1.0 INTRODUCTION

The East Logan Water District (ELWD) was formed by Logan County Court order in 1972 to supply potable water to residents of north-eastern and the eastern portions of Logan County, Kentucky. The District is controlled by a Board of Directors, which consists of a Chairman and two Directors. The District is regulated by the Kentucky Public Service Commission.

The East Logan Water District is comprised of approximately 250 miles of water line and three ground level water storage tanks with a total capacity of 1,126,000 gallons, all of which serves approximately 2,646 customers within their defined service area. The District currently purchases all of its treated water from the Logan Todd Regional Water Commission (LTRWC). The Commission's water treatment facility is rated at 10 million gallons per day, and their distribution system consists of nearly 85 miles of pipeline three water storage tanks totaling 3,500,000 gallons in capacity. Since going online with the Commission, the average daily usage within the East Logan system has ranged from 500,000 to 550,000 gallons per day. East Logan currently has three meter stations with the Commission, two located along US Highway 68 (Bowling Green Road) and the other along KY Highway 79 near the Russellville bypass.

East Logan is a large district, covering nearly a third of Logan County. Almost all of the roads within the District boundary have water service, with only short extensions needed from time to time to accommodate new development.

The ELWD was originally constructed in 1979. Since then, four major extensions and a number of minor extensions have taken place. USDA Rural Development has contributed funds to assist with system construction, as have the Kentucky Infrastructure Authority and the Community Development Block Grant program. 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 East Logan Water District has requested funding assistance to undertake their Phase 2 System Upgrade Project.

The proposed project includes construction of a new 250,000 gallon elevated tank in the Plainview Area, construction of eight new master meter stations to assist with water loss and leak detection, addition of additional telemetry equipment for monitoring of master meter locations, conversion of existing water meters to radio-read capability, minimizing current O&M expenses associated with meter reading, addition of a new GIS System Hardware and Software, and water line Extensions & Upgrades along 21 miles of the following roads The total cost of the proposed project is estimated to be $3,600,000.

2.0 PROJECT PLANNING AREA

2.1 *Location*

The waterline construction of the East Logan Water Association's project will be spread out along various rural roadways. Nearly 21 miles of new waterline

construction or upgrade are proposed for nine different roadways. The affected roadways are listed in Table 1.

Table 1
Waterline Information

Map I.D.	PRIMARY ROUTES ROAD NAME	Length (miles)	Line Size (inches)
❶	KY Highway 103 Replacement	9.5	10
❷	Summers Road Extension	0.7	3
❸	Morton Road Upgrade	1.4	6
❹	Lost City Road Extension	2.5	4
❺	Stevenson Mill Road Upgrade	2.7	8
❻	Russellville Bypass Extension	1.4	8
❼	US Highway 68 South Union Extension	1.6	6
❽	Oakville-Corinth Road Extension	1.1	3
❾	Tower Road Realignment	0.1	3
	TOTAL	21.0	

The tank portion of the project involves the construction of a 250,000-gallon elevated water storage tank. The tank's proposed location is within the heart of the Plainview community, north of Russellville. East Logan is in the process of securing an option for a piece of land in this area, and the topography of the area will allow for a suitable tank height to produce the stable pressures desired. The proposed overflow of the tank will be between 800' and 895', which will produce adequate pressure for the strained area. A telemetry system and booster pumping station (or electronic control valve mechanism) will be used to fill the new tank, and its operation and system pressure will be maintained by the tank's water level.

The proposed project is illustrated on a county highway map and labeled as Exhibit 1.

2.2 *Land Use and Environmental Resources Present*

As stated earlier, the line portion of the project is spread out along nearly 21 miles of roadway, all within rural areas of north and east Logan County. The line work is proposed to be constructed within utility easements previously acquired or to be acquired by the East Logan 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. Industrial, commercial, residential and agriculture resources in the entire District will be affected upon completion of the project by providing improved pressure and abundant storage capacity.

An archeological investigation is required of the possible tank sites to determine if the proposed tank site affects historical and archeological resources that may be eligible for listing in the National Register for Historical Places. Dr. Jack Schock, of Arrow Enterprises, will conduct a review of the site(s) as soon as options are secured. However, it is anticipated that his report will conclude that no historical resource would be affected by the proposed project, and that the State Historical Preservation Officer will concur with his assessment.

The following exhibits indicate the environmental resources present within the project planning area:

- A topographic map of each proposed water line and proposed tank site, indicating the areas to be affected and the surrounding area, are attached as Exhibits 2 thru 8. The base maps are USGS 7.5' quadrangles images.
- Waterlines that are near or traverse through defined FEMA floodplain zones are illustrated in Exhibits 9 thru 11.
- Exhibit 12 & 13 shows Soil survey data from the Soil Conservation Service.

2.3 *Growth Areas and Population Trends*

The population history of Logan County is an important element in determining the growth patterns over the last 50 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, Logan County's population was 20,896 in 1960, which represents its lowest census year during the last 60 years. Steady growth has been the trend in Logan County since the 1960's. Table 2 provides the population history and projections of the county based on data obtained from the U.S. Bureau of the Census.

Table 2
Population History and Projections

		Historical							Projections					
	YEAR	1940	1950	1960	1970	1980	1990	2000	2005	2010	2015	2020	2025	2030
LOGAN	Adairville	784	800	848	973	1,105	906	920	933	953	983	1,006	1,027	1,041
	Auburn	955	994	1,013	1,160	1,467	1,273	1,444	1,464	1,496	1,542	1,579	1,611	1,634
	Lewisburg	524	496	512	651	972	772	903	915	936	964	988	1,007	1,023
	Russellville	3,986	4,529	5,861	6,456	7,520	7,454	7,149	7,247	7,407	7,632	7,816	7,974	8,090
	Rural Areas	17,096	15,516	12,662	12,553	13,074	14,011	16,157	16,378	16,741	17,246	17,666	18,020	18,284
	Logan County	23,345	22,335	20,896	21,793	24,138	24,416	26,573	26,937	27,533	28,367	29,055	29,639	30,072
	% Change		-4.3%	-6.4%	4.3%	10.8%	1.2%	8.8%	1.4%	2.2%	3.0%	2.4%	2.0%	1.5%

Notes to Table 1: 1. Shaded areas have been calculated based on census and projection data.

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 1940 to 2000 shows that the cities in Logan County have grown overall with some fluctuations. Most of the cities' gains came at the expense of the rural populations in Logan County. However, based on census data, the rural population should continue to grow and surpass the 1940 population figures. Therefore, the population of the East Logan Water District should experience similar growth based upon these projections.

Several factors influence the growth of a community, some of which include accessibility, technology, education, water infrastructure, sewer facilities, and jobs. Over the past ten years, the community has experienced the benefit of a new four-lane highway, which has increased the areas access to larger Kentucky cities such as Hopkinsville and Bowling Green plus improved access to Interstates 24 and 65. High speed internet and wireless technology has gradually entered the communities, creating greater and easier contact to the rest of the world. The local school system is strong and provides a quality education. Recent census figures reveal that over two thirds of the county's population are high school graduates, which is near the state average. Over the last ten years, the District and other communities within the county have worked together to secure a reliable source of potable water for the next thirty years as the county goes online with the recently completed Logan Todd Regional Water Commission.

Further analysis of these projections indicates Logan County's population is projected to grow 13% or add 3,500 persons by 2030. While this growth rate is higher than historical, the projections, when compared with estimates by area development districts, universities, etc., are sound. It should be noted that population would be impacted by the availability or unavailability of water supply. An ample supply of water will promote growth while the lack thereof will limit growth. These factors must be considered when reviewing this report since many assumptions are dependent on these projections.

3.0 EXISTING FACILITIES

3.1 *History and Assets*

The East Logan Water District (ELWD) was formed by Logan County Court order in 1972 to supply potable water to residents of northeastern and eastern Logan County, Kentucky. The water system is comprised of approximately 251 miles of water line and a total water storage capacity of 736,000 gallons. The existing distribution system consists primarily of 8", 6", 4", 3" and 2" PVC lines. The general service area is depicted in Exhibit 1, which illustrates the general distribution layout. The existing transmission and distribution lines generally radiate from Russellville, its former water supplier. The system is well laid out with many loops. However, there are some dead end and low-flow lines within the system that require frequent flushing.

ELWD has three ground level water storage tanks to serve the water system and one primary pumping station that has recently been installed to serve the latest tank addition. The largest ground level tank is located outside the City of Auburn, along Cemetery Road, and the tank has a total capacity of 587,000 gallons and an overflow elevation of 895 feet. The second and oldest ground level tank is located in

the Dennis community. The Dennis tank has a capacity of 220,000 gallons and an overflow elevation of 890 feet. The third and newest tank is located in the Beechland community, and it has a capacity of 319,000 gallons and an overflow of 776 feet.

The Logan Todd Regional system initially supplies water to the ELWD system in three locations. Two of the feed points are via meter/pump stations, both of which are located along US Highway 68 near the Dennis and Cemetery Road tanks, respectively. A third minor feed point is located along KY Highway 79 to serve an isolated area with a large number of homes. Flow through the larger meter stations is controlled by the LTRWC SCADA system, and pressure is regulated as flow enters to match the existing tank overflows. System pressures are normally maintained by the level in the respective storage tanks.

3.2 *Regulatory Compliance*

According to the Division of Water's remarks within the Clearinghouse Comments, the East Logan 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 *Existing Rate Schedule (effective since May 10, 2003)*

Meter Size 5/8 x 3/4 Inch :

First	2,000	Gallons @	$ 18.90	Minimum
Next	2,000	Gallons @	$ 8.95	per 1,000 Gallons
Next	2,000	Gallons @	$ 8.56	per 1,000 Gallons
Next	4,000	Gallons @	$ 7.45	per 1,000 Gallons
All Over	10,000	Gallons @	$ 5.27	per 1,000 Gallons

Meter Size 1 Inch :

First	4,000	Gallons @	$ 36.79	Minimum
Next	2,000	Gallons @	$ 8.56	per 1,000 Gallons
Next	4,000	Gallons @	$ 7.45	per 1,000 Gallons
All Over	10,000	Gallons @	$ 5.27	per 1,000 Gallons

Meter Size 1 ½ Inch :

First	6,000	Gallons @	$ 53.91	Minimum
Next	4,000	Gallons @	$ 7.45	per 1,000 Gallons
All Over	10,000	Gallons @	$ 5.27	per 1,000 Gallons

Meter Size 2 Inch :

First	10,000	Gallons @	$ 83.70	Minimum
All Over	10,000	Gallons @	$ 5.27	per 1,000 Gallons

3.3.2 *O&M Costs (FYE 12/31/05)*

Item No.	Expense Item	Amount
1	Purchased Water	$ 567,439.00
2	Management fees	$ 204,434.00
3	Training and Meetings	$ 1,720.00
4	Utilities	$ 6,992.00
5	Transmission Expense	$ 108,904.00
6	Professional Fees	$ 18,153.00
7	Insurance	$ 8,439.00
8	Commissioners Fees	$ 13,200.00
9	Debt Fees	$ 1,235.00
10	Office Expense	$ 14,204.00
11	Miscellaneous Expense	$ 9,878.00
12	Bad Debt Expense	$ 10,351.00
13	Advertising	$ 2,930.00
	Total Utility Expense	**$ 967,879.00**

3.3.3 *Long Term Debts (as of 12/31/05)*

Date of Issue	Bond/Note Holder	Principal Balance	Payment Date	Bond Type	Amount on Deposit in Reserve *
1989	KIA	$ 352,500.00	2010	Note	$ 247,623.00
1990	RD	$ 385,000.00	2030	Revenue	
1991	KIA	$ 175,000.00	2011	Note	
1995	RD	$ 603,500.00	2035	Revenue	
2002	RD	$ 736,000.00	2042	Revenue	

4.0 NEED FOR PROJECT

4.1 *Health and Safety*

As stated earlier, portions of the East Logan Water District are currently strained due to growth and recent expansion projects to serve unserved areas. The strain limits the District'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. However, during peak times, some higher elevated areas, which also contain large number of users, experience pressures dipping to 30 psi.

The District constantly battles water loss within the system. Due to the vast area served, the 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.

The proposed elevated water storage tank will relieve the low pressure concerns experienced in the Plainview community, located in the central portion of

the District. This particular area has experienced tremendous growth in recent years due to its proximity to Russellville and neighboring school system. The pipelines in this area are some of the original infrastructure of the District, but the growth has arose in only the past ten years. Thus, water flow and pressures have been greatly affected by the strain placed on the aged and undersized pipelines. During the especially high demand events, residential pressures in this area drop to and below 35 psi, which is a minimum requirement according to the Ten State Standards. A new tank will place an ample amount of water storage at the point of these high demands, thus reducing the large head loss values which are currently creating the inadequate pressures.

4.2 *System O&M*

There are two primary reasons for the District's proposed project. The first is to improve its ability to supply stable pressures above the Ten States Standard threshold. The second reason is to improve and assist the District's ability to monitor water flow and locate leaks to minimize water loss. As previously stated, the water system has experienced tremendous growth in some of the original constructed areas of the water system. During some peak demand periods within these type areas, the feeder lines are incapable of providing adequate flows resulting in unacceptable pressures. In particular, the Plainview community hydraulic conditions are especially sensitive to this problem. Consequently, the proposed elevated storage tank will provide volume into this area and eliminate the fluctuations in hydraulic performance

The project will also include the addition of master meter stations, additional telemetry equipment, radio-read meter conversion, meter reading equipment, and GIS hardware/software. All of these components will improve the District's ability to monitor water flow and make timely locations of water leaks. The radio read meters will improve O&M costs by decreasing the time needed to read 2,646 meters, but it will also enable the District to locate service line leaks quicker with a simple drive by and comparison to historical usage. Overall, management of purchased water costs should be greatly improved with the new equipment's potential to assist and locate waterloss.

4.3 *Growth*

As mentioned earlier, the population of Logan County and the rural areas should grow by an average of 5% every five years over the next 30 years based upon reliable census records and expected growth. The proposed project is necessary to improve the District's ability to serve the recent growth and new developments that are likely in the future. Overall, the proposed project is ultimately being designed to improve water service to their existing 2,646 customers. The new infrastructure will 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 East Logan 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 pressure strain 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 assists with resolving the two critical deficiencies in the water system. The alternative upgrades undersized waterlines strained by growth in the system; eliminates dead end lines that suffer with water quality problems and require frequent flushing; provides a water storage structure in a high demand community, which will stabilize pressure conditions; and provide beneficial equipment to assist with the battle to control waterloss. The project adheres with the Commonwealth's drive to provide a reliable and potable water source to all families by the year 2020. Also, the project provides a solution to East Logan's inability to provide at least 35-psi pressure during all demand times.

5.2.1 *Description*

The project involves construction of 21 miles of water line on nine roadways in the eastern portions of Logan County. All of these lines are being built to improve hydraulic performance of the existing distribution system by either replacing defective pipe or upgrading line size on strained pipelines. The Plainview area of north central Logan County experiences low pressure during high demand periods. This will be corrected by the construction of a 250,000-gallon water storage tank (O.F. = ~800'-895') and a booster pumping station or control valve vault. Other low-pressure areas can be corrected by building interconnecting lines to complete hydraulic circuits or "loops". These loops will also improve the water quality by cutting down on the stagnant water in dead-end lines.

In a further attempt to improve service to customers, East Logan is also proposing to install a number of additional master metering stations and telemetry system add-ons to allow the operators to monitor the performance of the system in greater detail, and to identify problems earlier. Also, all existing water meters will be converted to radio read, and other meter reading and GIS equipment will be provided to improve operation and maintenance. 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 proposed construction will be done along existing easements and highways. The line extensions and upgrades are proposed for construction in existing pipeline easements where possible or in county/state right-of-way and easements as necessary. East Logan is in the process of securing a land option in the Plainview community that can be reasonably purchased for the proposed elevated water tank. 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 East Logan 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. All of the pipeline routes and the proposed tank site are very accessible, and there is little evidence of a high water table. However, mobilization will be significant during the project since all of the proposed water lines are spread out throughout the service area. Also, some of the waterline extensions will require creek crossings, but none of which should be unmanageable or exceptionally costly.

5.2.4 *Cost Estimates*

The East Logan Water District's 2006 Phase 2 System Upgrade Project is estimated to have a total cost of $3,600,000. The project cost consists of construction, non-construction and contingency costs, which are $2,800,000, $520,000 and $280,000 respectively. The project is anticipated to be funded in part by a $900,000 grant and $1,500,000 loan from Rural Development, $800,000 grant from the State Budget, and $400,000 in local contributions.

6.0 PROPOSED PROJECT

6.1 *Project Design*

6.1.1 *Water Supply*

The Logan Todd Regional Water Commission's plant will serve the proposed project. Based upon figures from LTRWC, the newly completed plant is producing approximately 4,000,000 gallons per day, which is approximately 40% of the design capacity. Therefore, sufficient capacity exists to continue service to the East Logan Water District and its proposed project since no new customers are expected.

6.1.2 *Storage*

The proposed project will involve the construction of a new 250,000-gallon elevated storage tank (OF = ~800-895'). This new tank will be constructed in the Plainview community, which experiences periods of unacceptable low pressure during seasonal high demands. The new tank will place a sufficient water storage supply at the primary problem point producing a steady pressure environment of at least 50 psi in the higher elevations of the community. Overall, the water system's total storage capacity will increase to 1,376,000 gallons or nearly three and half times the current daily demand. The proposed tank sites are illustrated in Exhibit 1.

6.1.3 *Distribution Layout*

The waterline construction of the East Logan Water District's system upgrade project will be spread out along nearly 21 miles of rural roadways. The affected roadways are not clustered together as typical in most system upgrades, but they are rather "fill-in" lines or replacements to serve hydraulic improvements for water quality and flow. The line portion of the project involves the new construction of approximately 10,200 LF of 3" PVC treated water line, 13,000 LF of 4" PVC treated water line, 16,000 LF of 6" PVC treated water line, 21,500 LF of 8" PVC treated water line, and 50,000 LF of 10" PVC treated water line. In addition to the waterlines, a booster pumping station and/or control valve vault will be constructed to control the filling of the proposed water tank. Also, in an attempt to improve service to customers, East Logan is proposing to install a number of master metering stations and telemetry system additions to allow the operators to monitor the performance of the entire system in greater detail, and to identify problems earlier.

The proposed line extensions and possible tank sites are 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 simulator, KYPIPE 2000, has been used to construct a system wide model to determine the hydraulic characteristics of the East Logan

Water District, as it currently exists. The proposed line additions, upgrades, and tank were then added and a 48-hour extended period simulation of the distribution system was run to analyze the diurnal pressure and flow variations.

The "existing conditions" model verified the existence of low pressure areas during high demand periods, especially in the Plainview and Chandlers communities. The "future conditions" model verified that the new tank and upsized water arteries will correct the current problems. The requirement to provide a line flushing velocity of at least 2.5 feet per second has also been considered. The model results are available upon request.

6.2 *Cost Estimate*

The proposed itemized cost estimate of the East Logan Water District's Phase 2 System Upgrade Project is shown in Table 3.

Table 3
Project Cost Estimate

No.	Item	Total
	Construction	
1	Highway 103 Line Replacement	$ 935,000
2	Summers Road Line Extension	$ 27,350
3	Morton Road Line Upgrade	$ 97,300
4	Lost City Road Tie-in	$ 126,700
5	Stevenson Mill Road Upgrade	$ 247,100
6	Russellville Bypass Connector	$ 139,100
7	US 68/80 South Union Extension	$ 101,800
8	Oakville-Corinth Road Extension	$ 31,750
9	Tower Road Realignment	$ 3,900
10	New Plainview Area Water Tank	$ 545,000
11	System-Wide Improvements	$ 545,000
	Subtotal - Construction	**$2,800,000.00**
	Non-Construction	
1	Administrative Expense	$20,000.00
2	Land & Right-of-Way	$25,000.00
3	Legal Costs	$30,000.00
4	Preliminary Engineering & Environmental Services	$20,000.00
5	Design Engineering	$143,000.00
6	GIS Data Acquisition & Programming	$70,000.00
7	Construction Phase Engineering Services	$61,000.00
8	Construction Inspection	$115,000.00
9	Financing Costs	$36,000.00
	Subtotal - Nonconstruction	**$520,000.00**
	Contingency	$280,000.00
	TOTAL ESTIMATED PROJECT COST	**$3,600,000.00**

6.3 *Annual Operating Budget*

The proposed annual operating budget for the East Logan Water District's Phase 2 System Upgrade Project is shown in Table 4.

Table 4
Proposed Operating Budget

	Existing [1]	Extension Only		Future	
Operating Income					
Water Sales	$1,270,093.00	$0.00	[2]	$1,377,201.00	[8]
Other Charges	$46,902.00	$0.00	[2]	$46,902.00	
Total Operating Income	$1,316,995.00	$0.00		$1,424,103.00	
Operating and Maintenance Expense					
Purchased Water	$567,439.00	$0.00	[3]	$635,688.00	[7]
Management Fees	$219,354.00	$6,600.00	[4]	$225,954.00	
Transmission and O&M Expense	$108,904.00	$3,300.00	[4]	$112,204.00	
Insurance	$8,439.00	$300.00	[4]	$8,739.00	
Utilities	$6,992.00	$200.00	[4]	$7,192.00	
Professional & Contracted Fees	$18,153.00	$500.00	[4]	$18,653.00	
Office Supplies & Collection Expense	$24,555.00	$700.00	[4]	$25,255.00	
Miscellaneous Expense	$14,043.00	$400.00	[4]	$14,443.00	
Total Operating Expenses	$967,879.00	$12,000.00		$1,048,128.00	
Net Operating Income	$349,116.00	($12,000.00)		$375,975.00	
Non-Operating Income (Expense)					
Interest Income	$43,039.00	$0.00		$43,039.00	
Other	$1,280.00	$0.00		$1,280.00	
RUS Interest (Bonds pre-2006)	($121,985.00)	$0.00		($78,870.00)	[6]
RUS Principal (Bonds pre-2006)	($43,500.00)	$0.00		($23,000.00)	[6]
RUS Interest (2006 Phase II)	$0.00	($61,875.00)	[5]	($61,875.00)	[6]
RUS Principal (2006 Phase II)	$0.00	($16,975.00)	[5]	($16,975.00)	[6]
Non-RUS Interest	($10,757.00)	$0.00		($19,100.00)	[6]
Non-RUS Principal	($35,500.00)	$0.00		($32,500.00)	[6]
Total Non-Operating Income	($167,423.00)	($78,850.00)		($188,001.00)	
Net for Coverage & Depreciation	$181,693.00	($90,850.00)		$187,974.00	

Notes:

1. Based on the 2005 Audit & 2005 PSC Report
2. Based on 0 new customers.
3. Based on 0 new customers.
4. Based on 3% nominal increase due to anticipated annual cost increases.
5. Based on a **$1,500,000 RUS loan** at 4.125% and 38 payments
6. Estimated Debt Service for 2007
7. Based on 12% nominal increase due to wholesale increase of $2.91/1,000 gallons to $3.26/1,000 gallons
8. Approximate **8%** rate increase required to roughly maintain current Net for Coverage & Depreciation.

Based on the projections and assumptions outlined above, the commitment of a $900,000 Rural Development Grant, local contributions, a $800,000 state grant, and added revenues from the increased water rates are expected to produce an adequate fund for coverage and depreciation, which is slightly higher than the previous year. Without securing the referenced grants, it is estimated that an additional 4% increase to the proposed water rates would be required to offset the

increase in debt service and maintain the equivalent fund for coverage and depreciation.

Table 5 illustrates the project's rate schedule with the requested RUS Grant, and Table 6 shows the necessary rate schedule if the project is undertaken without the requested RUS Grant and funded entirely with RUS loan and other monies.

Table 5

Project Rate Schedule with RUS Grant

5/8" x ¾" Meter

First	2,000	Gallons @	$ 20.41		Minimum
Next	2,000	Gallons @	$ 9.67		per 1,000 Gallons
Next	2,000	Gallons @	$ 9.24		per 1,000 Gallons
Next	4,000	Gallons @	$ 8.05		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.69		per 1,000 Gallons

1" Meter

First	4,000	Gallons @	$ 39.73		Minimum
Next	2,000	Gallons @	$ 9.24		per 1,000 Gallons
Next	4,000	Gallons @	$ 8.05		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.69		per 1,000 Gallons

1½" Meter

First	6,000	Gallons @	$ 58.22		Minimum
Next	4,000	Gallons @	$ 8.05		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.69		per 1,000 Gallons

2" Meter

First	10,000	Gallons @	$ 90.40		Minimum
Over	10,000	Gallons @	$ 5.69		per 1,000 Gallons

Table 6

Project Rate Schedule without RUS Grant

5/8" x ¾" Meter

First	2,000	Gallons @	$ 21.17		Minimum
Next	2,000	Gallons @	$ 10.02		per 1,000 Gallons
Next	2,000	Gallons @	$ 9.59		per 1,000 Gallons
Next	4,000	Gallons @	$ 8.34		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.90		per 1,000 Gallons

1" Meter

First	4,000	Gallons @	$ 41.20		Minimum
Next	2,000	Gallons @	$ 9.59		per 1,000 Gallons
Next	4,000	Gallons @	$ 8.34		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.90		per 1,000 Gallons

1½" Meter

First	6,000	Gallons @	$ 60.38		Minimum
Next	4,000	Gallons @	$ 8.34		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.90		per 1,000 Gallons

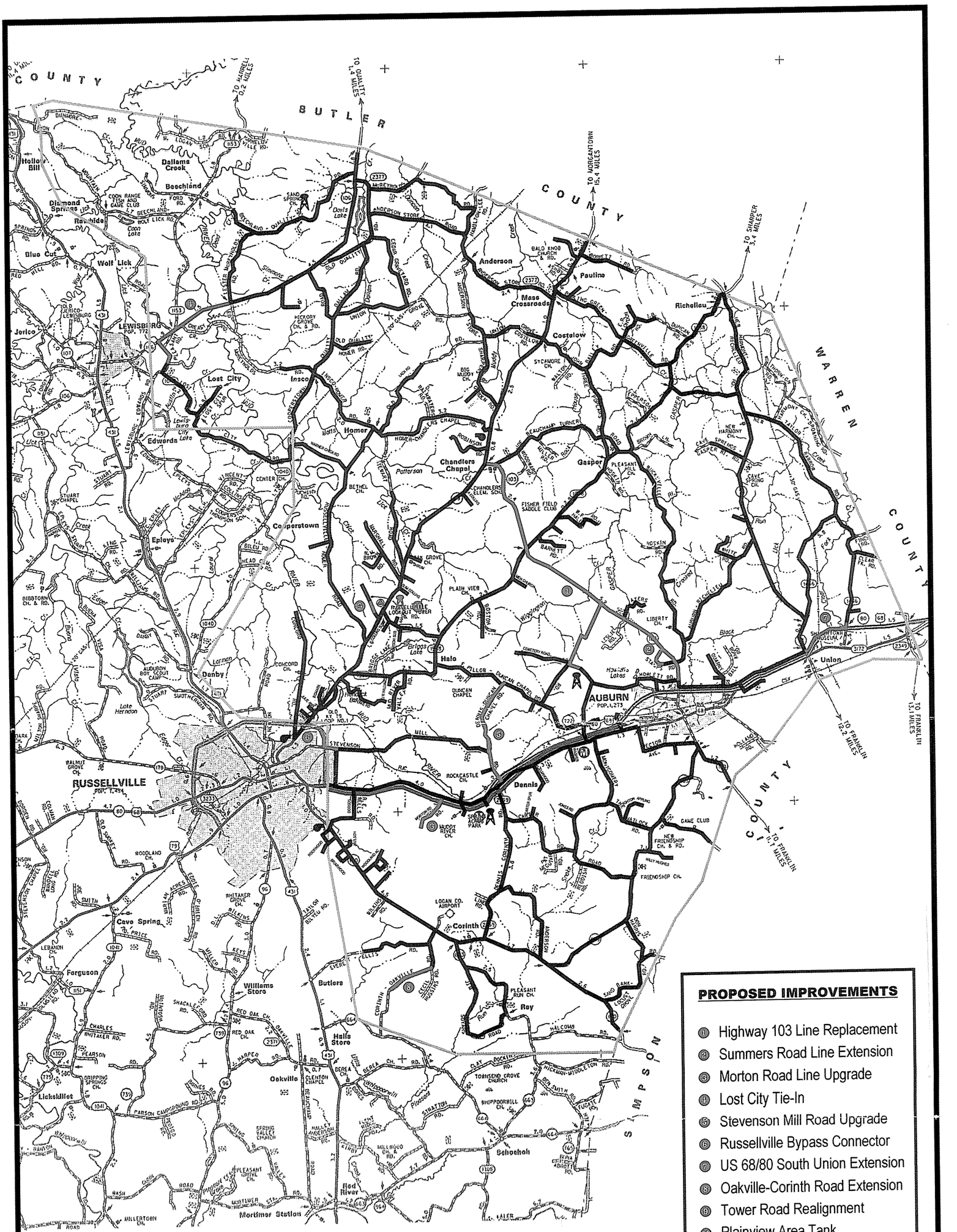
2" Meter

First	10,000	Gallons @	$ 93.74		Minimum
Over	10,000	Gallons @	$ 5.90		per 1,000 Gallons

7.0 RECOMMENDED SOLUTION

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

- Construct a 250,000-gallon elevated water storage tank (OF = ~800'-895') to serve the Plainview community.
- Construct approximately 21 miles of new waterline to improve the system's hydraulics and water quality.
- Construct a booster pumping station and/or electronic control valve vault to control the flow and filling of the proposed Schochoh tank.
- Continue the application process for $900,000 in grant and $1,500,000 in loan from Rural Development.
- Conduct any required geotechnical investigations to insure the proposed tank site is suitable for a cost feasible foundation.
- Initiate discussion among the District's Board of Directors concerning public awareness and implementation of raising water rates to fund the project, especially if grant funds are unavailable.
- Continue pursuing different means of financing through other available agencies and methods.



PROPOSED IMPROVEMENTS

1. Highway 103 Line Replacement
2. Summers Road Line Extension
3. Morton Road Line Upgrade
4. Lost City Tie-In
5. Stevenson Mill Road Upgrade
6. Russellville Bypass Connector
7. US 68/80 South Union Extension
8. Oakville-Corinth Road Extension
9. Tower Road Realignment
10. Plainview Area Tank

N

0 1 2 3 4

Scale in Miles

Background Map: KyDOT Logan County General Highway Map—1999

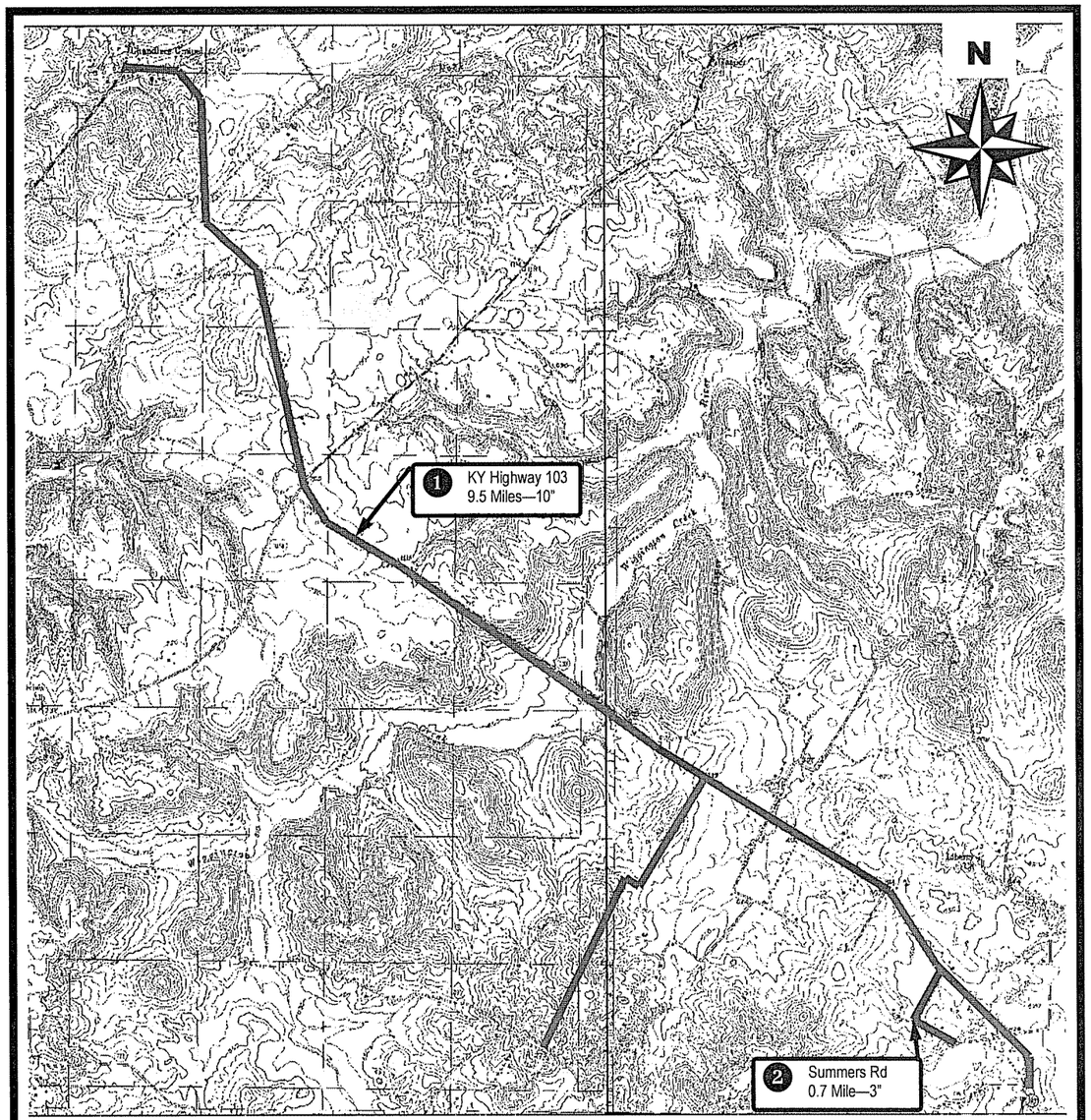
LEGEND

- Existing Water Line
- Proposed Water Line
- Logan Todd RWC Supply Line
- Pressure Zone Boundary
- District Boundary
- Existing Water Storage Tank
- Proposed Water Storage Tank
- Existing Pump Station
- LTRWC Supply Metering/ Pump Station

McGHEE ENGINEERING, INC.
Guthrie, Kentucky

East Logan Water District
Phase II System Upgrade
PROJECT LAYOUT

By:	Scale:	Date:	Exhibit:
McGhee	As Noted	August 2005	1



Legend

Proposed Water Line

Proposed Tank

Proposed Pump Station/Valve Vault

McGHEE ENGINEERING, INC.

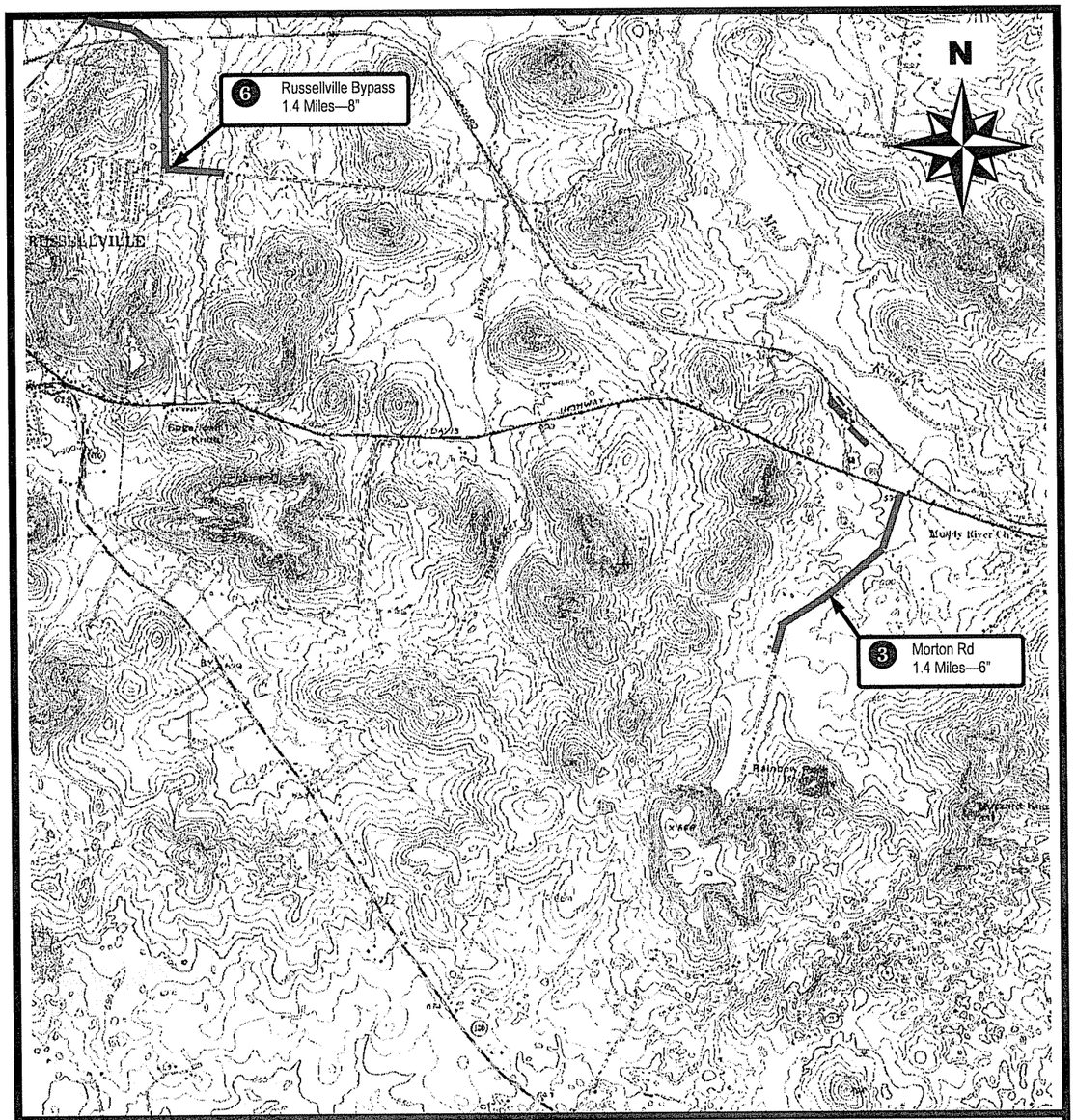
Guthrie, Kentucky

East Logan Water District

2006 Phase 2 System Upgrade Project

KY Highway 103 & Summers Road

Basemap:	Scale:	Exhibit:
Homer & South Union Quads	As Noted	2



Legend

Proposed Water Line

Proposed Tank

Proposed Pump Station/Valve Vault

McGHEE ENGINEERING, INC.

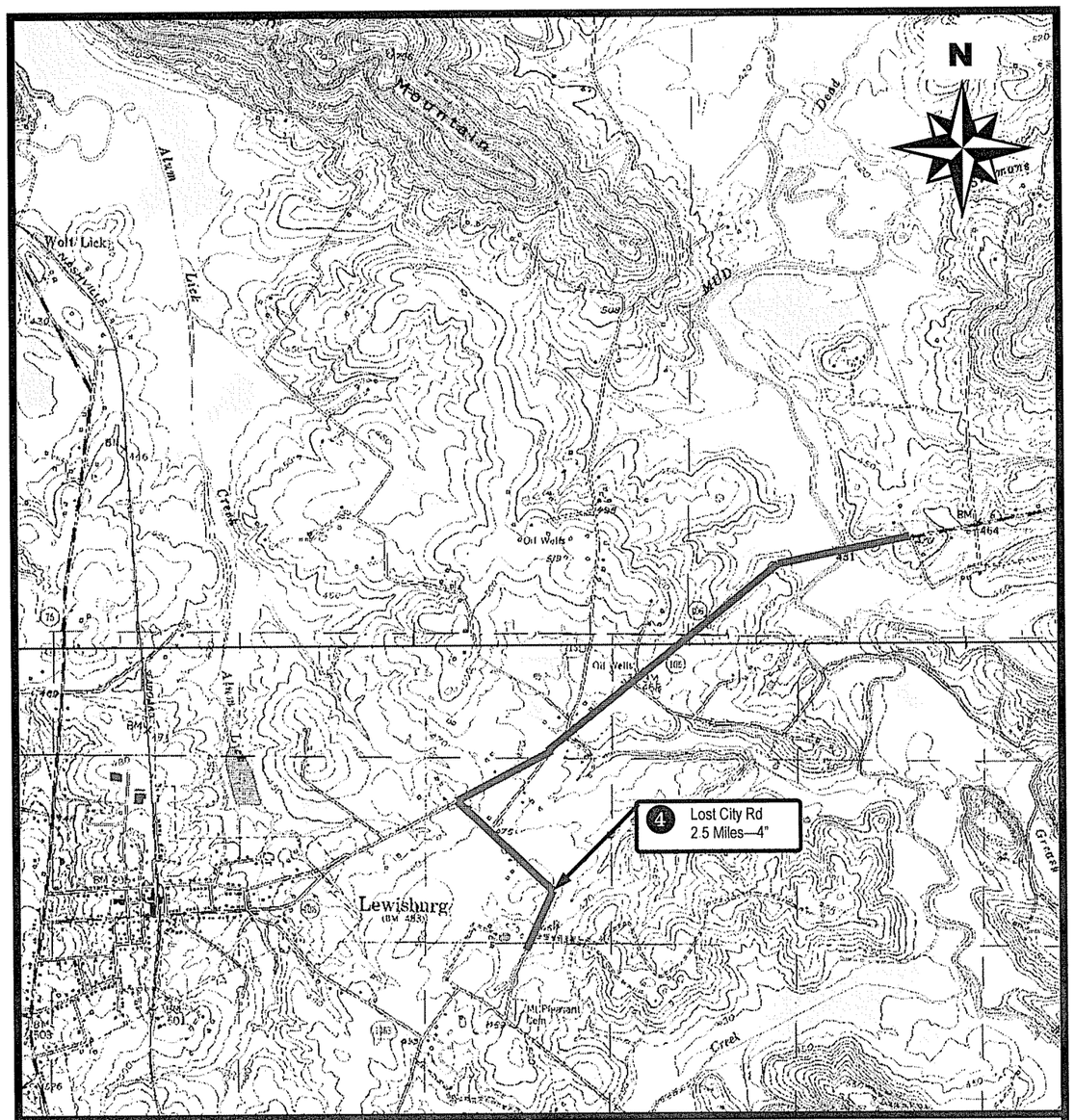
Guthrie, Kentucky

East Logan Water District

2006 Phase 2 System Upgrade Project

Morton Road & Russellville Bypass

Basemap:	Scale:	Exhibit:
Dennis Quadrangle	As Noted	3



Legend

Proposed Water Line

Proposed Tank

Proposed Pump Station/Valve Vault

McGHEE ENGINEERING, INC.

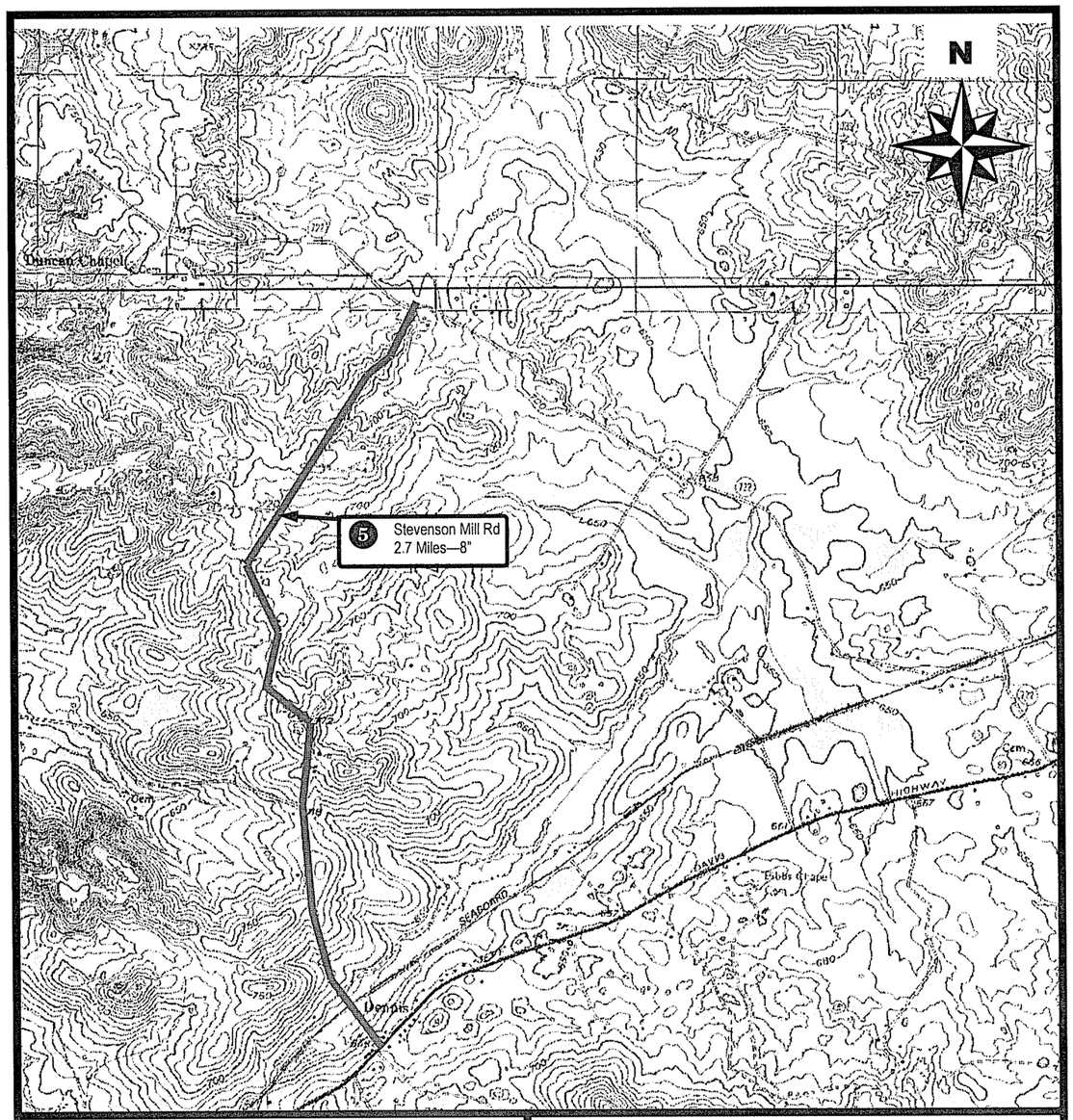
Guthrie, Kentucky

East Logan Water District

2006 Phase 2 System Upgrade Project

Lost City Road & US Highway 106

Basemap:	Scale:	Exhibit:
Lewisburg & Dunmor Quads	As Noted	4



Legend

Proposed Water Line

Proposed Tank

Proposed Pump Station/Valve Vault

McGhee Engineering, Inc.

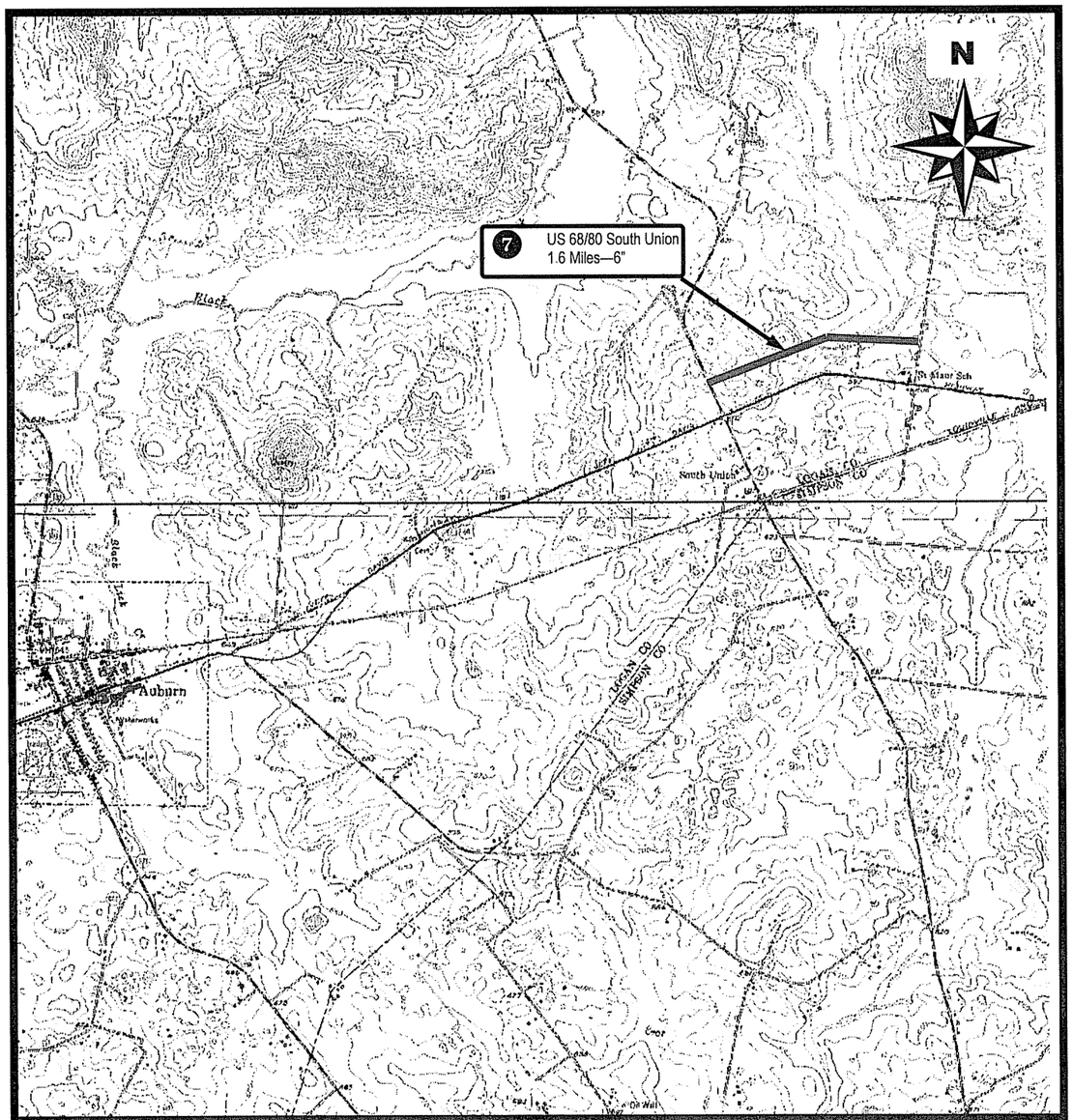
Guthrie, Kentucky

East Logan Water District

2006 Phase 2 System Upgrade Project

Stevenson Mill Road Upgrade

Basemap:	Scale:	Exhibit:
Dennis Quadrangle	As Noted	5



Legend

Proposed Water Line

Proposed Tank

Proposed Pump Station/Valve Vault

McGHEE ENGINEERING, INC.

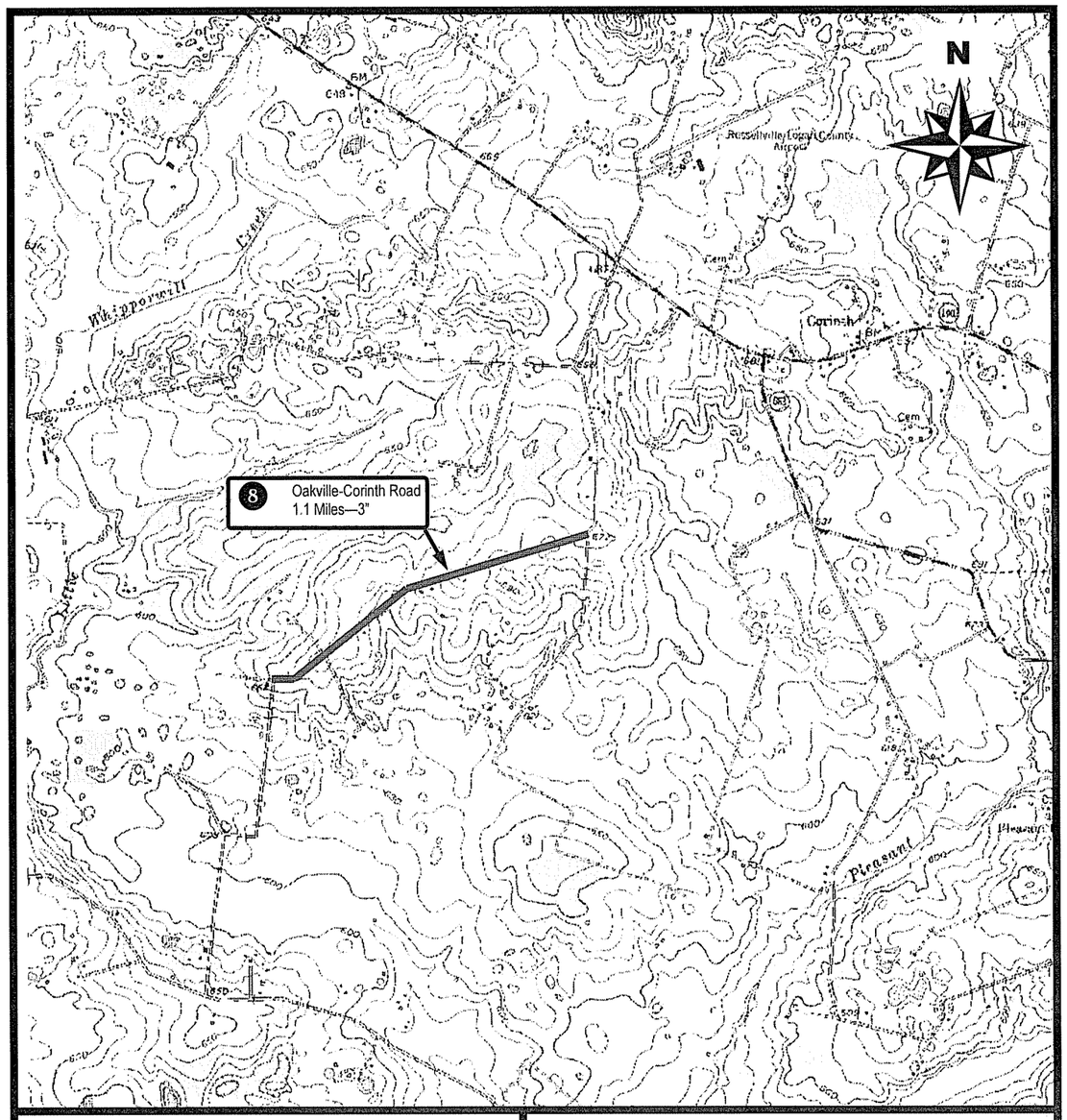
Guthrie, Kentucky

East Logan Water District

2006 Phase 2 System Upgrade Project

US Highway 68 @ South Union

Basemap:	Scale:	Exhibit:
Auburn & South Union Quads	As Noted	6



Legend

Proposed Water Line

Proposed Tank

Proposed Pump Station/Valve Vault

McGHEE ENGINEERING, INC.

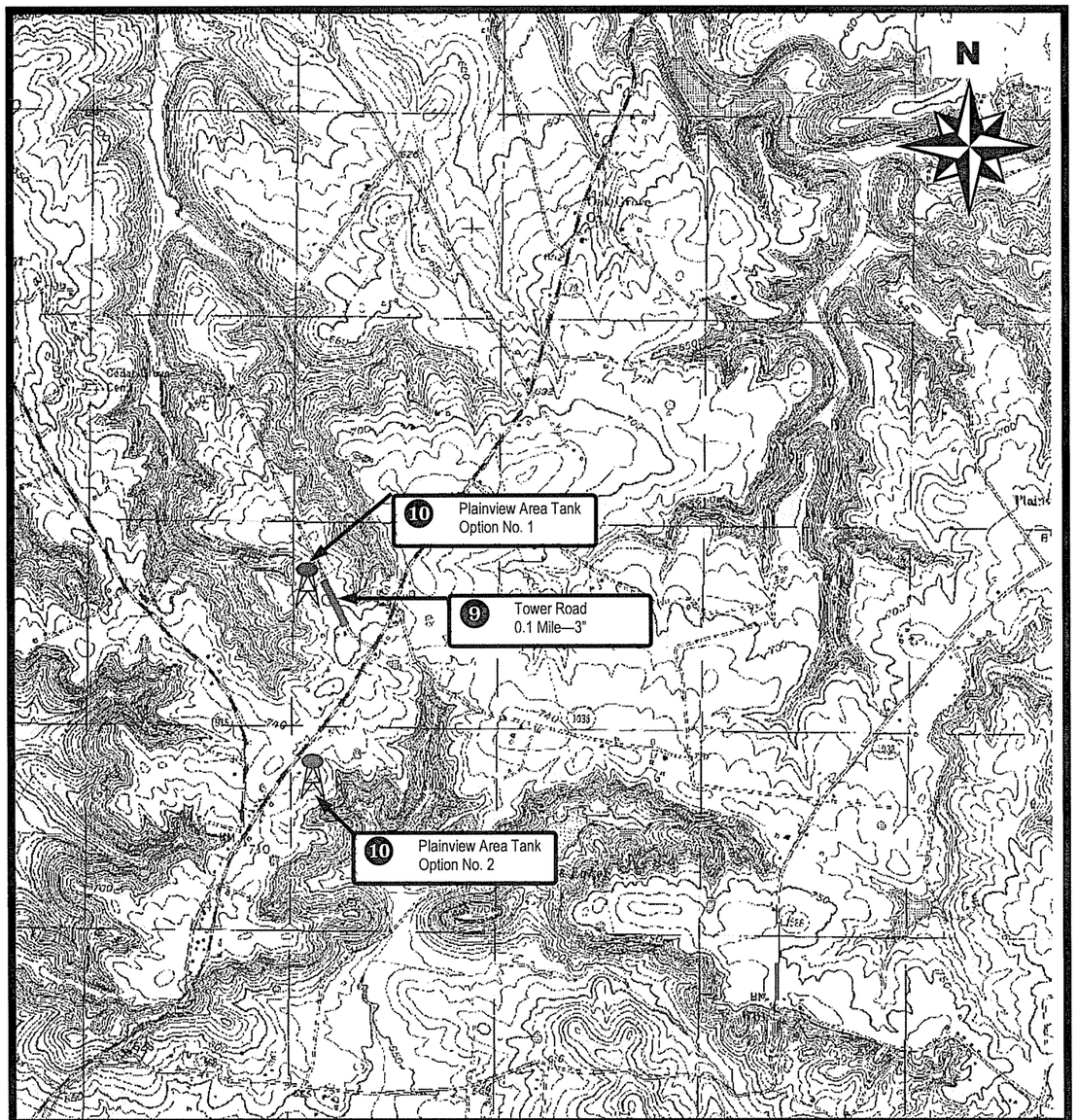
Guthrie, Kentucky

East Logan Water District

2006 Phase 2 System Upgrade Project

Oakville-Corinth Road

Basemap:	Scale:	Exhibit:
Dennis Quadrangle	As Noted	7



Legend

Proposed Water Line

Proposed Tank

Proposed Pump Station/Valve Vault

McGHEE ENGINEERING, INC.

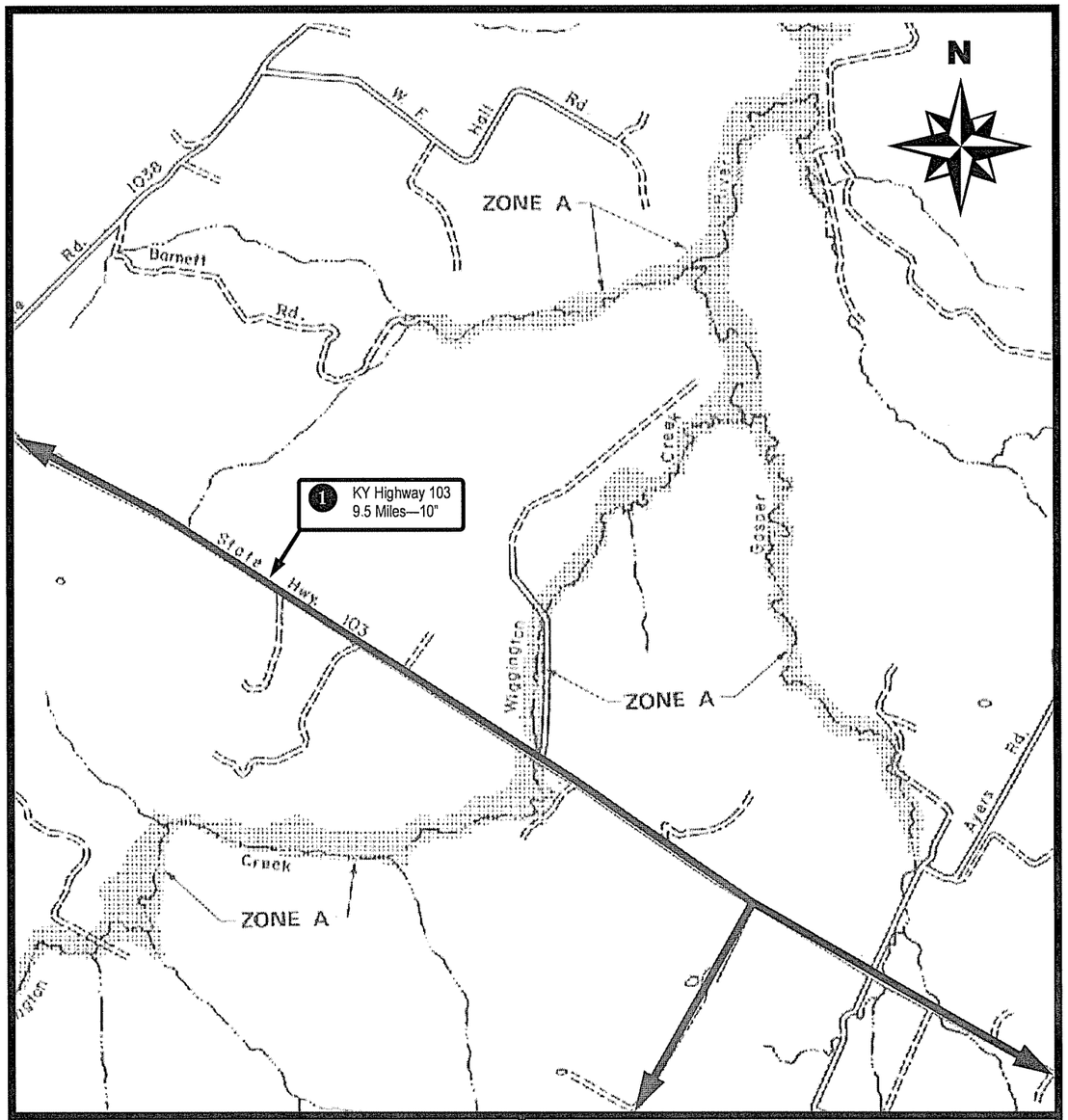
Guthrie, Kentucky

East Logan Water District

2006 Phase 2 System Upgrade Project

Tower Road & Plainview Water Tank

Basemap:	Scale:	Exhibit:
Homer Quadrangle	As Noted	8



Legend

Proposed Water Line

Proposed Tank

Proposed Pump Station/Valve Vault

McGHEE ENGINEERING, INC.

Guthrie, Kentucky

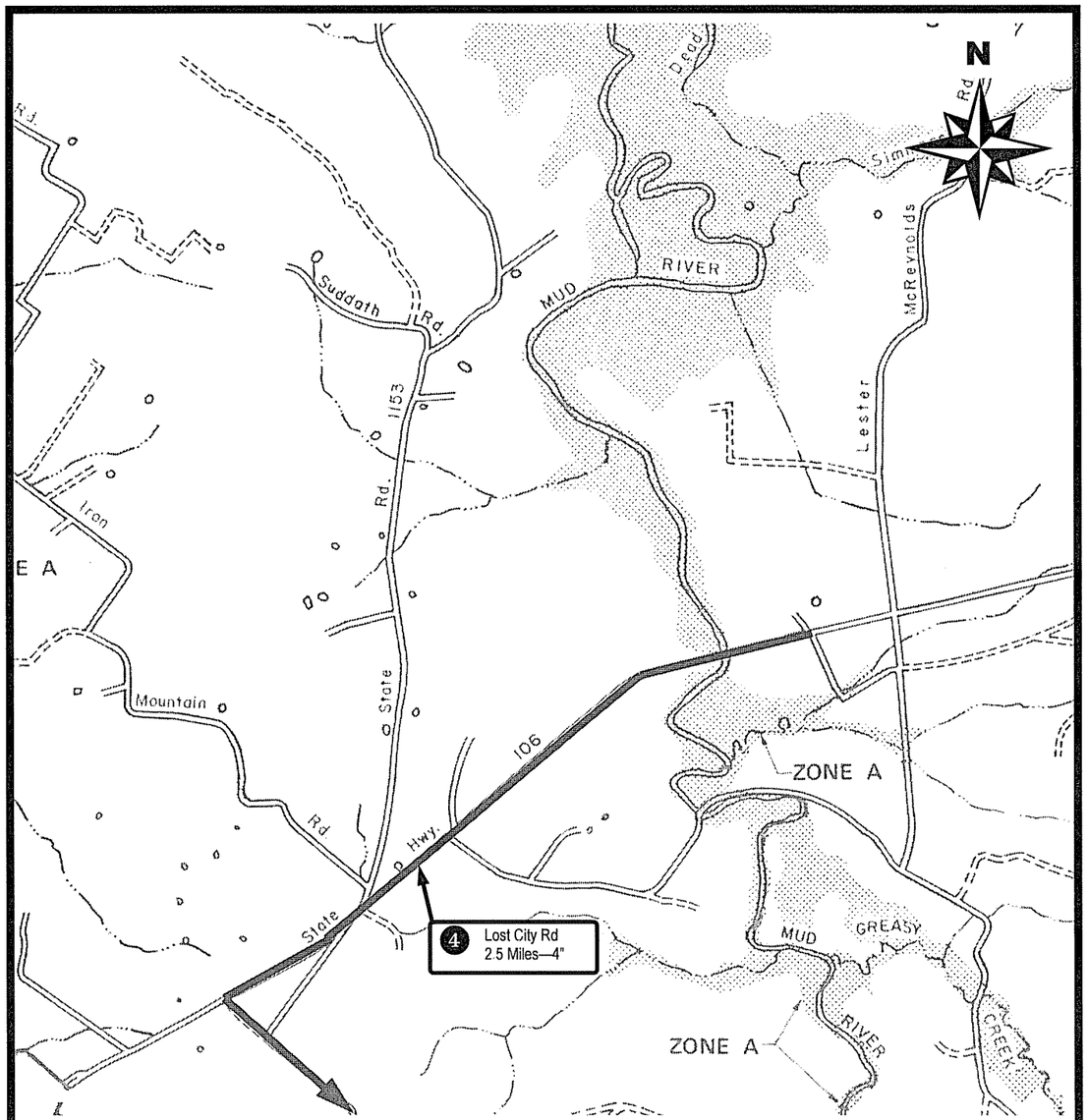
East Logan Water District

2006 Phase 2 System Upgrade Project

FLOOD ZONE VICINITY MAP

KY Highway 103

HUD Flood Map:	Scale:	Exhibit:
Panel 210341-0004 A	As Noted	9



Legend

Proposed Water Line

Proposed Tank

Proposed Pump Station/Valve Vault

McGHEE ENGINEERING, INC.

Guthrie, Kentucky

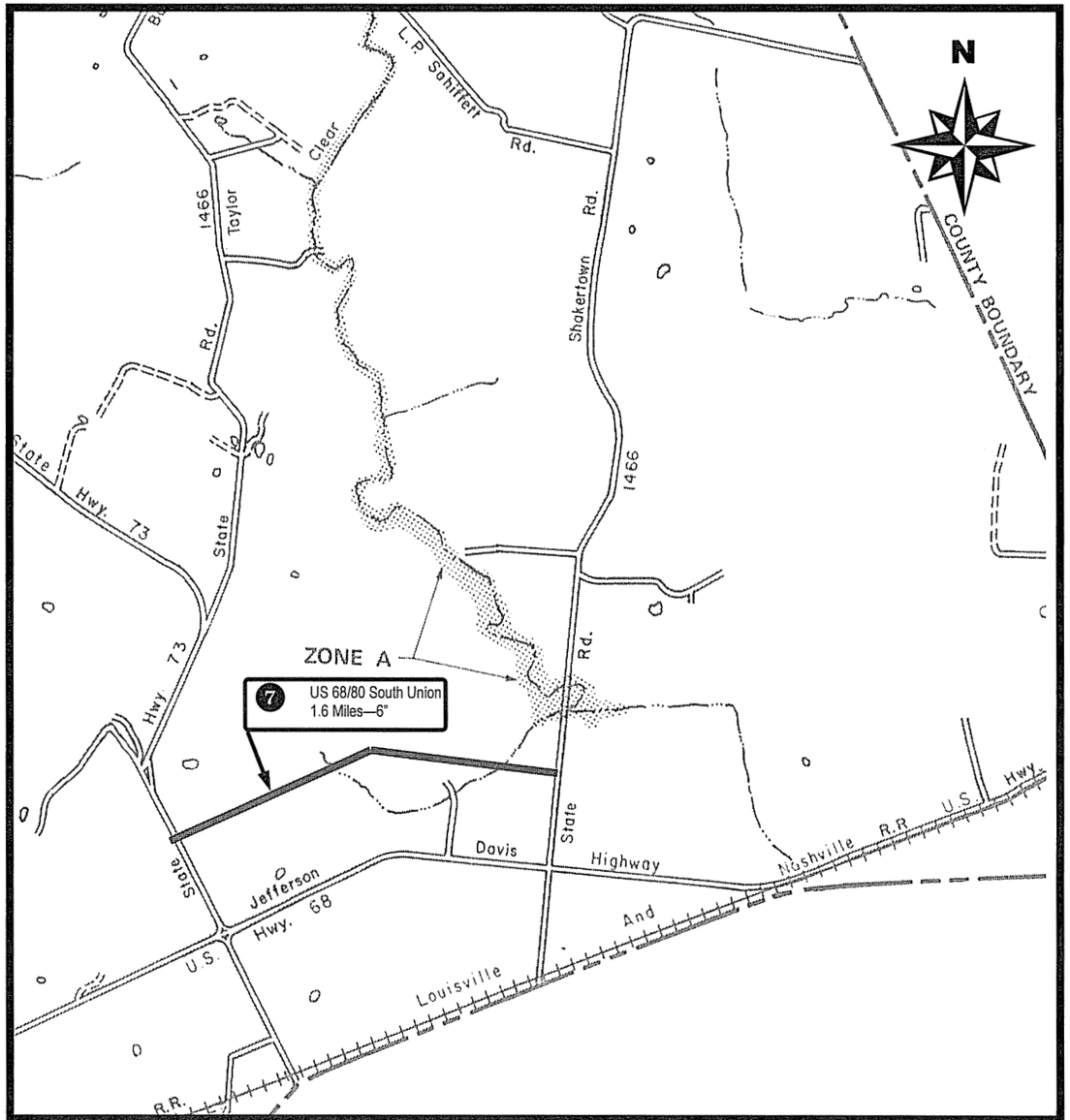
East Logan Water District

2006 Phase 2 System Upgrade Project

FLOOD ZONE VICINITY MAP

Lost City Road & KY Highway 106

HUD Flood Map:	Scale:	Exhibit:
Panel 210341-0001 A	As Noted	10



Legend

Proposed Water Line

Proposed Tank

Proposed Pump Station/Valve Vault

McGHEE ENGINEERING, INC.

Guthrie, Kentucky

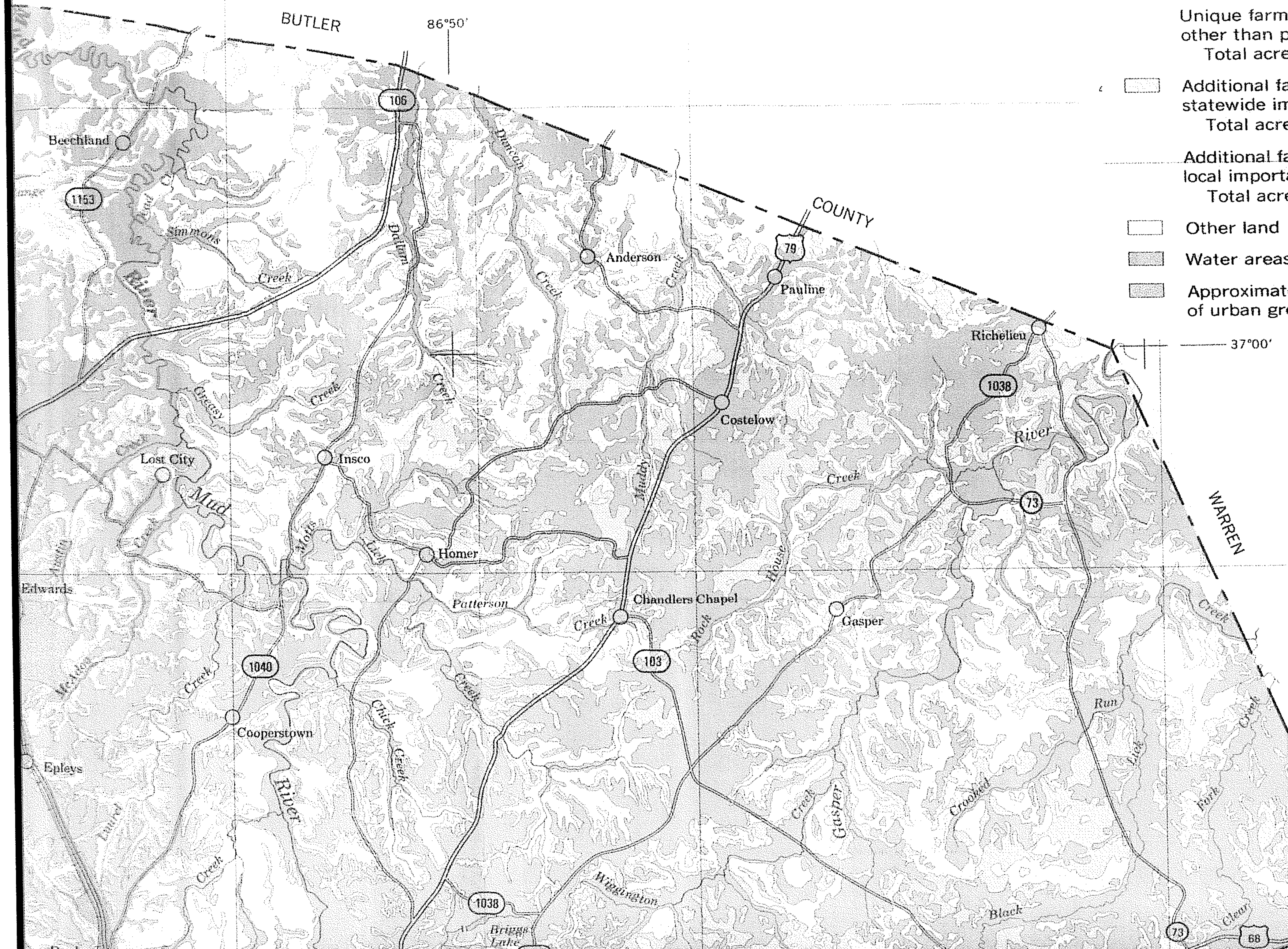
East Logan Water District

2006 Phase 2 System Upgrade Project

FLOOD ZONE VICINITY MAP

US Highway 68 @ South Union

HUD Flood Map:	Scale:	Exhibit:
Panel 210341-0004 A	As Noted	11



LEGEND

Prime farmland
Total acres - 194,000

Unique farmland, other than prime
Total acres - none reported

Additional farmland of statewide importance
Total acres - 53,000

Additional farmland of local importance
Total acres - none reported

Other land

Water areas

Approximate limits of urban growth

N

McGHEE ENGINEERING, INC.

Guthrie, Kentucky

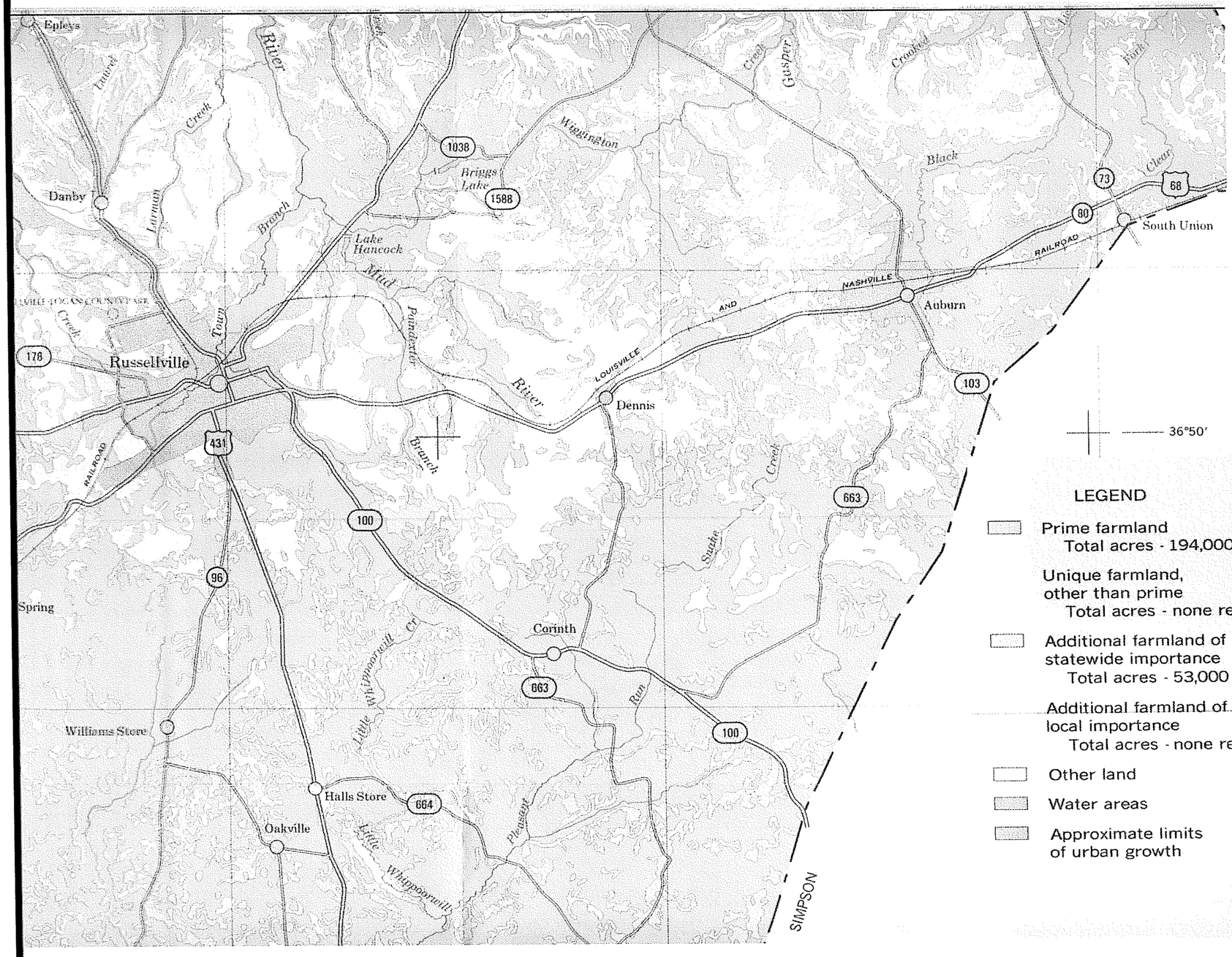
East Logan Water District

2006 Phase 2 System Upgrade Project

IMPORTANT FARMLANDS

Northeastern Logan Area

Basemap:	Scale:	Exhibit:
USDA: Logan County	As Noted	12



N

LEGEND

- Prime farmland
  Total acres - 194,000
- Unique farmland, other than prime
  Total acres - none reported
- Additional farmland of statewide importance
  Total acres - 53,000
- Additional farmland of local importance
  Total acres - none reported
- Other land
- Water areas
- Approximate limits of urban growth

McGHEE ENGINEERING, INC.
Guthrie, Kentucky

East Logan Water District
2006 Phase 2 System Upgrade Project
IMPORTANT FARMLANDS
Southeastern Logan Area

Basemap:	Scale:	Exhibit:
USDA: Logan County	As Noted	13

Appendix A

Kentucky State Clearinghouse Comments

Ernie Fletcher
GOVERNOR

GOVERNOR'S OFFICE FOR LOCAL DEVELOPMENT
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.kentucky.gov

Steve Robertson
COMMISSIONER

February 21, 2007

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

RE: East Logan Water District Phase II System Upgrade Project

SAI#: KY20051209-1223

Dear Mr. Wilcutt:

Pursuant to your request, the State Clearinghouse will update its evaluation of SAI# **KY20051209-1223**. The State Clearinghouse has contacted appropriate state agencies and determined its previous comments regarding this proposal.

Please consider this correspondence as official notification that the State Clearinghouse is reaffirming its previous correspondence. This endorsement remains valid for a period of one (1) year from the date of this letter.

If you have any questions regarding this matter, please feel free to contact the State Clearinghouse at 502-573-2382.

Sincerely,

Lee Nalley
Kentucky State Clearinghouse

Attachments
CC: Barren River ADD
KIA

OFFICE OF THE GOVERNOR
GOVERNOR'S OFFICE FOR LOCAL DEVELOPMENT

Ernie Fletcher
Governor

1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601
Phone (502) 573-2382
Fax (502) 573-2939
Toll Free (800) 346-5606
TDD (800) 247-2510
www.gold.ky.gov
www.kentucky.gov

Ellen Williams
Commissioner

February 9, 2006

Mr. C. K. Hanks
East Logan Water District
P.O. BOX 715
Auburn, Kentucky 42206

RE: East Logan Water District Phase 2 System Upgrade Project
CFDA# KIA
SAI# KY20051209-1223

Dear Mr. Hanks:

ADDENDUM

This is in regards to the above referenced project, amending to include the addition of a new 250,000 gallon elevated tank in the Plainview Area. Due to the fact, the Heritage Council has altered their comments to include the need for an archaeological survey of the tank site. Natural Resources comments remain the same.

The comments received from other agencies during the State Clearinghouse previous evaluation have been attached to this correspondence. If you have any questions regarding this matter, please feel free to contact the State Clearinghouse at 502-573-2382.

Sincerely,

Ronald W. Cook
Kentucky State Clearinghouse

Attachment
CC: Barren River ADD
KIA
Chris Wilcutt, McGhee Engineering

ERNIE FLETCHER
GOVERNOR

GOVERNOR'S OFFICE FOR LOCAL DEVELOPMENT
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.kentucky.gov

ELLEN WILLIAMS
COMMISSIONER

January 19, 2006

C.K. HANKS
EAST LOGAN WATER DISTRICT
AUBURN, KY 42206

RE: EAST LOGAN WATER DISTRICT PHASE 2 SYSTEM UPGRADE PROJECT

SAI# KY20051209-1223

Dear Mr. HANKS:

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 of 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,

Ronald W. Cook

Ronald W. Cook
Kentucky State Clearinghouse

Attachments
Cc: Barren River ADD
KIA

The Natural Resources has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

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 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 #KY200512091223) when submitting plans and specifications.

This project is consistent with the Logan 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 the proposed project is not located in a floodplain area. Therefore, a floodplain construction permit is not required for this project.

The proposed project consists of the upgrade and enlargement of waterlines and enhancement of system monitoring, throughout the service area. Completion of this project will proved improved water service to 200 households and proved new water service to 10 households. There is adequate capacity at the Logan Todd Regional Water Treatment Plant to supply the project area. However, final plans and specifications are subject to review by the Division of Water, based on sanitary features of the design.

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 Labor Cabinet has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

PW RATES MAY APPLY-CONTACT KY DEPT OF LABOR AT 502-564-3070

The Transportation has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

Moore (D3), Jeff: This office has reviewed the project pertaining to our district. Please alert the applicants that if work is done for these projects on the right of way of state maintained roads that a permit will need to be secured from our District Permits Engineer (Daryl Price @ 270.746.7898)

The Heritage Council has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

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

The lines do not require an archaeological survey, however, the lines outside of highway right of way must be surveyed by a professional archaeologist to determine if sites eligible for listing in the National Register of Historic Places will be affected by the undertaking. Where a given project area or portions thereof have been disturbed by prior construction, the applicant may file documentation of that disturbance with the State Historic Preservation Officer and may request an opinion concerning the need of an archaeological survey. The State Historic Preservation Officer must review and approve the survey report.

We feel that an archaeological survey should be conducted by a professional archaeologist of the proposed water tank tract and any access road to determine if significant archaeological sites might be impacted. The archaeological report should be submitted for our review and approval. Should the tank tract be disturbed, the applicant can send a letter and photographs to the Kentucky Heritage Council requesting that the survey be waived. (re-sent to HC on 2/6/06 for the addition of the tank)

ERNIE FLETCHER
GOVERNOR

GOVERNOR'S OFFICE FOR LOCAL DEVELOPMENT
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.kentucky.gov

ELLEN WILLIAMS
COMMISSIONER

January 19, 2006

C.K. HANKS
EAST LOGAN WATER DISTRICT
AUBURN, KY 42206

RE: EAST LOGAN WATER DISTRICT PHASE 2 SYSTEM UPGRADE PROJECT

SAI# KY20051209-1223

Dear Mr. HANKS:

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 of 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,

Ronald W. Cook
Kentucky State Clearinghouse

Attachments
Cc: Barren River ADD
KIA

The Natural Resources has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

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 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 #KY200512091223) when submitting plans and specifications.

This project is consistent with the Logan 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 the proposed project is not located in a floodplain area. Therefore, a floodplain construction permit is not required for this project.

The proposed project consists of the upgrade and enlargement of waterlines and enhancement of system monitoring, throughout the service area. Completion of this project will proved improved water service to 200 households and proved new water service to 10 household. There is adequate capacity at the Logan Todd Regional Water Treatment Plant to supply the project area. However, final plans and specifications are subject to review by the Division of Water, based on sanitary features of the design.

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 Labor Cabinet has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

PW RATES MAY APPLY-CONTACT KY DEPT OF LABOR AT 502-564-3070

The Transportation has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

Moore (D3), Jeff: This office has reviewed the project pertaining to our district. Please alert the applicants that if work is done for these projects on the right of way of state maintained roads that a permit will need to be secured from our District Permits Engineer (Daryl Price @ 270.746.7898)

The Heritage Council has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

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

The lines do not require an archaeological survey, however, the lines outside of highway right of way must be surveyed by a professional archaeologist to determine if sites eligible for listing in the National Register of Historic Places will be affected by the undertaking. Where a given project area or portions thereof have been disturbed by prior construction, the applicant may file documentation of that disturbance with the State Historic Preservation Officer and may request an opinion concerning the need of an archaeological survey. The State Historic Preservation Officer must review and approve the survey report.

OFFICE OF THE GOVERNOR
GOVERNOR'S OFFICE FOR LOCAL DEVELOPMENT

Ernie Fletcher
Governor

1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601
Phone (502) 573-2382
Fax (502) 573-2939
Toll Free (800) 346-5606
TDD (800) 247-2510
www.gold.ky.gov
www.kentucky.gov

Ellen Williams
Commissioner

February 9, 2006

Mr. C. K. Hanks
East Logan Water District
P.O. BOX 715
Auburn, Kentucky 42206

RE: East Logan Water District Phase 2 System Upgrade Project
CFDA# KIA
SAI# KY20051209-1223

Dear Mr. Hanks:

ADDENDUM

This is in regards to the above referenced project, amending to include the addition of a new 250,000 gallon elevated tank in the Plainview Area. Due to the fact, the Heritage Council has altered their comments to include the need for an archaeological survey of the tank site. Natural Resources comments remain the same.

The comments received from other agencies during the State Clearinghouse previous evaluation have been attached to this correspondence. If you have any questions regarding this matter, please feel free to contact the State Clearinghouse at 502-573-2382.

Sincerely,

Ronald W. Cook
Kentucky State Clearinghouse

Attachment
CC: Barren River ADD
KIA
Chris Wilcutt, McGhee Engineering

The Natural Resources has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

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 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 #KY200512091223) when submitting plans and specifications.

This project is consistent with the Logan 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 the proposed project is not located in a floodplain area. Therefore, a floodplain construction permit is not required for this project.

The proposed project consists of the upgrade and enlargement of waterlines and enhancement of system monitoring, throughout the service area. Completion of this project will proved improved water service to 200 households and proved new water service to 10 households. There is adequate capacity at the Logan Todd Regional Water Treatment Plant to supply the project area. However, final plans and specifications are subject to review by the Division of Water, based on sanitary features of the design.

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 Labor Cabinet has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

PW RATES MAY APPLY-CONTACT KY DEPT OF LABOR AT 502-564-3070

The Transportation has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

Moore (D3), Jeff: This office has reviewed the project pertaining to our district. Please alert the applicants that if work is done for these projects on the right of way of state maintained roads that a permit will need to be secured from our District Permits Engineer (Daryl Price @ 270.746.7898)

The Heritage Council has made the following advisory comment pertaining to State Application Identifier Number KY200512091223

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

The lines do not require an archaeological survey, however, the lines outside of highway right of way must be surveyed by a professional archaeologist to determine if sites eligible for listing in the National Register of Historic Places will be affected by the undertaking. Where a given project area or portions thereof have been disturbed by prior construction, the applicant may file documentation of that disturbance with the State Historic Preservation Officer and may request an opinion concerning the need of an archaeological survey. The State Historic Preservation Officer must review and approve the survey report.

We feel that an archaeological survey should be conducted by a professional archaeologist of the proposed water tank tract and any access road to determine if significant archaeological sites might be impacted. The archaeological report should be submitted for our review and approval. Should the tank tract be disturbed, the applicant can send a letter and photographs to the Kentucky Heritage Council requesting that the survey be waived. (re-sent to HC on 2/6/06 for the addition of the tank)

Appendix B

FmHA Summary/Addendum (KY Guide 7)

KENTUCKY GUIDE 7
May 1998

SUMMARY/ADDENDUM

TO

PRELIMINARY ENGINEERING REPORT

Dated July 1, 2006

FOR THE

East Logan Water District

Phase II Water System Upgrade Project
(Name of Water Facility Project)

Applicant Contact Person	Mike McGhee, P.E.
Applicant Phone Number	(270) 483-9985
Applicant Tax ID Number (TIN)	61-0994079

In order to avoid unnecessary delays in application processing the applicant and its consulting engineer should prepare a summary of the preliminary engineering report in accordance with this Guide. Feasibility review and grant determinations may be processed more accurately and more rapidly if the Summary/Addendum is submitted simultaneously with the preliminary engineering report, or as soon thereafter as possible.

I. General

Proposed Project: Provide a brief description of the proposed project. In addition to this summary, the Applicant/engineer should submit a project map of the service area showing the following:

The East Logan Water District (ELWD) is comprised of approximately 250 miles of water line. ELWD serves approximately 2,646 customers, which are almost entirely rural residences. The District purchases all of its treated water from the Logan Todd Regional Water Commission. Average daily usage is currently at 500,000 gpd. The ELWD is the largest water system in Logan County both in terms of customers and geographic area covering over a third of Logan County. Almost all roads within the District boundary have water service, with only short extensions needed from time to time to accommodate a new development. The main problems that have faced the District are low pressure in certain areas of the system, due to growth, and installing larger or better quality lines for improved hydraulic performance. These problems will be alleviated by a planned system extension project. The proposed project involves construction of nearly 21 miles of waterline on nine roadways. All of these lines are being built to improve hydraulic performance of the existing distribution system by either replacing defective pipe or upgrading line sizes on strained pipelines. The Plainview area of north central Logan County experiences low pressure during high demand periods. This problem will be corrected by the construction of a new 250,000-gallon elevated water tank. Other low-pressure areas will be assisted by building interconnecting lines to complete hydraulic circuits or "loops". The loops will also improve the water quality by cutting down on the stagnant water in dead-end lines. Also included in the project are the addition of master meter stations, additional telemetry equipment, radio read meter conversion, meter reading equipment, and GIS hardware/software, all to allow for the monitoring and control of the system in greater detail. **The proposed project is referred to as the Phase II Water System Upgrade Project, and the total estimated project cost is $3,600,000.**

II. FACILITY CHARACTERISTICS OF EXISTING WATER SYSTEM

A. Water Source: Describe adequacy of source (quality and quantity). Include an explanation of raw water source, raw water intake structure, treatment plant capacity, and current level of production (WTP). Also describe the adequacy of Water Purchase Contract if applicable.

The East Logan Water District purchases all of its water from the Logan Todd Regional Water Commission (LTRWC). LTRWC will continue to be the exclusive source of treated water for the entire project. The LTRWC plant in Guthrie is rated at 10.0 MGD, and it is currently operating at less than 50% capacity. Raw Water is obtained from the Cumberland River in Clarksville, Tennessee. Sufficient treatment capacity exists at the Guthrie plant for the proposed improvements.

If the applicant purchases water:

Seller(s):

1. Logan Todd Regional Water Commission

Price:

Usage Block	Wholesale Rate Per 1,000 Gallons
First 1,000 Gallons	$2.91
All Over 1,000 Gallons	$2.91

B. Water Storage:

Type: Ground Storage Tank __X__. Elevated Tank _____.
Standpipe _____ Other

Number of Storage Structures 3

Total Storage Volume Capacity 1,126,000 gallons

Date Storage Tank(s) Constructed 2003, 1999 and 1991

C. Water Distribution System:

Pipe Material PVC

Lineal Feet of Pipe: 2" Diameter and smaller: 0; 3": 316,900;
4": 488,300; 6": 495,300; 8" 23,700;

Date(s) Water Lines Constructed varies

Number and Capacity of Pump Station(s): one pump stations rated at 150 gpm

D. Condition of Existing Water System:

Briefly describe the condition and suitability for continued use of facility now owned by the applicant. Include any major renovation that will be needed within five to ten years.

The system is well managed and generally in good repair. Although isolated areas of substandard pipe may be replaced from time to time, no critical renovations are anticipated in the near future. Over the past several years, the District has aggressively pursued various extension projects to meet the needs of rural residences using superior materials to insure an adequate working system and leaving primarily no areas unserved.

E. Percentage of Water Loss in the Existing System: 24.99% (Per '05 PSC Report)

Present Estimated Market Value of Existing System *: $ 5,551,533
*NOTE = Based on Depreciated Value in the 2005 Financial Statements

III. EXISTING LONG-TERM INDEBTEDNESS

A. List of Bonds and Notes: (Information from 2005 Audit & PSC Report)

Date of Issue	Bond/Note Holder	Principal Balance	Payment Date	Bond Type	Amount on Deposit in Reserve
1989	KIA	$ 352,500	2010	Note	
1990	RD	$ 385,000	2030	Rev	
1991	KIA	$ 175,000	2011	Note	
1995	RD	$ 603,500	2035	Rev	
2002	RD	$ 736,000	2042	Rev	
Total		$ 2,252,000			$ 247,623

B. Principal and Interest Payments: (Information from 2005 Audit)

		Payment Year 2006		Payment Year 2007		Payment Year 2008	
Date of Issue	Bond/Note Holder	Principal Payment	Interest Payment	Principal Payment	Interest Payment	Principal Payment	Interest Payment
1989	KIA	$ 2,500	$ 12,629	$ 2,500	$ 13,301	$ 5,000	$ 13,324
1990	RD (5%)	*	$ 9,625	$ 6,000	$ 18,950	$ 7,000	$ 18,600
1991	KIA	$ 30,000	$ 7,000	$ 30,000	$ 5,800	$ 30,000	$ 4,600
1995	RD (4.875%)	*	$ 14,710	$ 9,000	$ 28,980	$ 10,000	$ 28,500
2002	RD (4.25%)	*	$ 15,640	$ 8,000	$ 30,940	$ 8,000	$ 30,600
Total		$ 32,500	$ 59,604	$ 55,500	$ 97,971	$ 60,000	$ 95,624

Note: Current Portion was paid in December 2005, per PSC Audit notes in Debt Maturities.

IV. EXISTING SHORT-TERM INDEBTEDNESS

A. List of All Short Term Debts:

Lender or Lessor	Date of Issue (Mo. & Year)	Principal Balance	Purpose	Payment Date	Principal & Interest Payment (P&I)	Date to Be Paid In Full
NA	NA	$ -		NA	$0	

V. LAND AND RIGHTS - EXISTING SYSTEM(S):

Number of Treatment Plant Sites	0
Number of Storage Tank Sites	3
Number of Pump Stations	1
Total Acreage	~3 acre
Purchase Price*	$21,904

*Land & ROW value per 2005 Audit

VI. NUMBER OF EXISTING USERS

A. Water Users: (per Staff data in January 2006)

Residential Size Meters (In Town)*	-
Residential Size Meters/Farmers (Out of Town)*	2,619
Commercial & Other Users (In Town)	-
Commercial & Other Users (Out of Town)	27
Total	2,646
Number of Total potential Users Living in the Service Area	700 (est.)

VII. CURRENT WATER AND SEWER CONNECTION FEES FOR EACH SIZE WATER METER CONNECTION

Meter Size	Water Connection Fee
5/8"x3/4"	$400.00
1"	$500.00
1-1/2"	$900 + Bore Cost
2"	$1,000 + Bore Cost

VIII. WATER RATES - EXISTING SYSTEM – ALL SIZES

Existing Rate Schedule: Date these rates went into effect: May 10, 2003

5/8" x ¾" Meter

First	2,000	Gallons @	$ 18.90		Minimum
Next	2,000	Gallons @	$ 8.95		per 1,000 Gallons
Next	2,000	Gallons @	$ 8.56		per 1,000 Gallons
Next	4,000	Gallons @	$ 7.45		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.27		per 1,000 Gallons

1" Meter

First	4,000	Gallons @	$ 36.79		Minimum
Next	2,000	Gallons @	$ 8.56		per 1,000 Gallons
Next	4,000	Gallons @	$ 7.45		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.27		per 1,000 Gallons

1½" Meter

First	6,000	Gallons @	$ 53.91		Minimum
Next	4,000	Gallons @	$ 7.45		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.27		per 1,000 Gallons

2" Meter

First	10,000	Gallons @	$ 83.70		Minimum
Over	10,000	Gallons @	$ 5.27		per 1,000 Gallons

IX. ANALYSIS OF ACTUAL WATER USAGE - EXISTING SYSTEM - **10 MONTH PERIOD**

For Period FYE 2005 *(March & November quantities unavailable).*

Meter Size	MONTHLY WATER USAGE	Average	Residential		Non-Residential	
			No. of Users	Usage	No. of Users	Usage
All Sizes	0 - Gal.	0	1,488	-	16	-
	0 - 1,000 Gal.	500	1,874	1,085,999	40	29,200
	1,000 - 2,000 Gal.	1,500	3,454	5,477,500	49	70,200
	2,000 - 3,000 Gal.	2,500	4,377	11,189,800	22	54,900
	3,000 - 4,000 Gal.	3,500	4,258	15,066,800	21	74,900
	4,000 - 5,000 Gal.	4,500	3,301	14,956,100	21	94,000
	5,000 - 6,000 Gal.	5,500	2,398	13,255,699	14	77,600
	6,000 - 7,000 Gal.	6,500	1,552	10,112,400	2	12,400
	7,000 - 8,000 Gal.	7,500	1,024	7,689,100	2	15,100
	8,000 - 9,000 Gal.	8,500	625	5,314,699	2	16,800
	9,000 - 10,000 Gal.	9,500	428	4,066,200	1	9,500
	10,000 - 11,000 Gal.	10,500	289	3,044,800	1	10,500
	11,000 - 12,000 Gal.	11,500	223	2,562,000	2	22,900
	12,000 - 13,000 Gal.	12,500	161	2,017,000	1	12,400
	13,000 - 14,000 Gal.	13,500	121	1,637,100	-	-
	14,000 - 15,000 Gal.	14,500	89	1,292,300	1	14,800
	15,000 - 16,000 Gal.	15,500	81	1,257,000	2	30,800
	16,000 - 17,000 Gal.	16,500	39	645,100	3	49,900
	17,000 - 18,000 Gal.	17,500	45	787,300	3	52,900
	18,000 - 19,000 Gal.	18,500	41	758,400	1	18,200
	19,000 - 20,000 Gal.	19,500	44	857,400	1	19,600
	20,000 - 25,000 Gal.	22,500	11	2,243,000	1	20,200
	25,000 - 30,000 Gal.	27,500	53	1,451,200	2	55,900
	over - 30,000 Gal.	64,600/102,100	149	9,880,200	34	3,445,100
		Total	26,125	116,647,097	242	4,207,800
	Average Monthly "Meter Setting" Count		2,613		24	
	Average Usage (Gallons)			4,460		17,390

Total Water Purchased per '05 PSC Report 196,996,000 Gallons

Total Water Sold per 10 Month Forecast 120,854,897 Gallons

Total Water Sold per 12 Months Interpolated 145,025,876 Gallons

Total Water Sold per '05 PSC Report *145,609,000* Gallons

X. FACILITY CHARACTERISTICS OF PROPOSED WATER SYSTEM

A. Water Source: Describe adequacy of source (quality and quantity). Include an explanation of raw water source, raw water intake structure, treatment plant capacity, and current level of production (WTP). Also describe the adequacy of Water Purchase Contract if applicable.

The recommended project provides improved water service to the existing customer base of 2,646, and assists in resolving other issues facing the District. **The project will directly improve water service to approximately 175 existing customers (reconnects) along nearly 21 miles of rural road that are currently served**. Also included will be the installation of a new 250,000 gallon elevated water storage tank, master meters and telemetry to allow the system to be operated more efficiently, and to provide more reliable service to existing and future customers of the District. The project also includes a radio read meter conversion for speedier meter reading and service leak detection, and the project will provide for GIS software and hardware to better provide detailed location of valves, meters and other appurtenances. The District will continue to purchase all of its water from the Logan Todd Regional Water Commission, which has adequate capacity to serve the new customers resulting from the proposed project.

B. Water Storage:

Type: Ground Storage Tank ____, Elevated Tank ____X____
Standpipe ____ Other _____
Number of Storage Structures ____One____
Total Storage Volume Capacity ____250,000____

C. Water Distribution System:

Pipe Material ____*PVC*____
Lineal Feet of Pipe: 10" Diameter ____50,000____ 8" ____21,500____
6" ____16,000____ 4" ____13,000____
3" ____10,200____
Number, and Capacity of Pump Station(s): ____TBD____

XI. LAND AND RIGHTS - PROPOSED WATER SYSTEM(S)

Number of Treatment Plant Sites	_____
Number of Pump Sites	TBD
Number of Other Sites (Storage Tank)	1
Total Acreage	1.0 Ac.
Purchase Price	~$10,000

XII. NUMBER OF NEW WATER USERS

Water Users:	
Residential Size Meters (In Town)*	-
Residential Size Meters/Farmers (Out of Town)*	0
Larger Users (In Town)	-
Larger Users (Out of Town)	-
Total	0
Number of total potential users living in the service area	700

XIII. PROPOSED CONNECTION FEES FOR EACH SIZE *(Note: No change anticipated)*

Meter Size	Water Connection Fee
5/8"x3/4"	$400.00
1"	$500.00
1-1/2"	$900 + Bore Cost
2"	$1,000 + Bore Cost

XIV. WATER RATES - PROPOSED

A. Proposed Rate Schedule without RUS Grant:

5/8" x ¾" Meter

First	2,000	Gallons @	$ 21.17		Minimum
Next	2,000	Gallons @	$ 10.02		per 1,000 Gallons
Next	2,000	Gallons @	$ 9.59		per 1,000 Gallons
Next	4,000	Gallons @	$ 8.34		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.90		per 1,000 Gallons

1" Meter

First	4,000	Gallons @	$ 41.20		Minimum
Next	2,000	Gallons @	$ 9.59		per 1,000 Gallons
Next	4,000	Gallons @	$ 8.34		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.90		per 1,000 Gallons

1½" Meter

First	6,000	Gallons @	$ 60.38		Minimum
Next	4,000	Gallons @	$ 8.34		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.90		per 1,000 Gallons

2" Meter

First	10,000	Gallons @	$ 93.74		Minimum
Over	10,000	Gallons @	$ 5.90		per 1,000 Gallons

B. Recommended Rate Schedule with RUS Grant:

5/8" x ¾" Meter

First	2,000	Gallons @	$ 20.41		Minimum
Next	2,000	Gallons @	$ 9.67		per 1,000 Gallons
Next	2,000	Gallons @	$ 9.24		per 1,000 Gallons
Next	4,000	Gallons @	$ 8.05		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.69		per 1,000 Gallons

1" Meter

First	4,000	Gallons @	$ 39.73		Minimum
Next	2,000	Gallons @	$ 9.24		per 1,000 Gallons
Next	4,000	Gallons @	$ 8.05		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.69		per 1,000 Gallons

1½" Meter

First	6,000	Gallons @	$ 58.22		Minimum
Next	4,000	Gallons @	$ 8.05		per 1,000 Gallons
Over	10,000	Gallons @	$ 5.69		per 1,000 Gallons

2" Meter

First	10,000	Gallons @	$ 90.40		Minimum
Over	10,000	Gallons @	$ 5.69		per 1,000 Gallons

XV. FORECAST OF WATER USAGE - INCOME - EXISTING USERS ONLY – EXISTING RATES

For Period FYE 2005 *(10 Months Only: March & November quantities unavailable).*

Meter Size	MONTHLY WATER USAGE	Residential/ Farmer					Non-Residential/ Commercial				
		No. of Cust.	Total Usage	Average Usage	Average Bill	Annual Income	No. of Cust.	Total Usage	Average Usage	Average Bill	Annual Income
All	0	1,488	-	0	$ 18.90	$ 28,123	16	-	0	$ 18.90	$ 302
	0 - 1,000	1,874	1,085,999	580	$ 18.90	$ 35,419	40	29,200	730	$ 18.90	$ 756
	1,000 - 2,000	3,454	5,477,500	1,586	$ 18.90	$ 65,281	49	70,200	1,433	$ 18.90	$ 926
	2,000 - 3,000	4,377	11,189,800	2,556	$ 23.88	$ 104,526	22	54,900	2,495	$ 23.33	$ 513
	3,000 - 4,000	4,258	15,066,800	3,538	$ 32.67	$ 139,106	21	74,900	3,567	$ 32.92	$ 691
	4,000 - 5,000	3,301	14,956,100	4,531	$ 41.34	$ 136,475	21	94,000	4,476	$ 40.88	$ 858
	5,000 - 6,000	2,398	13,255,699	5,528	$ 49.88	$ 119,608	14	77,600	5,543	$ 50.01	$ 700
	6,000 - 7,000	1,552	10,112,400	6,516	$ 57.76	$ 89,647	2	12,400	6,200	$ 55.41	$ 111
	7,000 - 8,000	1,024	7,689,100	7,509	$ 65.16	$ 66,725	2	15,100	7,550	$ 65.47	$ 131
	8,000 - 9,000	625	5,314,699	8,504	$ 72.57	$ 45,357	2	16,800	8,400	$ 71.80	$ 144
	9,000 - 10,000	428	4,066,200	9,500	$ 80.00	$ 34,239	1	9,500	9,500	$ 80.00	$ 80
	10,000 - 11,000	289	3,044,800	10,536	$ 86.54	$ 25,011	1	10,500	10,500	$ 86.36	$ 86
	11,000 - 12,000	223	2,562,000	11,489	$ 91.57	$ 20,419	2	22,900	11,450	$ 91.36	$ 183
	12,000 - 13,000	161	2,017,000	12,528	$ 97.04	$ 15,624	1	12,400	12,400	$ 96.37	$ 96
	13,000 - 14,000	121	1,637,100	13,530	$ 102.32	$ 12,381	-	-	0	$ -	$ -
	14,000 - 15,000	89	1,292,300	14,520	$ 107.54	$ 9,571	1	14,800	14,800	$ 109.02	$ 109
	15,000 - 16,000	81	1,257,000	15,519	$ 112.80	$ 9,137	2	30,800	15,400	$ 112.18	$ 224
	16,000 - 17,000	39	645,100	16,541	$ 118.19	$ 4,609	3	49,900	16,633	$ 118.68	$ 356
	17,000 - 18,000	45	787,300	17,496	$ 123.22	$ 5,545	3	52,900	17,633	$ 123.95	$ 372
	18,000 - 19,000	41	758,400	18,498	$ 128.50	$ 5,269	1	18,200	18,200	$ 126.93	$ 127
	19,000 - 20,000	44	857,400	19,486	$ 133.71	$ 5,883	1	19,600	19,600	$ 134.31	$ 134
	20,000 - 25,000	11	2,243,000	203,909	$ 1,105.62	$ 12,162	1	20,200	20,200	$ 137.47	$ 137
	25,000 - 30,000	53	1,451,200	27,381	$ 175.32	$ 9,292	2	55,900	27,950	$ 178.32	$ 357
	over - 30,000	149	9,880,200	66,310	$ 380.47	$ 56,691	34	3,445,100	101,326	$ 565.01	$ 15,288
	Sub-totals	26,125	116,647,097			$ 1,056,098	242	4,207,800			$ 22,683

Total Projected **10 Month** Revenue With Current Rates $ 1,078,782

Total Projected Annual Revenue With Current Rates - ***Interpolated*** $ 1,294,538

Actual Water Sales FY2005 $ 1,270,093

XVI. FORECAST OF WATER USAGE - INCOME - NEW USERS - EXTENSION ONLY – EXISTING RATES

Note: No new customers are expected to be added as result of the proposed project.

XVII. FORECAST OF WATER USAGE - INCOME - EXISTING & NEW USERS – RECOMMENDED GRANT RATES

Period FYE 2005 *(10 Months Only: March & November quantities unavailable).*

Meter Size	MONTHLY WATER USAGE	Residential/ Farmer					Non-Residential/ Commercial				
		No. of Cust.	Total Usage	Average Usage	Average Bill	Annual Income	No. of Cust.	Total Usage	Average Usage	Average Bill	Annual Income
All	0	1,488	-	0	$ 20.41	$ 30,370	16	-	0	$ 20.41	$ 327
	0 - 1,000	1,874	1,085,999	580	$ 20.41	$ 38,248	40	29,200	730	$ 20.41	$ 816
	1,000 - 2,000	3,454	5,477,500	1,586	$ 20.41	$ 70,496	49	70,200	1,433	$ 20.41	$ 1,000
	2,000 - 3,000	4,377	11,189,800	2,556	$ 25.79	$ 112,889	22	54,900	2,495	$ 25.20	$ 554
	3,000 - 4,000	4,258	15,066,800	3,538	$ 35.29	$ 150,252	21	74,900	3,567	$ 35.56	$ 747
	4,000 - 5,000	3,301	14,956,100	4,531	$ 43.14	$ 142,420	21	94,000	4,476	$ 42.64	$ 895
	5,000 - 6,000	2,398	13,255,699	5,528	$ 52.36	$ 125,552	14	77,600	5,543	$ 52.50	$ 735
	6,000 - 7,000	1,552	10,112,400	6,516	$ 60.87	$ 94,473	2	12,400	6,200	$ 58.33	$ 117
	7,000 - 8,000	1,024	7,689,100	7,509	$ 68.87	$ 70,519	2	15,100	7,550	$ 69.20	$ 138
	8,000 - 9,000	625	5,314,699	8,504	$ 76.87	$ 48,046	2	16,800	8,400	$ 76.04	$ 152
	9,000 - 10,000	428	4,066,200	9,500	$ 84.90	$ 36,337	1	9,500	9,500	$ 84.90	$ 85
	10,000 - 11,000	289	3,044,800	10,536	$ 91.97	$ 26,579	1	10,500	10,500	$ 91.77	$ 92
	11,000 - 12,000	223	2,562,000	11,489	$ 97.39	$ 21,718	2	22,900	11,450	$ 97.17	$ 194
	12,000 - 13,000	161	2,017,000	12,528	$ 103.30	$ 16,632	1	12,400	12,400	$ 102.58	$ 103
	13,000 - 14,000	121	1,637,100	13,530	$ 109.00	$ 13,190	-	-	0	$ 32.02	$ -
	14,000 - 15,000	89	1,292,300	14,520	$ 114.64	$ 10,203	1	14,800	14,800	$ 116.23	$ 116
	15,000 - 16,000	81	1,257,000	15,519	$ 120.32	$ 9,746	2	30,800	15,400	$ 119.65	$ 239
	16,000 - 17,000	39	645,100	16,541	$ 126.14	$ 4,919	3	49,900	16,633	$ 126.66	$ 380
	17,000 - 18,000	45	787,300	17,496	$ 131.57	$ 5,921	3	52,900	17,633	$ 132.35	$ 397
	18,000 - 19,000	41	758,400	18,498	$ 137.27	$ 5,628	1	18,200	18,200	$ 135.58	$ 136
	19,000 - 20,000	44	857,400	19,486	$ 142.90	$ 6,287	1	19,600	19,600	$ 143.54	$ 144
	20,000 - 25,000	11	2,243,000	203,909	$ 1,192.26	$ 13,115	1	20,200	20,200	$ 146.96	$ 147
	25,000 - 30,000	53	1,451,200	27,381	$ 187.82	$ 9,954	2	55,900	27,950	$ 191.06	$ 382
	over - 30,000	149	9,880,200	66,310	$ 409.32	$ 60,989	34	3,445,100	101,326	$ 608.57	$ 15,288
	Sub-totals	26,125	116,647,097			$ 1,124,483	242	4,207,800			$ 23,184

*Total Projected **10 Month** Revenue With Proposed Rates & Users* $ 1,147,667

Total Projected Annual Revenue With Proposed Rates - ***Interpolated*** **$ 1,377,201**

Actual Water Sales FY2005 $ 1,270,093

Additional Revenue from Rate Increase $ 107,108 (~8% Increase in Water Sales)

XVIII. CURRENT OPERATING BUDGET - (FYE December 31, 2005 – Based on 2005 Audit & PSC Report)

A.	**Operating Income**	
	Water Sales	$ 1,270,093
	Other Revenues	$ 46,902
	Total Operating Income	$ 1,316,995
B.	**Operation and Maintenance Expenses:**	
	Purchased Water	$ 567,439
	Management	$ 219,354
	Transmission and O&M Expense	$ 108,904
	Insurance	$ 8,439
	Utilities	$ 6,992
	Professional & Contracted Fees	$ 18,153
	Office Supplies and Collection Expense	$ 24,555
	Miscellaneous Expense	$ 14,043
	Total Operating Expenses	$ 967,879
	Net Operating Income	$ 349,116
C.	**Non-Operating Income:**	
	Interests on Deposits	$ 43,039
	Other	$ 1,280
	Total Non-Operating Income	$ 44,319
D.	**Net Income**	$ 393,435
E.	**Debt Repayment**	
	RUS Interest	$ 121,985
	RUS Principal	$ 43,500
	Non-RUS Interest	$ 10,757
	Non-RUS Principal	$ 35,500
	Total Debt Repayment	$ 211,742
F.	**Balance Available for Coverage and Depreciation**	$ 181,693

XIX. PROPOSED OPERATING BUDGET - EXISTING & NEW USERS – RECOMMENDED WATER RATES

(1st Full Year of Operation) Year Ending 2007 .

A.	**Operating Income**		
	Water Sales	$ 1,377,201	(1)
	Other Revenues	$ 46,902	
	Total Operating Income	$ 1,424,103	
B.	**Operation and Maintenance Expenses:**		
	Purchased Water	$ 635,688	(2)
	Management	$ 225,954	(3)
	Transmission and O&M Expense	$ 112,204	(3)
	Insurance	$ 8,739	(3)
	Utilities	$ 7,192	(3)
	Professional & Contracted Fees	$ 18,653	(3)
	Office Supplies and Collection Expense	$ 25,255	(3)
	Miscellaneous Expense	$ 14,443	(3)
	Total Operating Expenses	$ 1,048,128	
	Net Operating Income	$ 375,975	
C.	**Non-Operating Income:**		
	Interests on Deposits	$ 43,039	
	Other	$ 1,280	
	Total Non-Operating Income	$ 44,319	
D.	**Net Income**	$ 420,294	
E.	**Debt Repayment**		
	RUS Interest (Bonds before 2006)	$ 78,870	(4)
	RUS Principal (Bonds before 2006)	$ 23,000	(4)
	Non-RUS Interest	$ 61,875	(4)
	Non-RUS Principal	$ 16,975	(4)
	RUS Interest (2007 Bonds - Phase II)	$ 19,100	(4)
	RUS Principal (2007 Bonds - Phase II)	$ 32,500	(4)
	Total Debt Repayment	$ 232,320	
F.	**Balance Available for Coverage and Depreciation**	$ 187,974	

Notes.

(1) From Table XVII, based on Projected Water Sales at recommended rates.
(2) Based on 12% nominal increase due to wholesale increase of $2.91/1,000 gallons to $3.26/1,000 gallons.
(3) Based on 3% nominal increase due to anticipated annual cost increases.
(4) Estimated Debt Service for 2007.

XX. PROPOSED OPERATING BUDGET - NEW USERS - IMPROVEMENTS ONLY – EXISTING WATER RATES

(1st Full Year of Operation) Year Ending 2007 .

A.	**Operating Income**		
	Water Sales	$ -	(1)
	Other Revenues	$ -	(1)
	Total Operating Income	$ -	
B.	**Operation and Maintenance Expenses:**		
	Purchased Water	$0.00	(2)
	Management	$6,600.00	(3)
	Transmission and O&M Expense	$3,300.00	(3)
	Insurance	$300.00	(3)
	Utilities	$200.00	(3)
	Professional & Contracted Fees	$500.00	(3)
	Office Supplies and Collection Expense	$700.00	(3)
	Miscellaneous Expense	$400.00	(3)
	Total Operating Expenses	$ 12,000	
	Net Operating Income	$ (12,000)	
C.	**Non-Operating Income:**		
	Interests on Deposits	$ -	
	Other	$ -	
	Total Non-Operating Income	$ -	
D.	**Net Income**	$ (12,000)	
E.	**Debt Repayment**		
	RUS Interest (Bonds before 2006)	$ -	
	RUS Principal (Bonds before 2006)	$ -	
	Non-RUS Interest	$ -	
	Non-RUS Principal	$ -	
	RUS Interest (2007 Bonds - Phase II)	$ 61,875	(4)
	RUS Principal (2007 Bonds - Phase II)	$ 16,975	(4)
	Total Debt Repayment	$ 78,850	
F.	**Balance Available for Coverage and Depreciation**	$ (90,850)	

Notes:

(1) Based on 0 new customers.
(2) Based on 0 new customers.
(3) Based on 3% nominal increase due to anticipated annual cost increases.
(4) Based on a $1,500,000 RUS Loan at 4.125% and 38 payments.

XXI. ESTIMATED PROJECT COST - WATER

Development	$ 2,800,000.00
Land and Rights	$ 25,000.00
Legal & Administration	$ 50,000.00
Engineering & Inspection	$ 319,000.00
Interest	$ 36,000.00
Contingencies	$ 280,000.00
Initial Operating and Maintenance	
Other (Prelim. Eng. & Env. Asses.)	$ 90,000.00
TOTAL	$ 3,600,000.00

XXII. PROPOSED PROJECT FUNDING

Applicant - User Connection Fees	$ -
Other Applicant Contribution	$ 300,000.00
RUS Loan	$ 1,500,000.00
RUS Grant	$ 900,000.00
State Appropriation	$ 800,000.00
Federal Appropriation	$ -
Other (Logan Todd upgrade portion)	$ 100,000.00
Other (Specify)	$ -
TOTAL	$ 3,600,000.00

Final Engineering Report

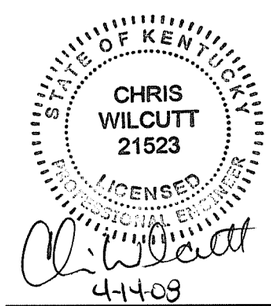
prepared for the

East Logan Water District

Phase 2 System Upgrade Project

prepared by

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



Final Engineering Report
Table of Contents
East Logan Water District's Phase 2 System Upgrade Project

Tables

Exhibits

Appendix

1.0 INTRODUCTION

The East Logan Water District (ELWD) was formed by Logan County Court order in 1972 to supply potable water to residents of north-eastern and the eastern portions of Logan County, Kentucky. The District is controlled by a Board of Directors, which consists of a Chairman and two Directors. The District is regulated by the Kentucky Public Service Commission.

The East Logan Water District is comprised of approximately 250 miles of water line and three ground level water storage tanks with a total capacity of 1,126,000 gallons, all of which serves approximately 2,646 customers within their defined service area. The District currently purchases all of its treated water from the Logan Todd Regional Water Commission (LTRWC). The Commission's water treatment facility is rated at 10 million gallons per day, and their distribution system consists of nearly 85 miles of pipeline three water storage tanks totaling 3,500,000 gallons in capacity. Since going online with the Commission, the average daily usage within the East Logan system has ranged from 500,000 to 550,000 gallons per day. East Logan currently has three meter stations with the Commission, two located along US Highway 68 (Bowling Green Road) and the other along KY Highway 79 near the Russellville bypass.

East Logan is a large district, covering nearly a third of Logan County. Almost all of the roads within the District boundary have water service, with only short extensions needed from time to time to accommodate new development.

The ELWD was originally constructed in 1979. Since then, four major extensions and a number of minor extensions have taken place. USDA Rural Development has contributed funds to assist with system construction, as have the Kentucky Infrastructure Authority and the Community Development Block Grant program. 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 East Logan Water District has requested funding assistance to undertake their Phase 2 System Upgrade Project.

The proposed project includes construction of a new booster pump station to serve the Plainview Area, construction of a new "point of sale" meter station with the Logan Todd Regional water Commission, construction of eight new remote master meter stations to assist with water loss and leak detection, additional telemetry equipment for monitoring of master meter locations, conversion of existing water meters to radio-read capability, addition of a new GIS System Hardware and Software, and water line Extensions & Upgrades along approximately 24 miles of the rural roadways. The total cost of the proposed project is estimated to be $3,045,000.

2.0 PROJECT PLANNING AREA

2.1 *Location*

The waterline construction of the East Logan Water Association's project will be spread out along various rural roadways. Nearly 24 miles of new waterline construction or upgrade are proposed along eleven different roadways. The affected roadways are listed in Table 1.

Table 1
Waterline Information

Map I.D.	PRIMARY ROUTES ROAD NAME	Length (miles)	Line Size (inches)
❶	KY Highway 103 Replacement	8.7	10
❷	Summers Road Extension	0.7	4
❸	Morton Road Upgrade	0.9	6
❹	KY Highway 106 Extension	2.6	6
❺	Dennis Road Upgrade	2.5	8
❻	Russellville Bypass Extension	1.0	8
❼	US Highway 68 South Union Extension	1.3	6
❽	Corinth-Oakville Road Extension	0.4	3
❾	J. Will Steward Road Extension	1.8	4
❿	Concord Road Upgrade	2.8	8
⓫	J.B. Duncan Road Extension	0.8	4
	TOTAL	23.6	

The new pump station will be located along the Duncan Chapel Road. The pump station will provide a stable boost of pressure to the Plainview area during periods of peak demands. The new Logan Todd Master Meter Station will be located at the intersection of KY Highway 79 and the Russellville Bypass. The remote master meters are being added to enhance systems operation by identifying potential leaks or line breaks faster, and thereby allow needed repairs to be made more quickly and efficiently. The telemetry upgrades will modernize existing stand-alone systems, and allow the new remote master meters to be tied in with the current system-wide SCADA system.

The proposed project, along with other system improvements, is illustrated on a county highway map and labeled as Exhibit 1.

2.2 *Land Use and Environmental Resources Present*

The line portion of the project is spread out along nearly 24 miles of roadway, all within rural areas of north and east Logan County. The line work is proposed to be constructed within utility easements previously acquired or to be acquired by the East Logan 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. Industrial, commercial, residential and agriculture resources in the entire District will be affected upon completion of the project by providing improved pressure and abundant storage capacity.

The State Historical Preservation Officer has reviewed the project as part of the State Clearinghouse review process. An archaeological review of the project was originally recommended because a water tank was proposed within the project, however subsequent information provided to the State Historic Preservation Officer resulted in this requirement being rescinded.

2.3 *Growth Areas and Population Trends*

The population history of Logan County is an important element in determining the growth patterns over the last 50 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, Logan County's population was 20,896 in 1960, which represents its lowest census year during the last 60 years. Steady growth has been the trend in Logan County since the 1960's. Table 2 provides the population history and projections of the county based on data obtained from the U.S. Bureau of the Census.

Table 2
Population History and Projections

		Historical							Projections					
	YEAR	1940	1950	1960	1970	1980	1990	2000	2005	2010	2015	2020	2025	2030
LOGAN	Adairville	784	800	848	973	1,105	906	920	933	953	983	1,006	1,027	1,041
	Auburn	955	994	1,013	1,160	1,467	1,273	1,444	1,464	1,496	1,542	1,579	1,611	1,634
	Lewisburg	524	496	512	651	972	772	903	915	936	964	988	1,007	1,023
	Russellville	3,986	4,529	5,861	6,456	7,520	7,454	7,149	7,247	7,407	7,632	7,816	7,974	8,090
	Rural Areas	17,096	15,516	12,662	12,553	13,074	14,011	16,157	16,378	16,741	17,246	17,666	18,020	18,284
	Logan County	23,345	22,335	20,896	21,793	24,138	24,416	26,573	26,937	27,533	28,367	29,055	29,639	30,072
	% Change		-4.3%	-6.4%	4.3%	10.8%	1.2%	8.8%	1.4%	2.2%	3.0%	2.4%	2.0%	1.5%

Notes to Table 1: 1. Shaded areas have been calculated based on census and projection data.

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 1940 to 2000 shows that the cities in Logan County have grown overall with some fluctuations. Most of the cities' gains came at the expense of the rural populations in Logan County. However, based on census data, the rural population should continue to grow and surpass the 1940 population figures. Therefore, the population of the East Logan Water District should experience similar growth based upon these projections.

Several factors influence the growth of a community, some of which include accessibility, technology, education, water infrastructure, sewer facilities, and jobs. Over the past ten years, the community has experienced the benefit of a new four-lane highway, which has increased the areas access to larger Kentucky cities such as Hopkinsville and Bowling Green plus improved access to Interstates 24 and 65. High speed internet and wireless technology has gradually entered the communities, creating greater and easier contact to the rest of the world. The local school system is strong and provides a quality education. Recent census figures reveal that over two thirds of the county's population are high school graduates, which is near the state average. Over the last ten years, the District and other communities within the county have worked together to secure a reliable source of potable water for the next thirty years as the county goes online with the recently completed Logan Todd Regional Water Commission.

Further analysis of these projections indicates Logan County's population is projected to grow 13% or add 3,500 persons by 2030. While this growth rate is higher than historical, the projections, when compared with estimates by area development districts, universities, etc., are sound. It should be noted that population would be impacted by the availability or unavailability of water supply. An ample supply of water will promote growth while the lack thereof will limit growth. These factors must be considered when reviewing this report since many assumptions are dependent on these projections.

3.0 EXISTING FACILITIES

3.1 *History and Assets*

The East Logan Water District (ELWD) was formed by Logan County Court order in 1972 to supply potable water to residents of northeastern and eastern Logan County, Kentucky. The water system is comprised of approximately 251 miles of water line and a total water storage capacity of 736,000 gallons. The existing distribution system consists primarily of 8", 6", 4", 3" and 2" PVC lines. The general service area is depicted in Exhibit 1, which illustrates the general distribution layout. The existing transmission and distribution lines generally radiate from Russellville, its former water supplier. The system is well laid out with many loops. However, there are some dead end and low-flow lines within the system that require frequent flushing.

ELWD has three ground level water storage tanks to serve the water system and one primary pumping station that has recently been installed to serve the latest tank addition. The largest ground level tank is located outside the City of Auburn, along Cemetery Road, and the tank has a total capacity of 587,000 gallons and an overflow elevation of 895 feet. The second and oldest ground level tank is located in

the Dennis community. The Dennis tank has a capacity of 220,000 gallons and an overflow elevation of 890 feet. The third and newest tank is located in the Beechland community, and it has a capacity of 319,000 gallons and an overflow of 776 feet.

The Logan Todd Regional system initially supplies water to the ELWD system in three locations. Two of the feed points are via meter/pump stations, both of which are located along US Highway 68 near the Dennis and Cemetery Road tanks, respectively. A third minor feed point is located along KY Highway 79 to serve an isolated area with a large number of homes. Flow through the larger meter stations is controlled by the LTRWC SCADA system, and pressure is regulated as flow enters to match the existing tank overflows. System pressures are normally maintained by the level in the respective storage tanks.

3.2 *Existing Financial Charges and Status*

3.2.1 *Existing Rate Schedule (effective since March 1, 2007)*

Meter Size 5/8 x 3/4 Inch :

First	2,000	Gallons @	$ 19.98	Minimum
Next	2,000	Gallons @	$ 9.49	per 1,000 Gallons
Next	2,000	Gallons @	$ 9.10	per 1,000 Gallons
Next	4,000	Gallons @	$ 7.99	per 1,000 Gallons
All Over	10,000	Gallons @	$ 5.81	per 1,000 Gallons

Meter Size 1 Inch :

First	4,000	Gallons @	$ 38.95	Minimum
Next	2,000	Gallons @	$ 9.10	per 1,000 Gallons
Next	4,000	Gallons @	$ 7.99	per 1,000 Gallons
All Over	10,000	Gallons @	$ 5.81	per 1,000 Gallons

Meter Size 1 ½ Inch :

First	6,000	Gallons @	$ 57.15	Minimum
Next	4,000	Gallons @	$ 7.99	per 1,000 Gallons
All Over	10,000	Gallons @	$ 5.81	per 1,000 Gallons

Meter Size 2 Inch :

First	10,000	Gallons @	$ 89.10	Minimum
All Over	10,000	Gallons @	$ 5.81	per 1,000 Gallons

3.2.2 *O&M Costs (FYE 12/31/07)*

Item No.	Expense Item	Amount
1	Purchased Water	$ 620,847
2	Management fees	$ 215,389
3	Training and Meetings	$ 7,721
4	Utilities	$ 10,549
5	Transmission Expense	$ 215,939
6	Professional Fees	$ 6,000
7	Insurance	$ 7,844
8	Commissioners Fees	$ 13,800
9	Debt Fees	$ 990
10	Office Expense	$ 25,549
11	Miscellaneous Expense	$ 11,605
12	Bad Debt Expense	$ 11,603
13	Advertising	$ 2,600
14	Depreciation	$ 260,547
	Total Utility Expense	**$ 1,410,983**

3.2.3 *Long Term Debts (as of 12/31/07)*

Date of Issue	Bond/Note Holder	Principal Balance	Payment Date	Bond Type	Amount on Deposit in Reserve
1989	KIA	$ 347,500.00	2010	Note	$ 344,370.00
1990	RD	$ 372,000.00	2030	Revenue	
1991	KIA	$ 115,000.00	2011	Note	
1995	RD	$ 584,500.00	2035	Revenue	
2002	RD	$ 720,000.00	2042	Revenue	

4.0 NEED FOR PROJECT

4.1 *Health and Safety*

As stated earlier, portions of the East Logan Water District are currently strained due to growth and recent expansion projects to serve unserved areas. The strain limits the District'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. However, during peak times, some higher elevated areas, which also contain large number of users, experience pressures dipping to 30 psi.

The District constantly battles water loss within the system. Due to the vast area served, the 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.

The proposed Duncan Chapel Road booster pump will relieve the low pressure concerns experienced in the Plainview community, located in the central portion of the District. This particular area has experienced tremendous growth in recent years due to its proximity to Russellville and neighboring school system. The pipelines in this area are some of the original infrastructure of the District, but the growth has arose in only the past ten years. Thus, water flow and pressures have been greatly affected by the strain placed on the aged and undersized pipelines. During the especially high demand events, residential pressures in this area drop to and below 35 psi, which is a minimum requirement according to the Ten State Standards. The booster pump will be equipped with a variable speed drive, which will provide a flexible operation by ramping up nearing peak demand periods and working nearly by tank pressure alone in low demands.

4.2 *System O&M*

There are two primary reasons for the District's proposed project. The first is to improve its ability to supply stable pressures above the Ten States Standard threshold. The second reason is to improve and assist the District's ability to monitor water flow and locate leaks to minimize water loss. As previously stated, the water system has experienced tremendous growth in some of the original constructed areas of the water system. During some peak demand periods within these type areas, the feeder lines are incapable of providing adequate flows resulting in unacceptable pressures. In particular, the Plainview community hydraulic conditions are especially sensitive to this problem. Consequently, the proposed elevated storage tank will provide volume into this area and eliminate the fluctuations in hydraulic performance

The project will also include the addition of remote master meter stations, additional telemetry equipment, radio-read meter conversion, meter reading equipment, and GIS hardware/software. All of these components will improve the District's ability to monitor water flow and make timely locations of water leaks. The radio read meters will improve O&M costs by decreasing the time needed to read approximately 3,000 meters, but it will also enable the District to locate service line leaks quicker with a simple drive by and comparison to historical usage. Overall, management of purchased water costs should be greatly improved with the new equipment's potential to assist and locate waterloss.

4.3 *Growth*

As mentioned earlier, the population of Logan County and the rural areas should grow by an average of 5% every five years over the next 30 years based upon reliable census records and expected growth. The proposed project is necessary to improve the District's ability to serve the recent growth and new developments that are likely in the future. Overall, the proposed project is ultimately being designed to improve water service to their existing 2,646 customers. The new infrastructure will 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 East Logan 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 pressure strain 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 assists with resolving the two critical deficiencies in the water system. The alternative upgrades undersized waterlines strained by growth in the system; eliminates dead end lines that suffer with water quality problems and require frequent flushing; provides a booster pump station in a high demand community, which will stabilize pressure conditions; and provide beneficial equipment to assist with the battle to control waterloss. The project adheres with the Commonwealth's drive to provide a reliable and potable water source to all families by the year 2020. Also, the project provides a solution to East Logan's inability to provide at least 35-psi pressure during all demand times.

5.2.1 *Description*

The project involves construction of nearly 24 miles of water line on eleven roadways in the eastern portions of Logan County. All of these lines are being built to improve hydraulic performance of the existing distribution system by either replacing defective pipe or upgrading line size on strained pipelines. The Plainview area of north central Logan County experiences low pressure during high demand periods. This will be corrected by the construction of a new booster pump station with a variable speed drive. Other low-pressure areas can be corrected by building interconnecting lines to complete hydraulic circuits or "loops". These loops will also improve the water quality by cutting down on the stagnant water in dead-end lines.

In a further attempt to improve service to customers, East Logan is also proposing to install a number of additional remote master metering stations and telemetry system add-ons to allow the operators to monitor the performance of the system in greater detail, and to identify problems earlier. Also, all existing water meters will be converted to radio read, and other meter reading and GIS equipment will be provided to improve operation and maintenance. 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 proposed construction will be done along existing

easements and highways. The line extensions and upgrades are proposed for construction in existing pipeline easements where possible or in county/state right-of-way and easements as necessary. 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 East Logan 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. All of the pipeline routes are very accessible, and there is little evidence of a high water table. However, mobilization will be significant during the project since all of the proposed water lines are spread out throughout the service area. Also, some of the waterline extensions will require creek crossings, but none of which should be unmanageable or exceptionally costly.

5.2.4 *Cost Estimates*

The East Logan Water District's Phase 2 System Upgrade Project is estimated to have a total cost of $3,045,000. The project cost consists of construction, non-construction and contingency costs, which are $2,465,486, $454,770 and $124,744 respectively. The project is anticipated to be funded in part by a $700,000 grant and $1,700,000 loan from Rural Development, $200,000 total grant from the Kentucky State Budget, and $445,000 in local contributions.

6.0 PROPOSED PROJECT

6.1 *Project Design*

6.1.1 *Water Supply*

The Logan Todd Regional Water Commission's plant will serve the proposed project. Based upon figures from LTRWC, the newly completed plant is producing approximately 4,000,000 gallons per day, which is approximately 40% of the design capacity. Therefore, sufficient capacity exists to continue service to the East Logan Water District and its proposed project since no new customers are expected. Currently LTRWC supplies water to East Logan thru two permanent stations and one temporary station. This project will include replacement of the temporary metering point with a new master meter station, equal to others, and equipped with SCADA equipment so that it may be monitored by the LTRWC water plant.

6.1.2 *Storage*

The East Logan Water District has three existing water storage tanks with 1,126,000 gallons of total storage capacity, all of which will continue serving the existing system and new extensions.

6.1.3 *Distribution Layout*

The waterline construction of the East Logan Water District's system upgrade project will be spread out along nearly 24 miles of rural roadways. The affected roadways are not clustered together as typical in most system upgrades, but they are rather "fill-in" lines or replacements to serve hydraulic improvements for water quality and flow. The line portion of the project involves the new construction of approximately 2,115 LF of 3" treated water line, 17,445 LF of 4" treated water line, 25,753 LF of 6" treated water line, 33,367 LF of 8" treated water line, and 45,830 LF of 10" treated water line. In addition to the waterlines, a booster pumping station will be constructed to boost pressures in the Plainview Area during peak demands. Also, in an attempt to improve service to customers, East Logan is proposing to install a number of remote master metering stations and telemetry system additions to allow the operators to monitor the performance of the entire system in greater detail, and to identify problems earlier.

The proposed line extensions and pump station site are 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. Overall, the project was designed in accordance with the Ten State Standards.

6.1.5 *Hydraulic Calculations*

The computer hydraulic simulator, KYPIPE 2000, has been used to construct a system wide model. The model was used to determine the hydraulic characteristics of the East Logan Water District's various pressure zones that will serve the proposed improvements. The "existing conditions" model verified the existence of low pressure areas during high demand periods, especially in the Plainview and Chandlers communities. The "future conditions" model verified that the booster pump and upsized water arteries will correct the current problems. The requirement to provide a line flushing velocity of at least 2.5 feet per second has also been considered. The modeling indicated that the lines may be constructed as proposed.

6.2 *Cost Estimate*

The proposed itemized cost estimate of the East Logan Water District's Phase 2 System Upgrade Project is shown in Table 3.

Table 3
Project Cost Estimate & Funding Sources

Construction		
No.	**Item**	**Bid Price**
1	Line Work Contract - *Horsley Construction Inc.*	$1,638,836.23
2	Duncan Chapel Pump - *EFI & Hanks Construction*	$108,307.64
3	Radio Read Meter Contract - *C.I. Thornburg Co., Inc.*	$438,341.83
	Subtotal - Construction	**$2,185,485.70**
Other System-Wide Construction Improvements		
No.	**Item**	**Estimated Cost**
4	Logan Todd Master Meter Station w/ SCADA	$100,000.00
5	Remote Master Meter Stations	$80,000.00
6	Telemetry for Master Meter Stations	$100,000.00
	Subtotal - System-Wide Improvements	**$280,000.00**
Total Construction Cost		
Total Construction Cost		**$2,465,485.70**
Non-Construction		
1	Legal Costs	$30,000.00
2	Administrative Expense	$20,000.00
3	Land & Right-of-way	$25,000.00
4	Preliminary Engineering & Environmental	$20,000.00
5	Engineering Design (8.08%) - *%Fee Based on Line Contract*	$139,432.00
6	Construction Phase Engineering	$49,798.00
7	Project Closeout Engineering	$12,240.00
8	Construction Inspection (4.96%) - *%Based on Line Contract*	$122,300.00
9	Interest During Construction	$36,000.00
	Subtotal - Nonconstruction	**$454,770.00**
Total Project Cost		
	Contingency (5.06%)	**$124,744.30**
	TOTAL ESTIMATED PROJECT COST	**$3,045,000.00**
Project Funding Sources		
State Budget Appropriation		$200,000.00
Local Contribution (East Logan - General Reserves)		$300,000.00
Local Contribution (East Logan - Rockwell Account)		$45,000.00
Local Contribution (Logan Todd)		$100,000.00
Rural Development Grant		$700,000.00
Rural Development Loan		$1,700,000.00
Total Estimated Project Cost		**$3,045,000.00**

6.3 *Annual Operating Budget*

The proposed annual operating budget for the East Logan Water District's Phase 2 System Upgrade Project is shown in Table 4.

Table 4
Proposed Operating Budget

	Existing [1]	Extension Only		Future	
Operating Income					
Water Sales	$1,461,617.00	$2,632.00	[2]	$1,612,870.00	[6]
Other Charges	$54,551.00	$0.00		$54,551.00	
Total Operating Income	$1,516,168.00	$2,632.00		$1,667,421.00	
Operating and Maintenance Expense					
Purchased Water	$620,847.00	$1,064.00	[3]	$621,911.00	
Management Fees	$236,910.00	$7,107.00	[4]	$244,017.00	
Transmission and O&M Expense	$215,939.00	$6,478.00	[4]	$222,417.00	
Insurance	$7,844.00	$235.00	[4]	$8,079.00	
Utilities	$10,549.00	$316.00	[4]	$10,865.00	
Professional & Contracted Fees	$6,000.00	$180.00	[4]	$6,180.00	
Office Supplies & Collection Expense	$37,152.00	$1,115.00	[4]	$38,267.00	
Miscellaneous Expense	$15,195.00	$456.00	[4]	$15,651.00	
Total Operating Expenses	$1,150,436.00	$16,951.00		$1,167,387.00	
Net Operating Income	$365,732.00	($14,319.00)		$500,034.00	
Non-Operating Income (Expense)					
Interest Income	$77,751.00	$0.00		$77,751.00	
Other	($2,238.00)	$0.00		($2,238.00)	
RUS Interest	($78,871.00)	($70,125.00)	[5]	($148,996.00)	
RUS Principal	($25,000.00)	($17,375.00)	[5]	($42,375.00)	
Non-RUS Interest	($18,470.00)	$0.00		($18,470.00)	
Non-RUS Principal	($32,500.00)	$0.00		($32,500.00)	
Total Non-Operating Income	($79,328.00)	($87,500.00)		($166,828.00)	
Net for Coverage & Depreciation	$286,404.00	($101,819.00)		$333,206.00	
Depreciation	($260,547.00)	($72,000.00)	[7]	($332,547.00)	
Net for Coverage	$25,857.00	($173,819.00)		$659.00	
10% Debt Service Coverage	($15,484.00)	($8,750.00)		($24,234.00)	
Net Income	$10,373.00	($182,569.00)		($23,575.00)	

Notes:

1. Based on FY 2007 from the 2008 ELWD Audit.
2. Based on 5 new customers, 4,540 gallons per month usage & current rates.
3. Based on 5 new customers, 4,540 gallons per month usage X 1.18 water loss & LTRWC rate of $3.31/1,000 gal.
4. Nominal increase (3%) to cover expense associated with additional line footage.
5. Based on a $1.7M RUS loan @ 4.125% & 40 years.
6. Based on a proposed 10.15% rate increase to new and existing customers.
7. Based on $3.6M project & straight line depreciation over 50 years.

Based on the projections and assumptions outlined above, the commitments of a $700,000 Rural Development Grant, local contributions, a $200,000 state grant,

and added revenues from the increased water rates (10.15%) are all expected to produce an adequate fund for coverage, which also fully funds depreciation.

Table 5 illustrates the project's proposed water rate schedule

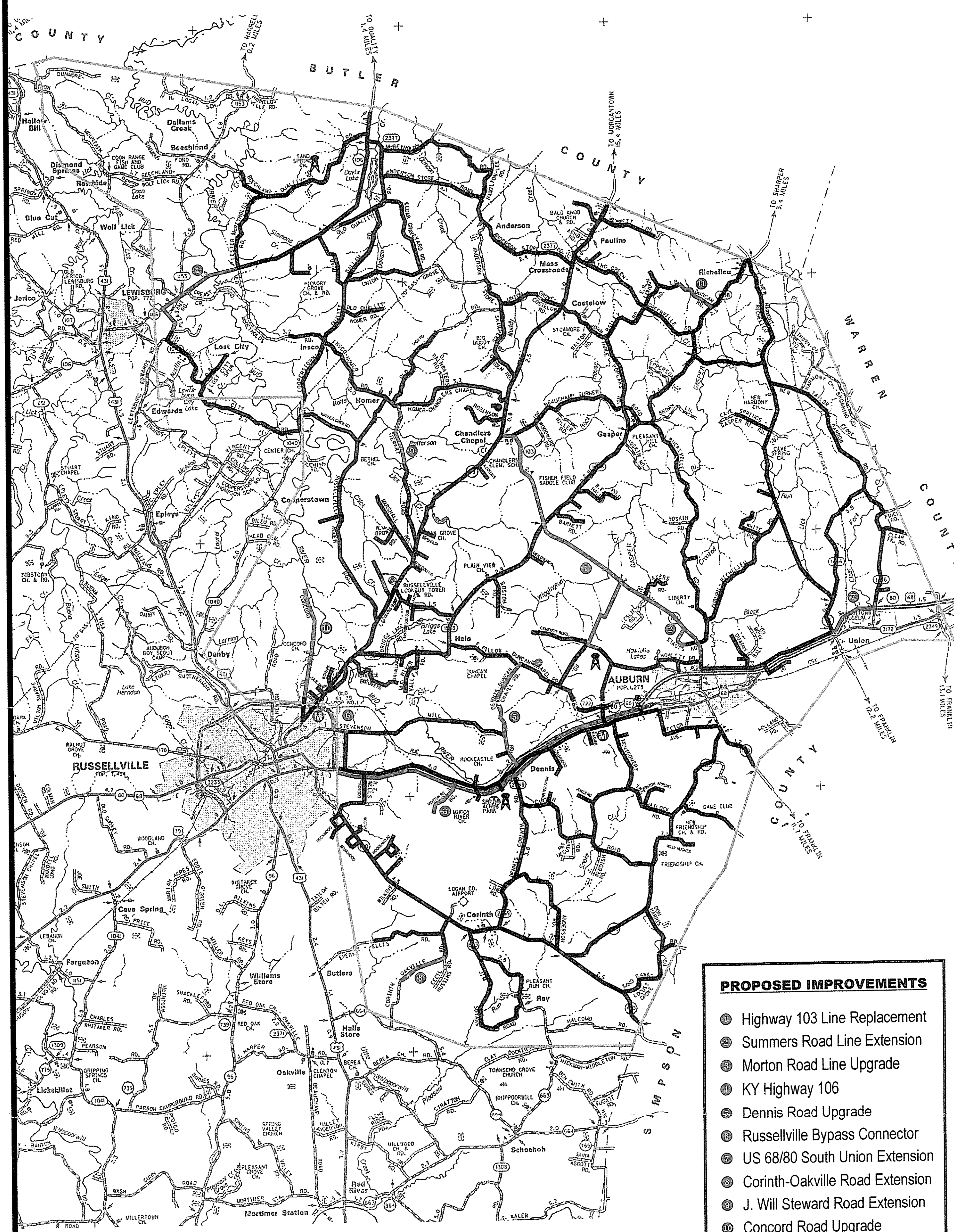
Table 5
Proposed Rate Schedule

Meter Size 5/8 x 3/4 Inch :				
First	2,000	Gallons @	$ 22.01	Minimum
Next	2,000	Gallons @	$ 10.45	per 1,000 Gallons
Next	2,000	Gallons @	$ 10.02	per 1,000 Gallons
Next	4,000	Gallons @	$ 8.80	per 1,000 Gallons
All Over	10,000	Gallons @	$ 6.40	per 1,000 Gallons
Meter Size 1 Inch :				
First	4,000	Gallons @	$ 42.91	Minimum
Next	2,000	Gallons @	$ 10.02	per 1,000 Gallons
Next	4,000	Gallons @	$ 8.80	per 1,000 Gallons
All Over	10,000	Gallons @	$ 6.40	per 1,000 Gallons
Meter Size 1 ½ Inch :				
First	6,000	Gallons @	$ 62.95	Minimum
Next	4,000	Gallons @	$ 8.80	per 1,000 Gallons
All Over	10,000	Gallons @	$ 6.40	per 1,000 Gallons
Meter Size 2 Inch :				
First	10,000	Gallons @	$ 98.15	Minimum
All Over	10,000	Gallons @	$ 6.40	per 1,000 Gallons

7.0 RECOMMENDED SOLUTION

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

- Construct a booster pump station on the Duncan Chapel Road to serve the Plainview community.
- Construct approximately 24 miles of new waterline to improve the system's hydraulics and water quality.
- Construct and install other system-wide improvements for the improved operation and maintenance of the water system.
- Initiate discussion among the District's Board of Directors concerning public awareness and implementation of raising water rates to fund the project.
- Continue pursuing different means of financing through other available agencies and methods.



PROPOSED IMPROVEMENTS

1. Highway 103 Line Replacement
2. Summers Road Line Extension
3. Morton Road Line Upgrade
4. KY Highway 106
5. Dennis Road Upgrade
6. Russellville Bypass Connector
7. US 68/80 South Union Extension
8. Corinth-Oakville Road Extension
9. J. Will Steward Road Extension
10. Concord Road Upgrade
11. J.B. Duncan Road Extension

N

0 1 2 3 4

Scale in Miles

Background Map: KyDOT Logan County General Highway Map—1999

LEGEND

- Existing Water Line
- Proposed Water Line
- Logan Todd RWC Supply Line
- Pressure Zone Boundary
- District Boundary
- Existing Water Storage Tank
- Proposed Water Storage Tank
- Existing Pump Station
- Proposed Pump Station
- LTRWC Supply Metering/Pump Station

McGHEE ENGINEERING, INC.

Guthrie, Kentucky

East Logan Water District

Phase II System Upgrade

PROJECT LAYOUT

By:	Scale:	Date:	Exhibit:
McGhee	As Noted	April 2008	1

Appendix A

Bid Tabulation – March 25, 2008

East Logan Water District

Phase 2 System Upgrade Project

TABULATION OF BIDS: Water Lines Contract

Bids Received: March 25, 2008 @ 11:00 a.m.

No.	BASE BID ITEM	QUANTITY		*Horsley Construction, Inc. Hudson, KY* UNIT $	TOTAL	*Stotts Construction Co., Inc. Columbia, KY* UNIT $	TOTAL	*Ernie Davis & Sons Owensboro, KY* UNIT $	TOTAL	*Meyer Midwest, Inc. Frankfort, KY* UNIT $	TOTAL	*Garrison Construction Co, Inc. Greensburg, KY* UNIT $	TOTAL	*Cleary Construction, Inc. Tompkinsville, KY* UNIT $	TOTAL
01	10-inch Class 200 PVC Waterline	45,830	LF	$ 12.11	$ 555,001.30	$ 14.50	$ 664,535.00	$ 14.35	$ 657,660.50	$ 16.00	$ 733,280.00	$ 15.75	$ 721,822.50	$ 16.50	$ 756,195.00
02	8-inch Class 200 PVC Waterline	33,047	LF	$ 14.62	$ 483,147.14	$ 11.80	$ 389,954.60	$ 12.00	$ 396,564.00	$ 14.00	$ 462,658.00	$ 11.35	$ 375,083.45	$ 19.50	$ 644,416.50
03	8-inch PVC Yelomine Waterline	320	LF	$ 17.00	$ 5,440.00	$ 42.00	$ 13,440.00	$ 17.70	$ 5,664.00	$ 25.00	$ 8,000.00	$ 21.75	$ 6,960.00	$ 29.00	$ 9,280.00
04	6-inch Class 200 PVC Waterline	11,753	LF	$ 6.38	$ 74,984.14	$ 10.30	$ 121,055.90	$ 7.55	$ 88,735.15	$ 5.50	$ 64,641.50	$ 8.80	$ 103,426.40	$ 8.00	$ 94,024.00
05	6-inch PVC Yelomine Waterline	200	LF	$ 13.00	$ 2,600.00	$ 14.70	$ 2,940.00	$ 14.00	$ 2,800.00	$ 25.00	$ 5,000.00	$ 17.20	$ 3,440.00	$ 18.00	$ 3,600.00
06	6-inch Class 250 PVC Waterline	13,800	LF	$ 6.38	$ 88,044.00	$ 10.80	$ 149,040.00	$ 7.90	$ 109,020.00	$ 6.25	$ 86,250.00	$ 9.40	$ 129,720.00	$ 8.60	$ 118,680.00
07	4-inch Class 200 PVC Waterline	10,095	LF	$ 4.67	$ 47,143.65	$ 6.90	$ 69,655.50	$ 5.25	$ 52,998.75	$ 4.25	$ 42,903.75	$ 6.70	$ 67,636.50	$ 6.30	$ 63,598.50
08	4-inch Class 250 PVC Waterline	7,350	LF	$ 5.56	$ 40,866.00	$ 7.10	$ 52,185.00	$ 5.85	$ 42,997.50	$ 4.75	$ 34,912.50	$ 7.00	$ 51,450.00	$ 6.50	$ 47,775.00
09	3-inch Class 200 PVC Waterline	2,115	LF	$ 4.00	$ 8,460.00	$ 6.40	$ 13,536.00	$ 4.50	$ 9,517.50	$ 3.75	$ 7,931.25	$ 6.15	$ 13,007.25	$ 4.00	$ 8,460.00
10	Steel, cased road bore; 16"cs/10"cr	255	LF	$ 110.00	$ 28,050.00	$ 132.00	$ 33,660.00	$ 248.00	$ 63,240.00	$ 175.00	$ 44,625.00	$ 220.00	$ 56,100.00	$ 204.00	$ 52,020.00
11	Steel, cased road bore; 16"cs/8"cr	160	LF	$ 144.00	$ 23,040.00	$ 130.00	$ 20,800.00	$ 230.00	$ 36,800.00	$ 175.00	$ 28,000.00	$ 220.00	$ 35,200.00	$ 204.00	$ 32,640.00
12	Steel, cased railroad bore; 16"cs/8"cr	160	LF	$ 163.00	$ 26,080.00	$ 130.00	$ 20,800.00	$ 240.00	$ 38,400.00	$ 200.00	$ 32,000.00	$ 220.00	$ 35,200.00	$ 230.00	$ 36,800.00
13	Open cut, cased road x-ing; 16"cs/8"cr	25	LF	$ 74.00	$ 1,850.00	$ 80.00	$ 2,000.00	$ 85.00	$ 2,125.00	$ 100.00	$ 2,500.00	$ 90.00	$ 2,250.00	$ 103.00	$ 2,575.00
14	Steel, cased road bore; 10"cs/6"cr	285	LF	$ 123.00	$ 35,055.00	$ 130.00	$ 37,050.00	$ 140.00	$ 39,900.00	$ 100.00	$ 28,500.00	$ 130.00	$ 37,050.00	$ 124.00	$ 35,340.00
15	Open cut, cased road x-ing; 10"cs/6"cr	60	LF	$ 45.00	$ 2,700.00	$ 75.00	$ 4,500.00	$ 60.00	$ 3,600.00	$ 75.00	$ 4,500.00	$ 70.00	$ 4,200.00	$ 54.00	$ 3,240.00
16	Steel, cased road bore; 8"cs/4"cr	70	LF	$ 60.00	$ 4,200.00	$ 110.00	$ 7,700.00	$ 115.00	$ 8,050.00	$ 150.00	$ 10,500.00	$ 100.00	$ 7,000.00	$ 102.00	$ 7,140.00
17	Open cut, cased road x-ing; 8"cs/4"cr	40	LF	$ 40.00	$ 1,600.00	$ 80.00	$ 3,200.00	$ 50.00	$ 2,000.00	$ 75.00	$ 3,000.00	$ 68.00	$ 2,720.00	$ 52.00	$ 2,080.00
18	Uncased Driveway Bore	465	LF	$ 30.00	$ 13,950.00	$ 40.00	$ 18,600.00	$ 65.00	$ 30,225.00	$ 40.00	$ 18,600.00	$ 120.00	$ 55,800.00	$ 30.00	$ 13,950.00
19	Wide Stream Crossing, all line sizes	350	LF	$ 125.00	$ 43,750.00	$ 100.00	$ 35,000.00	$ 165.00	$ 57,750.00	$ 100.00	$ 35,000.00	$ 121.00	$ 42,350.00	$ 116.00	$ 40,600.00
20	Creek Crossing, all line sizes	115	LF	$ 30.00	$ 3,450.00	$ 120.00	$ 13,800.00	$ 70.00	$ 8,050.00	$ 75.00	$ 8,625.00	$ 60.00	$ 6,900.00	$ 65.00	$ 7,475.00
21	Large Flush Hydrant w/ valve	11	EA	$ 1,900.00	$ 20,900.00	$ 2,500.00	$ 27,500.00	$ 2,700.00	$ 29,700.00	$ 2,500.00	$ 27,500.00	$ 2,335.00	$ 25,685.00	$ 2,370.00	$ 26,070.00
22	Small Flush Hydrant w/ valve	3	EA	$ 975.00	$ 2,925.00	$ 1,400.00	$ 4,200.00	$ 1,400.00	$ 4,200.00	$ 2,000.00	$ 6,000.00	$ 1,255.00	$ 3,765.00	$ 1,189.00	$ 3,567.00
23	Standard Buried Blowoff w/ valve	2	EA	$ 600.00	$ 1,200.00	$ 850.00	$ 1,700.00	$ 1,000.00	$ 2,000.00	$ 2,000.00	$ 4,000.00	$ 785.00	$ 1,570.00	$ 764.00	$ 1,528.00
24	8"x8" tapping sleeve, valve & box	2	EA	$ 1,700.00	$ 3,400.00	$ 2,500.00	$ 5,000.00	$ 2,260.00	$ 4,520.00	$ 2,500.00	$ 5,000.00	$ 2,265.00	$ 4,530.00	$ 2,107.00	$ 4,214.00
25	6"x6" tapping sleeve, valve & box	7	EA	$ 1,200.00	$ 8,400.00	$ 1,600.00	$ 11,200.00	$ 1,750.00	$ 12,250.00	$ 2,200.00	$ 15,400.00	$ 1,755.00	$ 12,285.00	$ 1,593.00	$ 11,151.00
26	6"x4" tapping sleeve, valve & box	1	EA	$ 1,000.00	$ 1,000.00	$ 1,500.00	$ 1,500.00	$ 1,575.00	$ 1,575.00	$ 2,000.00	$ 2,000.00	$ 1,600.00	$ 1,600.00	$ 1,356.00	$ 1,356.00
27	4"x4" tapping sleeve, valve & box	6	EA	$ 1,000.00	$ 6,000.00	$ 1,300.00	$ 7,800.00	$ 1,500.00	$ 9,000.00	$ 1,600.00	$ 9,600.00	$ 1,530.00	$ 9,180.00	$ 1,338.00	$ 8,028.00
28	3"x3" tapping sleeve, valve & box	2	EA	$ 1,000.00	$ 2,000.00	$ 1,100.00	$ 2,200.00	$ 1,500.00	$ 3,000.00	$ 1,200.00	$ 2,400.00	$ 1,556.00	$ 3,112.00	$ 1,365.00	$ 2,730.00
29	Connect to Existing 6-inch Waterline	1	EA	$ 1,000.00	$ 1,000.00	$ 700.00	$ 700.00	$ 1,150.00	$ 1,150.00	$ 1,500.00	$ 1,500.00	$ 350.00	$ 350.00	$ 750.00	$ 750.00
30	Connect to Existing 4-inch Waterline	3	EA	$ 1,000.00	$ 3,000.00	$ 600.00	$ 1,800.00	$ 1,090.00	$ 3,270.00	$ 1,200.00	$ 3,600.00	$ 325.00	$ 975.00	$ 700.00	$ 2,100.00
31	Connect to Existing 3-inch Waterline	8	EA	$ 500.00	$ 4,000.00	$ 600.00	$ 4,800.00	$ 1,090.00	$ 8,720.00	$ 1,000.00	$ 8,000.00	$ 300.00	$ 2,400.00	$ 657.00	$ 5,256.00
32	Connect to Existing 2-inch Waterline	1	EA	$ 500.00	$ 500.00	$ 600.00	$ 600.00	$ 1,190.00	$ 1,190.00	$ 1,000.00	$ 1,000.00	$ 725.00	$ 725.00	$ 710.00	$ 710.00
33	10" Gate Valve and box	14	EA	$ 1,200.00	$ 16,800.00	$ 1,600.00	$ 22,400.00	$ 1,500.00	$ 21,000.00	$ 1,500.00	$ 21,000.00	$ 1,285.00	$ 17,990.00	$ 1,243.00	$ 17,402.00
34	8" Gate Valve and box	8	EA	$ 800.00	$ 6,400.00	$ 1,100.00	$ 8,800.00	$ 1,085.00	$ 8,680.00	$ 1,000.00	$ 8,000.00	$ 915.00	$ 7,320.00	$ 881.00	$ 7,048.00
35	6" Gate Valve and box	4	EA	$ 600.00	$ 2,400.00	$ 950.00	$ 3,800.00	$ 790.00	$ 3,160.00	$ 700.00	$ 2,800.00	$ 665.00	$ 2,660.00	$ 630.00	$ 2,520.00
36	4" Gate Valve and box	3	EA	$ 500.00	$ 1,500.00	$ 750.00	$ 2,250.00	$ 685.00	$ 2,055.00	$ 500.00	$ 1,500.00	$ 550.00	$ 1,650.00	$ 498.00	$ 1,494.00
37	3" Gate Valve and box	3	EA	$ 450.00	$ 1,350.00	$ 750.00	$ 2,250.00	$ 650.00	$ 1,950.00	$ 400.00	$ 1,200.00	$ 498.00	$ 1,494.00	$ 463.00	$ 1,389.00
38	Terminate Line w/ Buried Blowoff	8	EA	$ 900.00	$ 7,200.00	$ 1,200.00	$ 9,600.00	$ 1,090.00	$ 8,720.00	$ 1,000.00	$ 8,000.00	$ 1,020.00	$ 8,160.00	$ 1,028.00	$ 8,224.00
39	Plug & Cap Existing Waterline	2	EA	$ 100.00	$ 200.00	$ 1,000.00	$ 2,000.00	$ 1,280.00	$ 2,560.00	$ 1,000.00	$ 2,000.00	$ 298.00	$ 596.00	$ 822.00	$ 1,644.00
40	Terminate Line w/ Large Hydrant	1	EA	$1,500.00	$ 1,500.00	$ 2,800.00	$ 2,800.00	$ 2,640.00	$ 2,640.00	$ 2,500.00	$ 2,500.00	$ 1,805.00	$ 1,805.00	$ 1,691.00	$ 1,691.00
41	Meter Service w/PRV; near side	3	EA	$ 650.00	$ 1,950.00	$ 900.00	$ 2,700.00	$ 850.00	$ 2,550.00	$ 1,000.00	$ 3,000.00	$ 935.00	$ 2,805.00	$ 801.00	$ 2,403.00
42	Meter Service w/PRV, far side	8	EA	$ 750.00	$ 6,000.00	$ 1,200.00	$ 9,600.00	$ 1,200.00	$ 9,600.00	$ 1,200.00	$ 9,600.00	$ 979.00	$ 7,832.00	$ 958.00	$ 7,664.00
43	Reconnect Meter Service; near side	98	EA	$ 200.00	$ 19,600.00	$ 300.00	$ 29,400.00	$ 300.00	$ 29,400.00	$ 450.00	$ 44,100.00	$ 350.00	$ 34,300.00	$ 190.00	$ 18,620.00
44	Reconnect Meter Service; far side	98	EA	$ 300.00	$ 29,400.00	$ 450.00	$ 44,100.00	$ 600.00	$ 58,800.00	$ 650.00	$ 63,700.00	$ 550.00	$ 53,900.00	$ 402.00	$ 39,396.00
45	Air Release Valve	1	EA	$ 800.00	$ 800.00	$ 800.00	$ 800.00	$ 880.00	$ 880.00	$ 1,000.00	$ 1,000.00	$ 975.00	$ 975.00	$ 834.00	$ 834.00
46	Unclassified Undercut	100	EA	$0.00	$ -	$ 10.00	$ 1,000.00	$ 10.00	$ 1,000.00	$ 50.00	$ 5,000.00	$ 20.00	$ 2,000.00	$ 10.00	$ 1,000.00
47	No. 57 Aggregate refill	50	EA	$0.00	$ -	$ 25.00	$ 1,250.00	$ 24.50	$ 1,225.00	$ 25.00	$ 1,250.00	$ 21.75	$ 1,087.50	$ 21.00	$ 1,050.00
48	Class "B" concrete refill	50	EA	$0.00	$ -	$ 80.00	$ 4,000.00	$ 130.00	$ 6,500.00	$ 150.00	$ 7,500.00	* $ 125.00	$ 6,250.00	$ 125.00	$ 6,250.00
	Total Amount of Bid				*$ 1,638,836.23*		*$ 1,889,202.00*		*$ 1,897,392.40*		*$ 1,929,577.00*		*$ 1,974,317.60*		*$ 2,165,978.00*

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

Owner:
East Logan Water District
P.O. Box 715
Auburn, Kentucky 42206
(270) 542-6894

* Denotes error in calculation

Appendix B

Engineer's Recommendation Letter to the District – April 4, 2008

McGHEE ENGINEERING, INC.

202 Ewing Street, P. O. Box 267
Guthrie, Kentucky 42234

www.mcgheeengineering.com

Phone: (270) 483-9985
Fax: (270) 483-9986

April 4, 2008

Mr. Bill Stokes
East Logan Water District
P.O. Box 715
Auburn, Kentucky 42206

RE: Phase II System Extension Project
Waterline Extension Contract
Recommendation of Award

Dear Mr. Stokes:

Bids for the referenced project were received Tuesday, March 25, 2008 at the office of the East Logan Water District, opened and read aloud, all after being advertised in the March 7th and March 14th editions of the *News Democrat & Leader.* The low bidder from the six bids received for the referenced contract was Horsley Construction, Inc. The bids were tabulated and reviewed, and a copy of the bid tabulation is enclosed. No significant errors or non-conformance was noted in the bids.

Horsley Construction, Inc. provided numerous references as well as a few for their subcontractor, Flener Construction, Inc. Based on our evaluation of the bids along with our check of reference comments for both firms, we recommend award of the construction contract to the low bidder, which is as follows:

Waterline Contract:	Horsley Construction, Inc. 368 Hagan Denis Lane Hudson, Kentucky 40145 (270) 257-0081	$1,638,836.23

Upon your approval, we will proceed with preparation of contract documents. Please contact our office if you have any questions.

Sincerely,

McGHEE ENGINEERING, INC.

Chris Wilcutt, PE
Design Engineer

Enclosures

cc: Jerry Cloyd – Rural Development

Appendix C

Drinking Water Branch – DOW's Approval of Plans and Specs

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Steven L. Beshear
Governor

DEPARTMENT FOR ENVIRONMENTAL PROTECTION
300 FAIR OAKS LANE
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-2150
FAX (502)564-4245
www.dep.ky.gov

Robert D. Vance
Secretary

R. Bruce Scott
Commissioner

January 28, 2008

Bill Stokes, Chairman
East Logan Water District
P.O. Box 715
Aubrun, KY 42206

RE: East Logan Water District
AI #33995, APE 20080001
PWSID #0710951-07-001
Phase 2 System Upgrade Project
Logan County, Kentucky

Dear Mr. Stokes:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of approximately 45,830 feet of 10-inch PVC water line, 33,429 feet of 8-inch PVC water line, 25,472 feet of 6-inch PVC water line, 17,494 feet of 4-inch PVC waterline, and 2,115 feet of 3-inch PVC water line. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the enclosed waterline extension construction permit.

If you have any questions regarding this decision, please contact Terry Humphries at 502/564-8158, extension 518.

Sincerely,

for Donna Marlin, Branch Manager
Drinking Water Branch
Division of Water

DSM: TWH

C: McGhee Engineering, Inc.
Logan County H.D.
Public Service Commission
Division of Plumbing

Distribution-Major Construction

East Logan Water District
Subject Item Inventory

Activity ID No.: APE20080001

Subject Item Inventory:

ID	Designation	Description
AIOO33995		
PORT17	Water Lines	45,830 ft of 10" PVC water line, 33,429 ft of 8" PVC water line, 25,472 ft of 6" PVC water line, 17,494 ft of 4" PVC waterline, and 2,115 ft of 3" PVC water line

Subject Item Groups:

ID	Description	Components
GACT17	45,830 ft of 10" PVC water line, 33,429 ft of 8" PVC water line, 25,472 ft of 6" PVC water line, 17,494 ft of 4" PVC waterline, and 2,115 ft of 3" PVC water line	PORT17 45,830 ft of 10" PVC water line, 33,429 ft of 8" PVC water line, 25,472 ft of 6" PVC water line, 17,494 ft of 4" PVC waterline, and 2,115 ft of 3" PVC water line

KEY

ACTV = Activity
AIOO = Agency Interest
AREA = Area
COMB = Combustion
EQPT = Equipment
MNPT = Monitoring Point
PERS = Personnel
PORT = Transport
STOR = Storage
STRC = Structure
TRMT = Treatment

GACT17 (Phase 2 System Upgrade) 45,830 ft of 10" PVC water line, 33,429 ft of 8" PVC water line, 25,472 ft of 6" PVC water line, 17,494 ft of 4" PVC waterline. and 2.115 ft of 3" PVC water line:

Monitoring Requirements:

Condition No.	Parameter	Condition
M-1	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new or relocated water line(s). Take samples at connection points to existing lines, at 1 mile intervals, and at dead ends without omitting any branch of the new or relocated water line. Sample bottles shall be clearly identified as "special" construction tests. [401 KAR 8:100 Section 1(7), 401 KAR 8:150 Section 4, Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.

Submittal/Action Requirements:

Coliform:

Condition No.	Condition
S-1	Coliform For new construction projects, the distribution system, using the most expedient method, shall submit Coliform test results to the Cabinet: Due immediately following disinfection and flushing. [401 KAR 8:150 Section 4(2)]

Condition No.	Condition
S-2	For proposed changes to the approved plan, submit information: Due prior to any modification to the Cabinet for approval. Changes to the approved plan shall not be implemented without the prior written approval of the Cabinet. [401 KAR 8:100 Section 1(8)]
S-3	The person who presented the plans shall submit the professional engineer's certification: Due when construction is complete to the Division of Water. The certification shall be signed by a registered professional engineer and state that the water project has been constructed and tested in accordance with the approved plans, specifications, and requirements. [401 KAR 8:100 Section 1(8)]

GACT17 (continued):

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-1	Additional Limitations: Chlorinated water resulting from disinfection of project components shall be disposed in a manner which will not violate 401 KAR 5:031. [401 KAR 8:020 Section 2(20)]

Condition No.	Condition
T-2	This project has been permitted under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the applicant from the responsibility of obtaining any other approvals, permits or licenses required by this Cabinet and other state, federal and local agencies. Further, this permit does not address the authority of the permittee to provide service to the area to be served. [401 KAR 8:100 Section 1(7)]
T-3	Unless construction of this project is begun within 1 year from the issuance date of this permit, the permit shall expire. If requested prior to the permit expiration, an official extension from the Division of Water may be granted. If this permit expires, the original plans and specifications may be resubmitted for a new comprehensive review. If you have any questions concerning this project, please contact the Drinking Water Branch at 502/564-3410. [401 KAR 8:100 Section 1(9)]
T-4	During construction, a set of approved plans and specification shall be available at the job site at all times. All work shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 1(7)(a)]

PORT17 (Water Lines) 45,830 ft of 10" PVC water line, 33,429 ft of 8" PVC water line, 25,472 ft of 6" PVC water line, 17,494 ft of 4" PVC waterline. and 2.115 ft of 3" PVC water line:

Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Depth	A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. Stones found in the trench shall be removed for a Depth >= 6 in below the bottom of the pipe. [Recommended Standards for Water Works 8.5.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-2	Depth	All water lines shall be covered to a Depth >= 30 in to prevent freezing. [Recommended Standards for Water Works 8.5.3, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-3	Diameter	All water lines shall have Diameter >= 3 in. [Recommended Standards for Water Works 8.1.4] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-4	Diameter	Water lines with Diameter < 6 in shall not have fire hydrants. [Recommended Standards for Water Works 8.1.5] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-5	Diameter	All new and existing water lines serving fire hydrants or where fire protection is provided shall have Diameter >= 6 in. [Recommended Standards for Water Works 8.1.2] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-6	Distance	Water lines shall have a sufficient quantity of valves so that inconvenience and sanitary hazards will be minimized during repairs. A valve spacing Distance <= 800 feet should be utilized in non-commercial districts. Alternatively, non-commercial districts should utilize a valve spacing Distance <= 1 block. Commercial districts should utilize a valve spacing Distance < or = 500 ft. [Recommended Standards for Water Works 8.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-7	Distance	Hydrant drains shall not be connected to sanitary sewers or storm drains and shall be located a Distance > 10 ft from sanitary sewers and storm drains. [Recommended Standards for Water Works 8.3.4] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.

PORT17 (continued):

Limitation Requirements:

Condition No.	Parameter	Condition
L-8	Distance	Except when not practical, water lines shall be laid a horizontal Distance >= 10 ft from any existing or proposed sewer. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10 foot separation, water lines may be installed closer to a sewer provided that the water lines shall be laid in a separate trench or on an undisturbed shelf located on one side of the sewer at such an elevation that the bottom of the water line is at least 18 inches above the top of the sewer. [Recommended Standards for Water Works 8.6.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-9	Distance	When water lines and sewers cross, 1) water lines shall be laid such that either a) the the top of the water line is a vertical Distance >= 18 in below the bottom of the sewer line or b) the bottom of the water line is a vertical Distance >= 18 in above the top of the sewer line, 2) 1 full length of the water pipe shall be located so that both joints of the water pipe will be as far from the sewer as possible, and 3) special structural support for the water and sewer pipes may be required. [Recommended Standards for Water Works 8.6.3] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-10	Distance	The open end of an air relief pipe from automatic valves shall be extended a Distance >= 1.0 ft above grade and provided with a screened, downward-facing elbow. The pipe from a manually operated valve shall be extended to the top of the pit. Use of manual air relief valves is recommended wherever possible. [Recommended Standards for Water Works 8.4.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-11	Pressure	Pipes shall not be installed unless all points of the distribution system remain designed for ground level Pressure >= 20 psi under all conditions of flow. [Recommended Standards for Water Works 8.1.1] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-12	Pressure	Pressure >= 30 psi must be available on the discharge side of all meters. [401 KAR 8:100 Section 4(2)] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.

PORT17 (continued):

Limitation Requirements:

Condition No.	Parameter	Condition
L-13	Residual Disinfection	New or relocated water lines shall be thoroughly disinfected (in accordance with AWWA Standard C651) upon completion of construction and before being placed into service. To disinfect the new or relocated lines use chlorine or chlorine compounds in such amounts as to produce an initial disinfectant concentration of at least 50 ppm and a Residual Disinfection >= 25 ppm at the end of 24 hours. Follow the line disinfection with thorough flushing and place the lines into service if, and only if, Coliform monitoring applicable to the line does not show the presence of Coliform. If Coliform is detected, repeat flushing of the line and Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the line has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [401 KAR 8:150 Section 4(1), Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-14	Velocity	Each blow-off, fire hydrant, or flush hydrant shall be sized so that Velocity >= 2.5 ft/sec can be achieved in the water main served by the blow-off or hydrant during flushing. [Recommended Standards for Water Works 8.1.6.b, 401 KAR 8:100 Section 1(7)]. This requirement is applicable during the following months: All Year. Statistical basis: Minimum.

Monitoring Requirements:

Condition No.	Parameter	Condition
M-1	leaks	The presence or absence of leaks monitored by physical testing as needed shall be determined in all types of installed pipe. Pressure testing and leakage testing shall be in accordance with the latest edition of AWWA Standard C600. [Recommended Standards for Water Works 8.5.5] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.

PORT17 (continued):

Narrative Requirements:

Asbestos (Friable):

Condition No.	Condition
T-1	Asbestos (Friable): If the existing water line to be tapped is asbestos concrete, then the contractor shall conform to OSHA regulations governing the handling of hazardous waste during the process of tapping the asbestos concrete line. Pieces of asbestos concrete resulting from the tap shall be double bagged, placed in a rigid container and disposed of in an approved landfill. [401 KAR 8:100 Section 1(7)]

Additional Limitations:

Condition No.	Condition
T-2	Additional Limitations: Water line installation shall be in accordance with AWWA standards or manufacturer recommendations. [Recommended Standards for Water Works 8.5.1]
T-3	Additional Limitations: Pipes, fittings, valves and fire hydrants shall conform to the latest standards issued by the AWWA or NSF (if such standards exist). PVC and PE piping used must be certified to ANSI/NSF Standard 61. [Recommended Standards for Water Works 8.0.1]
T-4	Additional Limitations: At high points in water lines, where air can accumulate, provisions shall be made to remove the air by means of hydrants or air relief valves. Automatic air relief valves shall not be used in situations where manhole or chamber flooding may occur. [Recommended Standards for Water Works 8.4.1]
T-5	Additional Limitations: All tees, bends, plugs and hydrants shall be provided with reaction blocking, tie rods or joints designed to prevent movement. [Recommended Standards for Water Works 8.5.4]
T-6	Additional Limitations: A fire hydrant or blow-off shall be required at the end of each dead end line. [Recommended Standards for Water Works 8.1.6]
T-7	Additional Limitations: For each fire or flush hydrant, auxiliary valves shall be installed in the hydrant lead pipe. [Recommended Standards for Water Works 8.3.3]

PORT17 (continued):

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-8	Additional Limitations: No flushing device, blow-off, or air relief valve shall be directly connected to any sewer. Chambers, pits or manholes containing valves, blow-offs, meters, or other such appurtenances shall not be directly connected to any storm drain or sanitary sewer. Such chambers, pits or manholes shall be drained to absorptions pits underground or to the surface of the ground where they are not subject to flooding by surface water. [Recommended Standards for Water Works 8.1.6, Recommended Standards for Water Works 8.4.3]
T-9	Additional Limitations: If water lines are installed or replaced in areas of organic contamination or in areas within 200 ft of underground or petroleum storage tanks, ductile iron or other nonpermeable materials shall be used in all portions of the water line installation or replacement. [401 KAR 8:100 Section 1(5)(d)6, Recommended Standards for Water Works 8.0.2]
T-10	Additional Limitations: No water pipe shall pass through or come in contact with any part of a sewer manhole. [Recommended Standards for Water Works 8.6.6]
T-11	Additional Limitations: If a fire sprinkler system is to be installed, a double check detector assembly approved for backflow prevention shall be utilized. The double check detector assembly of the system shall be accessible for testing. [401 KAR 8:100 Section 1(7)]
T-12	Additional Limitations: If water lines cross a stream or wetland, the provisions in the attached Water Quality Certification shall apply. If you have any questions please contact the Water Quality Certification Supervisor of the Water Quality Branch at (502) 564-2225. [401 KAR 8:100 Section 1(7)]

PORT17 (continued):

Narrative Requirements:

Subfluvial Pipe Crossings:

Condition No.	Condition
T-13	Subfluvial Pipe Crossings: For subfluvial pipe crossings, a floodplain construction permit will not be required pursuant to KRS 151.250 if the following requirements of 401 KAR 4:050 Section 2 are met. 1) No material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc. during construction of pipe crossings. 2) Crossing trenches shall be backfilled as closely as possible to the original contour. 3) All excess material resulting from construction displacement in a crossing trench shall be disposed of outside the flood plain. 4) For erodible channels, there shall be at least 30 inches of backfill on top of all pipe or conduit points in the crossing. 5) For nonerodible channels, pipes or conduits in the crossing shall be encased on all sides by at least 6 inches of concrete with all pipe or conduit points in the crossing at least 6 inches below the original contour of the channel. [401 KAR 8:100 Section 1(7)]
T-14	Subfluvial Pipe Crossings: For subfluvial pipe crossings greater than 15 feet in width, 1) the pipe shall be of special construction, having flexible, restrained, or welded watertight joints, and 2) valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair. Valves shall a) be easily accessible, b) not be subject to flooding, and c) if closest to the supply source, be in a manhole with permanent taps made on each side of the valve to allow insertion of a small meter to determine leakage and for sampling purposes. [Recommended Standards for Water Works 8.7.2]