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REVISED PRELIMINARY ENGINEERING REPORT

FOR THE

WEST LAUREL WATER ASSOCIATION

COUNTY FARM PUMP STATION

&

CITY DAM ROAD LOOP

PREPARED BY

KENVIRONS, INC.

***452 VERSAILLES ROAD
FRANKFORT, KY 40601***

PROJECT NO. 2015045

JULY 2016

REVISED: NOVEMBER 2016

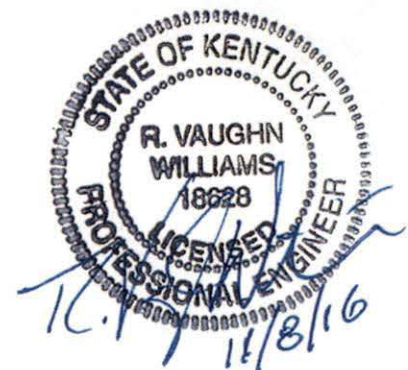


TABLE OF CONTENTS

INTRODUCTION.....	1
PROJECT PLANNING.....	1
A. Location	1
B. Environmental Resources Present	2
C. Population Trends	2
EXISTING FACILITIES	2
A. Location Map	2
B. History	3
C. Condition of Existing Facilities	3
D. Financial Status of Existing Facilities.....	4
NEED FOR PROJECT.....	4
A. Health, Sanitation, and Security	4
B. Aging Infrastructure	5
C. Reasonable Growth.....	5
ALTERNATIVES CONSIDERED.....	6
A. Description.....	6
B. Design Criteria	6
C. Map	6
D. Environmental Impacts	7
E. Land Requirements	7
F. Potential Construction Problems.....	7
G. Sustainability Considerations	7
H. Cost Estimates	8
SELECTION OF AN ALTERNATIVE	8
A. Life Cycle Cost Analysis	8
B. Non-Monetary Factors	8
PROPOSED PROJECT	9
A. Preliminary Project Design	9
B. Project Schedule.....	10
C. Annual Operating Budget	10

D. Sustainability Considerations	11
E. Total Project Cost Estimate	11
F. Annual Operating Budget.....	11
CONCLUSIONS AND RECOMMENDATIONS.....	12

EXHIBITS

Exhibit 1: Estimated Project Schedule	10
Exhibit 2: Permits & Approvals Needed	10
Exhibit 3: Total Project Cost Estimate	11
Exhibit 4: Annual Operation & Maintenance Cost	12

APPENDIX

TABLE LIST

Table 1: Water Purchase History.....	14
Table 2: Cost Estimate of Alternative 1.....	17
Table 3: Cost Estimate of Alternative 2.....	17
Table 4.1: Life Cycle Cost Analysis for Alternative 1.....	18
Table 4.2: Life Cycle Cost Analysis for Alternative 2.....	19

LIST OF FIGURES

Figure 1: Existing Pump Station Site Location.....	16
Figure 2: Significant Hydraulic Elements in System.....	20
Figure 3: Average Daily Water Purchase.....	21
Figure 4: Proposed Pump Station Site Location.....	22
Figure 5: System Map for Alternative 2.....	23
Figure 6: Water Line & KY-363 Water Storage Tank Locations.....	24

ATTACHMENTS

Existing Operating Budget for Year Ending 2014
Debt Service Summary
Revenue Requirements for Proposed Project
Revised Revenue Requirements and Percent Rate Increase
Proposed Rates

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INTRODUCTION

The West Laurel Water Association, founded in 1970, is a rural water utility system whose purpose is to establish, develop, and operate a water supply and distribution system for its members and customers in the western portion of Laurel County, Kentucky. The West Laurel Water Association (WLWA), East Laurel Water District (ELWD), and Wood Creek Water District (WCWD), are located in Laurel County, Kentucky. The WLWA and ELWD have no employees, and the three utilities are operated and maintained by WCWD.

The WLWA purchases all of its treated water from the WCWD. The primary connection source of water for the WLWA is a connection to WCWD at County Farm Road (CFR). The County Farm Road pump station has been in place since 1983, and was originally rated to deliver 1.7 million gallons per day (MGD). The pump station has performed well, but it is not capable of supporting the growth in the area. Since the pump station is located below ground, it cannot perform and be maintained as efficiently as a newer style above ground pump station. The purpose of this report is to outline the replacement of the underground pump station, as well as the installation of approximately 4,700 Linear Feet (L.F.) of new 8" PVC water line along City Dam Road, replacement of 7,000 L.F. of 6" PVC water line along KY-552, and painting and rehabilitating the KY-363 water storage tank. This project will be a key step in supporting the growth of the WLWA system.

PROJECT PLANNING

A. Location

Laurel County sits at the heart of the Daniel Boone National Forest in eastern Kentucky. London is the county seat of Laurel County and is near the geographic center of the county. This project is located in the southwest region of Laurel County. The CFR pump station project site is located approximately 2 miles to the east of London. The City Dam Road pipeline extension project is located approximately 12 miles southwest of London. The KY-552 waterline replacement is located approximately 8 miles southwest of London, and the KY-363 water storage tank is located approximately 9 miles southwest of London.

As stated previously, the West Laurel Water Association is a rural water utility system. The purpose of the Association is to establish, develop, and operate a water supply and distribution system for its members and the customers in the western portion of Laurel County. Since the inception of the WLWA, there has been a steady rise in demand for clean, potable drinking water. This project will help the WLWA support this increase in demand.

B. Environmental Resources Present

The proposed project is located in the western portion of Laurel County. According to the *Soil Survey of Laurel and Rockcastle Counties, Kentucky*, prepared by the USDA Soil Conservation Service, the major natural resources in the area are coal, timber and saltpeter. Most of the saltpeter mines were located in adjoining Rockcastle County, and large amounts of saltpeter were mined during the war of 1812. However, the saltpeter industry is now dormant. The mining and timber industry have also taken a sharp decline in recent years. The most important and prominent environmental resource in the area is the soil. Soil supports farming, which is the largest industry in the area. However, the area is growing and adding additional jobs and industries and will need the support of this project in order to deliver a sufficient water supply to these new homes and new industries.

C. Population Trends

The population of Laurel County according to the 2010 Census conducted by the United States Census Bureau was 59,006. The West Laurel Water Association services 5,284 households, or 12,286 people. This is about 21 percent of the Laurel County population. The population of Laurel County has seen a growth in population over the past 20 years, at a rate of about 1.1 percent per year. Assuming this same trend continues, the current service provided by the West Laurel Water Association will not be able to withstand the growth. This project will allow western Laurel County to grow at its current rate and provide users sufficient water service.

EXISTING FACILITIES

A. Location Map

The current County Farm Road pump station is located at the intersection of County Farm Road and Mitchell Creek Road in Laurel County. The pump station is situated on the east side of the road. The site is enclosed by chain-link fence, and the current pump is located underground. The underground location makes for difficult working conditions, therefore the pump is very difficult to service and maintain. These conditions are also not optimal for a pump location, due to the ease of chamber flooding. This could possibly cause extensive damage, or even a complete loss of the pump as well as the electronic monitoring equipment. The new pump station will be located above ground in an enclosed structure. This will provide for a more appropriate environment for the pump and electrical monitoring equipment. This facility will also allow for easier access so that regular maintenance can be performed. The current site location is depicted in Figure 1 in the appendix.

B. History

The existing County Farm Road pump station was originally constructed in 1983. Approximately 88 percent of the water used in the West Laurel Water Association distribution system passes through the County Farm pump station. This pump station is vital to the Water Association. Throughout the history of the pump service record, there have been instances of motor failure and excess chamber moisture. These problems will be addressed with this project.

Another portion of this project will include replacing an existing water line that is the problematic, as well as repairing and repainting the existing KY-363 water storage tank. The water line that has been most problematic is that along KY-552. The existing line is 3 inches in diameter, and was originally installed in 1990. The line is now over 25 years old, and due to growth in the area, is grossly undersized.

The final aspect of the project is to repair and repaint the KY-363 water storage tank. This tank is a cylindrical, ground set type, with steel construction. The tank has a storage capacity of 200,000 gallons, and was originally constructed in 1978. The tank is situated alongside KY-363, and is subject to dirt and debris from roadway traffic. The tank needs minor repairs and repainting in order to remain in service.

C. Condition of Existing Facilities

The existing County Farm Road pump station delivers the primary source of water into the WLWA system. As stated in the previous section, the existing County Farm Road pump station was constructed in 1983. Since the pump station has been in place for over 30 years, the components have aged and have reached the end of their usable life. The 200,000 gallon KY-363 water storage tank was originally constructed in 1978, and is also in need of repair. The tank has sustained damaged over time and will need to be repaired and repainted in order to remain in service. The following description is an overview of the current operating conditions. These conditions show that the current pump station is operating at nearly 70 percent of its rated design capacity on peak days, and at its current age, is struggling to keep up with demand.

The CFR pump station pulls water from the WCWD system through a 12-inch pipeline that is connected to a WCWD 20-inch main. The pump discharges through a 12-inch main in the WLWA system for approximately 4.5 miles along Parker Road and KY-192 to the junction of KY-192 and Maple Grove Road. The pipeline system divides and continues through an 8-inch and 10-inch pipeline system beyond the KY-192 and KY-363 storage tanks to the Keavy tank in the southern part of the county. The map in Figure 2 of the appendix contains a delineation of the significant existing hydraulic transmission elements in the WLWA system.

The operation of the CFR pump station is controlled by the KY-192 storage tank. The KY-363 tank floats on this system. Another pump station located at the KY-192 tank pumps from the KY-192 tank to the Forest Service tank, and then on to the Keavy tank. The operation for the KY-192 pump station is controlled by the Keavy tank.

Based on previous studies, approximately 88 percent of the water purchased by WLWA passed through the CFR pump station. With that assumption, using data gathered in 2014, the purchased water that passed through the County Farm Road master meter and pump station was:

Annual: 311,611,520 Gallons
Daily Average: 853,730 Gallons per Day (GPD)
Daily Average during Maximum Month (June): 904,660 GPD
Maximum Day (6/21/14): 1,180,334 GPD

The pumps at the County Farm Road pump station generally pump at the rate of 1200-1300 gallons per minute (GPM). At this pumping rate, the approximate duration of pump operation during 2014 was:

Annual Average Day: 11 hours (51% of capacity)
Maximum Month Average Day: 12 hours (51% of capacity)
Maximum Day: 16 hours (68% of capacity)

D. Financial Status of Existing Facilities

The financial status of the existing facility is summarized in budget sheets located in the back of the appendix. The first two sheets labeled *EXISTING OPERATING BUDGET FOR YEAR ENDING 2014* and *DEBT SERVICE SUMMARY* outlines the status of the current facility. These sheets show the income generated by the facility, current operation and maintenance costs, and the existing debts of the utility.

NEED FOR PROJECT

A. Health, Sanitation, and Security

This project will replace an underground pump station and approximately 7,000 L.F. of water line along KY-552. The current facilities are outdated and have reached the end of their usable life. Since these facilities are leaking, this provides an opportunity for both surface and subsurface contaminants to penetrate the piping, which then get distributed to the end user. This project will replace these items with new components, ensuring that there is no health or sanitation hazard due to failing lines.

B. Aging Infrastructure

The existing County Farm Road pump station has been in place since 1983. The water line on KY-552 that will be replaced has been in place since 1990. Both of these system elements are reaching the end of their usable life. The existing pump station is located underground. Over time, the structure of the pump chamber has been compromised, allowing water infiltration. This condition subjects the chamber to the possibility of flooding during high water conditions. The existing water lines on KY-552 are 3". This size was acceptable at the time of installation. However, water demand has increased in the area and the existing lines are undersized. Since these lines have been in place for more than 20 years, they are becoming problematic, and require more maintenance than necessary. These outdated and deteriorating lines are the cause of numerous line breaks and line leaks. This system of outdated lines resulted in a total line loss value of over 50 million gallons of water in 2014. This equates to almost 15 percent of the water that was purchased by WLWA for resale and distribution to customers. This project will replace the underground pump station along with a critical section of water line in the distribution network. The final element in the project will be to rehabilitate and repaint the existing KY-363 water storage tank. This tank has been in place since 1978 and will need to be repaired and repainted in order to stay in service.

C. Reasonable Growth

A detailed computer-based hydraulic model has been developed and updated over several years for the interconnected systems of Wood Creek Water District, West Laurel Water Association and East Laurel Water District. This computer analysis shows that the west end of Laurel County would be unable to supply water to a system of expanding infrastructure. This installation of new water lines and the rehabilitation of the existing CFR pump station would allow for the area of west Laurel County to accommodate future growth.

To predict the future usage based upon past growth rates, data was obtained and analyzed from the WLWA. The data shows water purchases made by the WLWA from 1973 until 2014. The data was plotted to develop a baseline and show a trend for how water demand has grown in the area since 1973. To predict future demand, the graph was expanded using linear regression in order to show the water demand for upcoming years. This graph, along with the information used to create it is shown in the appendix in Figure 3 and Table 1 respectively. The graph was extended to the year 2040 to provide a trend for increasing demand. According to the graph, the demand will be approximately 1.9 MGD by 2040, with 1.6 MGD passing through CFR pump station. With the current pump rating and condition of this system, the existing pump station will not be able to sustain this level of growth.

ALTERNATIVES CONSIDERED

A. Description

After consulting with the client, and discussing multiple alternatives, there were three alternatives that were ultimately to be considered. There are two technically feasible alternatives and one technically infeasible alternative to be considered. The options considered to be technically feasible are the rehabilitation plan outlined in this report (replacing the County Farm Road pump station, installing new water lines, and rehabilitating the KY-363 water storage tank), or to install two pump stations further downstream in the pipe network along with the line installation/replacement and storage tank rehabilitation. For alternative two, one pump would be controlled by the KY-192 tank and the other pump would be controlled by the KY-363 tank. The final alternative that could be chosen is not technical in nature, but is an option the client is facing. This alternative is to continue the current practice of repairing leaks, which has been a substantial cost for the client due in part to both the intense labor needed to repair lines, as well as in the physical water losses. This option also does not allow for the community to grow and maximize its potential. Since the last option is technically infeasible, only the first options of system rehabilitation will be analyzed. Following the evaluation, one of the alternatives will be recommended to the client.

B. Design Criteria

Both technically feasible designs must be able to supply the current customer load of approximately 5,300, with the ability to withstand growth. The current average daily demand for water is approximately 1.0 MGD. With the population growing at a rate of over 1% per year, the design criteria will be that the pump station(s) will have to deliver at least 2.0 mgd, preferably 2.2 MGD. A pump station with a design capacity of 2.2 MGD will be an increase of more than 20 percent over the existing CFR pump station. The pump station(s) will be designed to at least the standards of the 2007 edition Recommended Standards for Water Works (10 State Standards). The water line components of the project will be designed using computer based hydraulic modeling software, and the design criteria will be governed by the 10 State Standards. No matter which alternative is chosen, the project will need to fulfill the needs of the client by providing clean drinking water in the quantity required to sustain growth, all while remaining within the budget of the client.

C. Map

Figure 4 in the Appendix shows the location for the CFR pump station replacement portion of alternative one. The installation location of the new water lines and KY-363 water storage tank will be shown later. Figure 5 in the Appendix shows the layout for alternative two. This system would implement two pump stations farther

downstream in the pipe network. One of the pump stations would be controlled by the KY-192 storage tank and the other pump station would be controlled by the KY-363 storage tank. This alternative would also include the installation/replacement of the water lines on City Dam Road/KY-552 and the rehabilitation of the KY-363 water storage tank.

D. Environmental Impacts

The environmental components that were assessed for both alternatives were if the projects were located in a floodplain, and how did the proposed alternatives affect the Endangered Species Act. After an evaluation of floodplain maps from the Federal Emergency Management Agency (FEMA), it was determined that neither alternative would be located with the 100-year flood boundary. After performing a search of the U.S. Fish and Wildlife Environmental Conservation Online System to locate endangered species in the project area, the following species were listed as having possible habitat in the area: Bald Eagle, Cumberland bean clam, Cumberland elktoe clam, Fluted kidneyshell clam, Blackside dace fish, White fringeless orchid, Virginia spiraea plant, Indiana bat, Gray bat, and Northern Long-Eared bat. Since the project will not be working near a waterway, the fish and clam species listed will not be a concern. Alternative one (CFR pump station replacement) is not anticipated to impact any trees or wooded areas, where the previously listed bird, bat, and flowering plant species would be located. Alternative two (2 pumps further downstream) would require the removal of trees and wooded area to construct the pump stations.

E. Land Requirements

The land where the pump station(s) is (are) to be constructed will be on a permanent easement(s) which will be obtained by the West Laurel Water Association. The pipeline replacement will be on public right-of-way and in order to proceed with the project, an encroachment permit from the County and Kentucky Department of Highways will need to be obtained.

F. Potential Construction Problems

As of now, the only known construction issues or concerns that this project will have to address is that if Alternative two is chosen, the tree removal will be limited to the months in which bats are not breeding. Trees are vital habitat to bats, and removal is forbidden during the breeding period.

G. Sustainability Considerations

For sustainability considerations, both alternatives would utilize Variable Frequency Drive (VFD) pumps. These pumps are used to control flow and can be controlled by demand in order to reduce electricity consumption. A more detailed

description of a VFD pump, and how it will provide a sustainable element to this system is provided in the later Proposed Project section of the report.

H. Cost Estimates

Table 2 in the Appendix shows the following breakdown of costs associated with the project if alternative 1 (replacing the County Farm Road pump station, new lines, and tank rehabilitation) is chosen. The primary costs considered were legal fees, engineering fees, project construction, contingency, and the anticipated annual O&M costs.

Table 3 in the Appendix shows the following breakdown of costs associated with the project if alternative 2 (two downstream pump stations, new lines, and tank rehabilitation) is chosen. The primary costs considered were legal fees, engineering fees, project construction, contingency, and the anticipated annual O&M costs.

SELECTION OF AN ALTERNATIVE

A. Life Cycle Cost Analysis

Tables 4.1 and 4.2 in the Appendix show the Life Cycle Cost Analysis for the project alternatives, as well as the values for planning period and discount rate that were used when performing the calculations. To interpret the results of the Life Cycle Cost Analysis, it is important to understand the contextual situation of the analysis. Since both of the alternatives aim to complete the same task, this is considered to be a fixed output analysis. Whichever alternative has the lowest net present value (NPV) is the alternative that should be chosen.

The Salvage Value of the existing facilities was calculated from the utilities financial statement using straight line depreciation. The assets were assumed to have a 50 year life and were depreciated 20 years. The Salvage Value of the proposed improvements was calculated using straight line depreciation of the construction cost for each alternative. The Net Present Value for each alternative was calculated as:

$$NPV = Capital + (USPW * Total\ O\&M) - (SPPW * Total\ Salvage\ Value)$$

B. Non-Monetary Factors

There were no non-monetary factors that influenced these alternatives. There are two technically feasible alternative being considered, and there were no other foreseeable non-monetary factors that would play a role in this project if either of the project alternatives were chosen.

PROPOSED PROJECT

A. Preliminary Project Design

It is upon recommendation of the project engineer that alternative one (County Farm Road pump station replacement, new line installation, KY-363 storage tank rehabilitation) be constructed. Based upon current conditions, client budget, environmental impacts, and future forecasting, alternative one will be most effective in meeting the needs of the client. Since this is a drinking water project, the following items need to be addressed:

Water Supply: The WLWA currently purchases all of its water from the WCWD. The water is supplied from Wood Creek Lake, a 672 acre man-made lake created in 1969 by impounding Wood Creek.

Treatment: WLWA does not operate a water treatment plant. The water that is purchased from WCWD has already been treated when it arrives to CFR pump station and does not need any additional treatment.

Storage: WLWA has 4 steel water tanks to serve as the water storage facilities. These tanks are cylindrical, ground-set types each with a 200,000 gallon capacity. Two of the tanks have an overflow elevation of 1,405 ft., one has an overflow elevation of 1,322 ft., and the other one with 1,415 ft. The KY-363 storage tank is included in this project so that funding may be used for tank maintenance. The tank is currently operational, and will remain in operation during the repainting process. Repainting the tank will have no effect on the water quality and will prolong the life of the tank by protecting its metal surface from rust contamination. The paint system shall meet ANSI/NSF standard 61 as per the 10 State Standard regarding Painting of Finished Water Storage Structures section 7.0.17.

Pumping Stations: The pump station is the primary focus of this project. The existing County Farm Road pump station has been in service for many years (1983), and has reached the end of its effective life. The current pump station is also located underground and is not easily serviced. The new pump station will contain two new pumps, with an additional empty slot that can allow another pump to be added later in the future. The new pump station will also be located above ground in an enclosed building. With this arrangement, the Association will be able to perform routine maintenance with ease. The new pump station will also incorporate VFD pumps. These variable frequency pumps will allow for precise control of flow and system pressure, while saving on electrical costs due to their high degree of controllability. In total, the new pump station will allow the WLWA to meet the demands of its current users, and with the ability to add an additional pump, meet the growth demands for upcoming years. Refer to Figure 4 in the appendix which shows the location of the proposed pump station.

Distribution Layout: The secondary focus of this project is to install water lines and rehabilitate the KY-363 water storage tank. The first set of lines to be installed will be approximately 4,700 L.F. of 8" PVC water line along City Dam Road. This line installation will be used to complete a distribution system loop. The second set of water line to be installed will be approximately 7,000 L.F. of 6" PVC water line along KY-552. The new line will be installed to replace an existing undersized and deteriorating water line. The most problematic area on KY-552 is the portion located between the intersection of KY-552 with KY-363 to the east and Corn Cemetery Road to the west. This is the section of line which will be replaced. KY-363 water storage tank is the last component of the project. The tank will undergo minor repairs and be repainted as a measure of maintenance. Refer to Figure 6 in the appendix which shows the location for the new line installations, as well as the KY-363 water storage tank location.

B. Project Schedule

Exhibit 1 shown below contains the proposed dates for the major project components. The list is not exhaustive of all project tasks and dates shown are estimated.

Exhibit 1	
Estimated Project Schedule	
West Laurel Water Association	
Category	Estimated Date
Environmental Review Submittal	April 30, 2016
Bid Opening	September 1, 2016
Construction Start	November 1, 2016
Construction Completion	August 08, 2017

C. Permit Requirements

Exhibit 2 shown below is a tentative list of permits and approvals that will need to be obtained before project construction can begin. This list is preliminary and is subject to change following the review process of the required agencies.

Exhibit 2	
Permits & Approvals Needed	
West Laurel Water Association	
Agency	Permit or Approval
KY Department of Highways	Encroachment Permit
KY Department of Highways	Permanent Easement

D. Sustainability Considerations

The sustainable practice that this project is proposing is to utilize a VFD, or Variable Frequency Drive pump motor. Running a traditional AC induction motor constantly at full power is a waste of electricity. Also, the demand for a full power condition does not occur often enough to make running at full power all throughout operation to be economical. Traditionally, system output would need to be controlled by throttling valves to control the flow, but the problem of running the motors at full capacity still exists. Motor output could be reduced with mechanical devices such as gearing and clutches, but these methods are costly, bulky, and difficult to maintain. A VFD motor controls the system output through the speed of the motor itself. These types of motors are controlled by a central control system, or by in-line flow sensors. When the demand is high, the motor can provide fully rated output values, and then when demand reduces, the motor is throttled back, saving on electricity costs.

E. Total Project Cost Estimate

Exhibit 3 shown below is the Engineer's Opinion of Probable Cost for the recommended alternative as described above. Any remaining funds leftover after the project is substantially completed will be used to fund any or all of the following items as needed by the Water Association: Radio Read Water Meters, miscellaneous pipe materials, and Water Storage Tank painting and rehabilitation.

Exhibit 3	
Total Project Cost Estimate	
West Laurel Water Association	
Category	Cost Associated
Legal	\$17,000
Engineering Fees (Design)	94,000
Engineering Fees (Construction)	23,000
Engineering Fees (Inspection)	72,000
Engineering Fees (Other)	24,000
Construction	1,405,000
Contingency	127,000
Miscellaneous	38,000
Total Project Cost	\$1,800,000

F. Annual Operating Budget

Exhibit 4 shown on the following page is a summarized version of the *EXISTING OPERATING BUDGET FOR YEAR ENDING 2014* which is shown in the appendix.

Exhibit 4	
Annual Operation & Maintenance Cost	
West Laurel Water Association	
Category	Cost Associated
Purchased Water	\$1,033,604
Purchased Power	23,214
Materials & Supplies	215,639
Contractual Services	540,197
Insurance	24,260
Bad Debt	22,051
Miscellaneous	31,711
Total O&M Cost	\$1,890,676

CONCLUSIONS AND RECOMMENDATIONS

It is the conclusion and recommendation of this report that the West Laurel Water Association implement the proposed project as described herein in the Proposed Project section of this report. It is further recommended that WLWA proceed with its applications for federal assistance to fund the project.

An evaluation of the Water Association's current revenue, the proposed project's capital and operating and maintenance costs was conducted to determine the project's impact on the water rates. These budget sheets are attached in the appendix for a more detailed review. Based on the information contained in the Water Association's 2014 Annual Report to the Public Service Commission and the funding scenario outlined in the budget sheets in the Appendix, the user rates need to be increased by 12.06 % to finance the proposed project.

A *Summary Addendum to Preliminary Engineering Report* will be completed at a later date. The Summary Addendum outlines the project's feasibility.

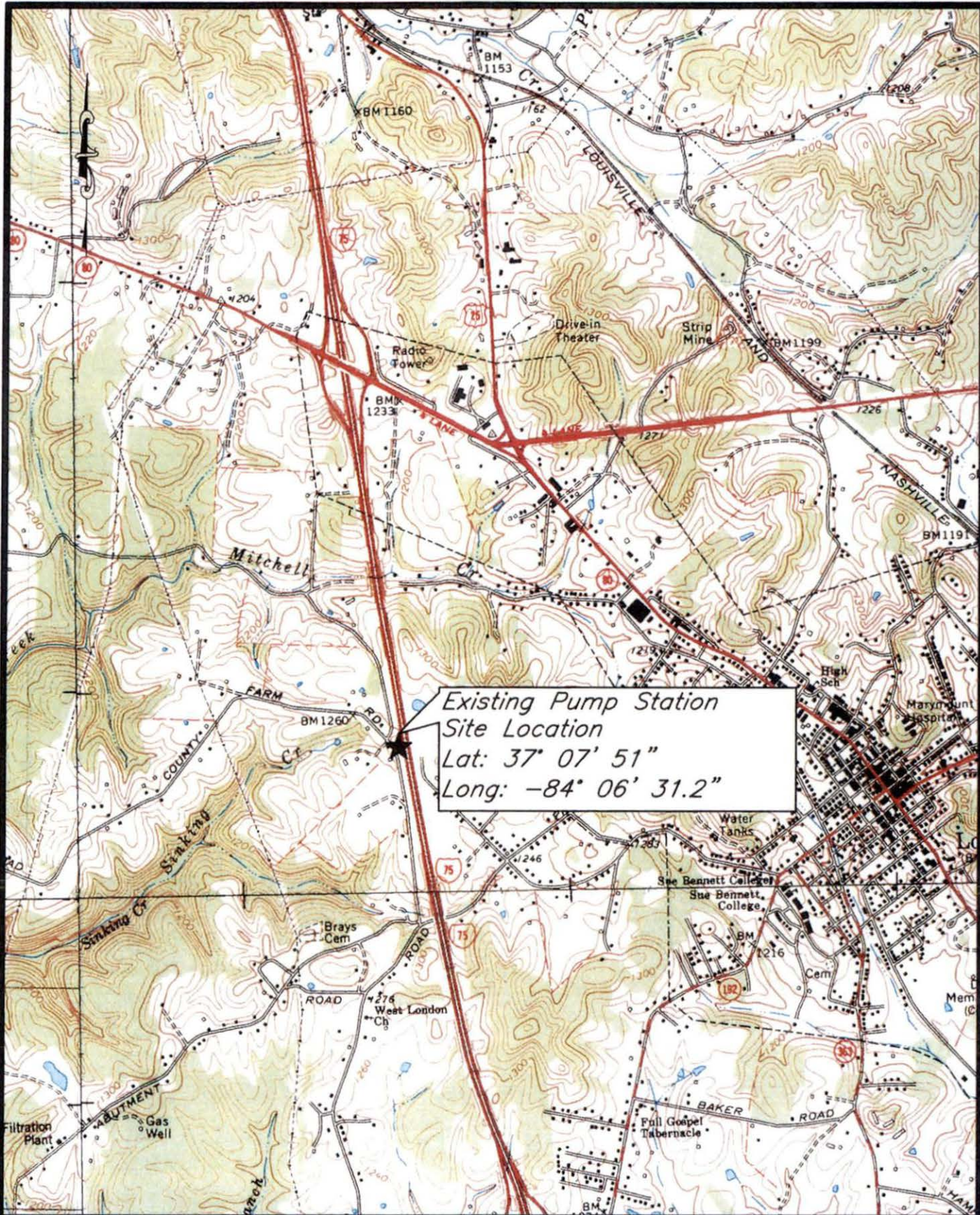
APPENDIX

Table 1		
Water Purchase History (gal) 1973-2007		
Year	Annual	Average Daily
1973	35,244,855	96,561
1974	34,838,400	95,448
1975	41,558,600	113,859
1976	53,914,500	147,307
1977	56,319,800	154,301
1978	79,035,200	216,535
1979	84,689,600	232,026
1980	97,145,000	265,423
1981	93,306,800	255,635
1982	104,762,800	287,021
1983	117,161,300	320,990
1984	136,267,600	372,316
1985	149,116,400	408,538
1986	166,360,900	455,783
1987	170,640,200	467,507
1988	187,402,100	512,028
1989	186,401,900	510,690
1990	180,123,400	493,489
1991	194,481,100	532,825
1992	215,884,400	589,848
1993	195,499,800	535,616
1994	269,475,300	738,288
1995	235,989,200	646,546
1996	238,576,300	651,848
1997	250,309,700	685,780
1998	265,854,100	728,367
1999	267,920,500	734,029
2000	289,112,602	789,925
2001	312,402,300	855,897

Table 1 Continued

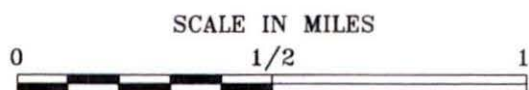
2002	356,893,000	977,789
2003	362,577,000	993,362
2004	351,765,000	961,107
2005	372,094,000	1,019,436
2006	395,613,000	1,083,871
2007	405,807,017	1,111,800
2008	396,363,000	1,082,959
2009	345,966,000	947,852
2010	383,463,000	1,050,584
2011	351,237,000	962,293
2012	357,959,000	978,030
2013	355,910,000	975,096
2014	354,104,000	970,148

FIGURE 1



BERNSTADT & LONDON, KY. QUADRANGLES

WEST LAUREL WATER ASSOCIATION
EXISTING COUNTY FARM PUMP STATION
LAUREL COUNTY, KENTUCKY



KENVIRONS, INC.

452 VERSAILLES ROAD, FRANKFORT, KENTUCKY
(502) 695-4357

Table 2	
Cost Estimate of Alternative 1	
West Laurel Water Association	
Category	Cost Associated
Legal	\$17,000
Engineering Fees (Design)	94,000
Engineering Fees (Construction)	23,000
Engineering Fees (Inspection)	72,000
Engineering Fees (Other)	24,000
Construction	1,405,000
Contingency	127,000
Miscellaneous	38,000
Total Project Cost	\$1,800,000

Table 3	
Cost Estimate of Alternative 2	
West Laurel Water Association	
Category	Cost Associated
Legal	\$19,000
Engineering Fees (Design)	115,200
Engineering Fees (Construction)	28,800
Engineering Fees (Inspection)	87,000
Engineering Fees (Other)	32,000
Construction	1,835,550
Contingency	152,450
Miscellaneous	40,000
Total Project Cost	\$2,310,000

Table 4.1		
Alternative 1		
Single Pump Station		
Life Cycle Cost Analysis		
Capital Expense		\$1,800,000
Annual O&M		
Purchased Water	\$1,033,604	
Purchased Power	23,214	
Materials & Supplies	215,639	
Contractual Services	540,197	
Insurance	24,260	
Bad Debt	22,051	
Miscellaneous	31,711	
Total O & M Cost	\$1,890,676	
USPW Factor	x 17.69	
Present Worth; Annual O&M		\$33,446,058
Salvage Value		
Existing Facilities	\$3,733,000	
Proposed Improvements	843,330	
Total Salvage Value	\$4,576,330	
SPPW Factor	x 0.79	
Present Worth; Salvage		\$3,615,301
Net Present Value:		\$31,630,758

Notes and Equations:

Interest Rate (i) = 1.2%

Planning Period (n) = 20 years

$$\text{Uniform Series Present Worth Factor (USPW)} = \frac{(1+i)^n - 1}{i(1+i)^n}$$

$$\text{Example USPW} = \frac{((1 + .012)^{20} - 1)}{(.012(1 + .012)^{20})} = 17.69$$

$$\text{Single Payment Present Worth Factor (SPPW)} = (1+i)^{-n}$$

$$\text{Example SPPW} = (1 + .012)^{-20} = 0.79$$

Table 4.2		
Alternative 2		
Two Pump Stations		
Life Cycle Cost Analysis		
Capital Expense		\$2,310,000
Annual O&M		
Purchased Water	\$1,033,604	
Purchased Power	40,000	
Materials & Supplies	215,639	
Contractual Services	540,197	
Insurance	24,260	
Bad Debt	22,051	
Miscellaneous	31,711	
Total O & M Cost	\$1,907,462	
USPW Factor	x 17.69	
Present Worth; Annual O&M		\$33,743,003
Salvage Value		
Existing Facilities	\$3,733,000	
Proposed Improvements	1,101,330	
Total Salvage Value	\$4,834,330	
SPPW Factor	x 0.79	
Present Worth; Salvage		\$3,819,121
Net Present Value:		\$32,233,882

Notes and Equations:

Interest Rate (i) = 1.2%

Planning Period (n) = 20 years

$$\text{Uniform Series Present Worth Factor (USPW)} = \frac{(1+i)^n - 1}{i(1+i)^n}$$

$$\text{Example USPW} = \frac{((1 + .012)^{20} - 1)}{(.012(1 + .012)^{20})} = 17.69$$

$$\text{Single Payment Present Worth Factor (SPPW)} = (1+i)^{-n}$$

$$\text{Example SPPW} = (1 + .012)^{-20} = 0.79$$

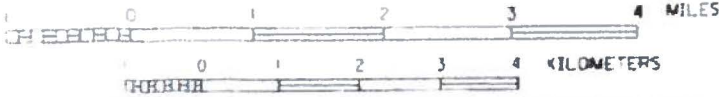
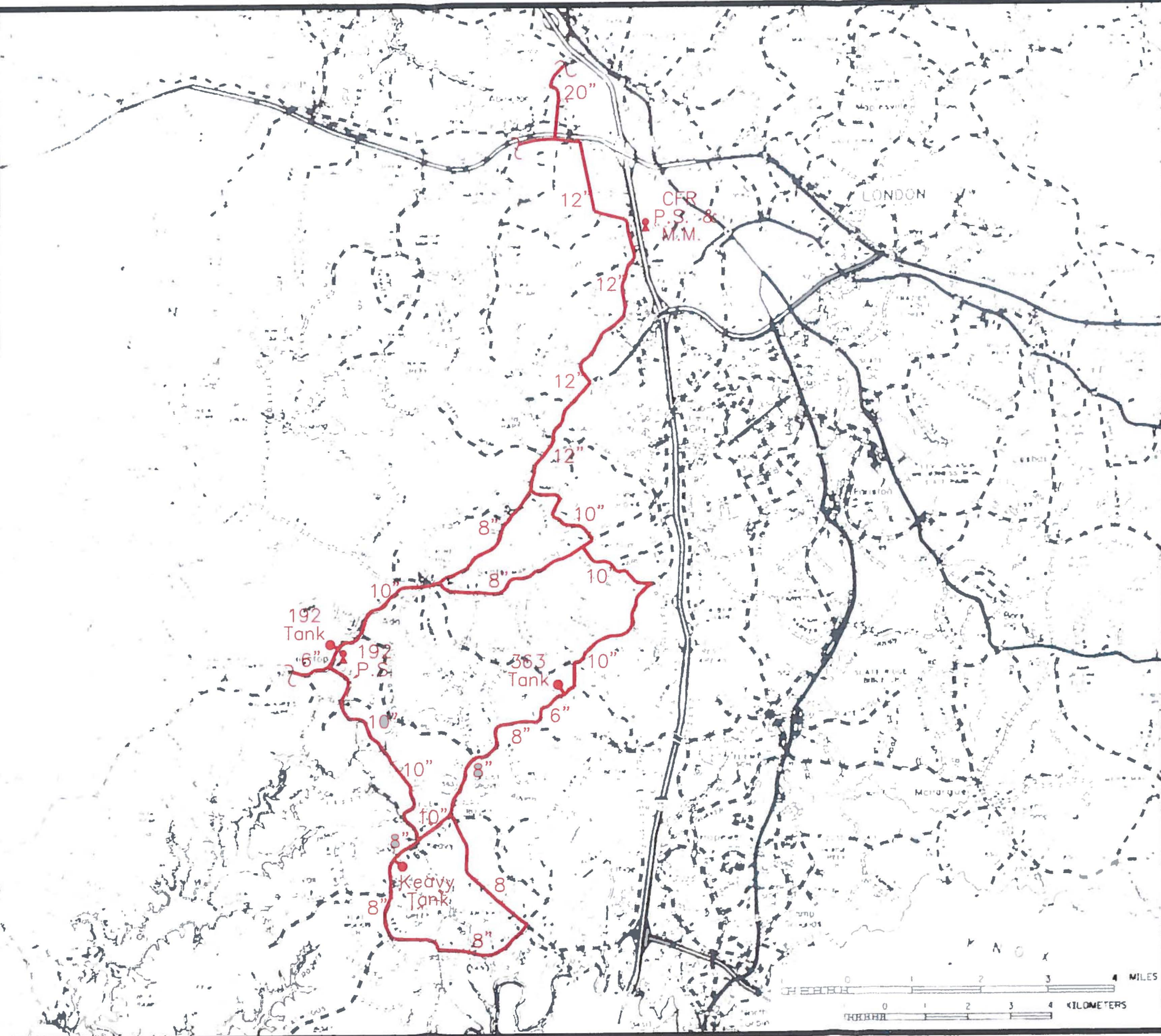
FIGURE 2

N:\P\2015045\MISCELLANEOUS\County Map.dwg, 11/4/2016 9:17:49 AM, BLH

1999 EDITION
GENERAL HIGHWAY MAP
LAUREL COUNTY
KENTUCKY

PREPARED BY THE
KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
DIVISION OF PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE 1:125,000
CONFORMAL CONIC PROJECTION



WEST LAUREL WATER ASSOCIATION
NEW COUNTY FARM PUMP STATION
LAUREL COUNTY, KENTUCKY

DRAWN BY: PTH
CHECKED BY: BLH
DATE: 01/16
SCALE: As Noted
REV:

KENVIRONS, INC.
FRANKFORT, KENTUCKY



PROJECT NO.
2015045

FIGURE NO.
2

FIGURE 3

Figure 3
Average Daily Water Purchase
West Laurel Water Association

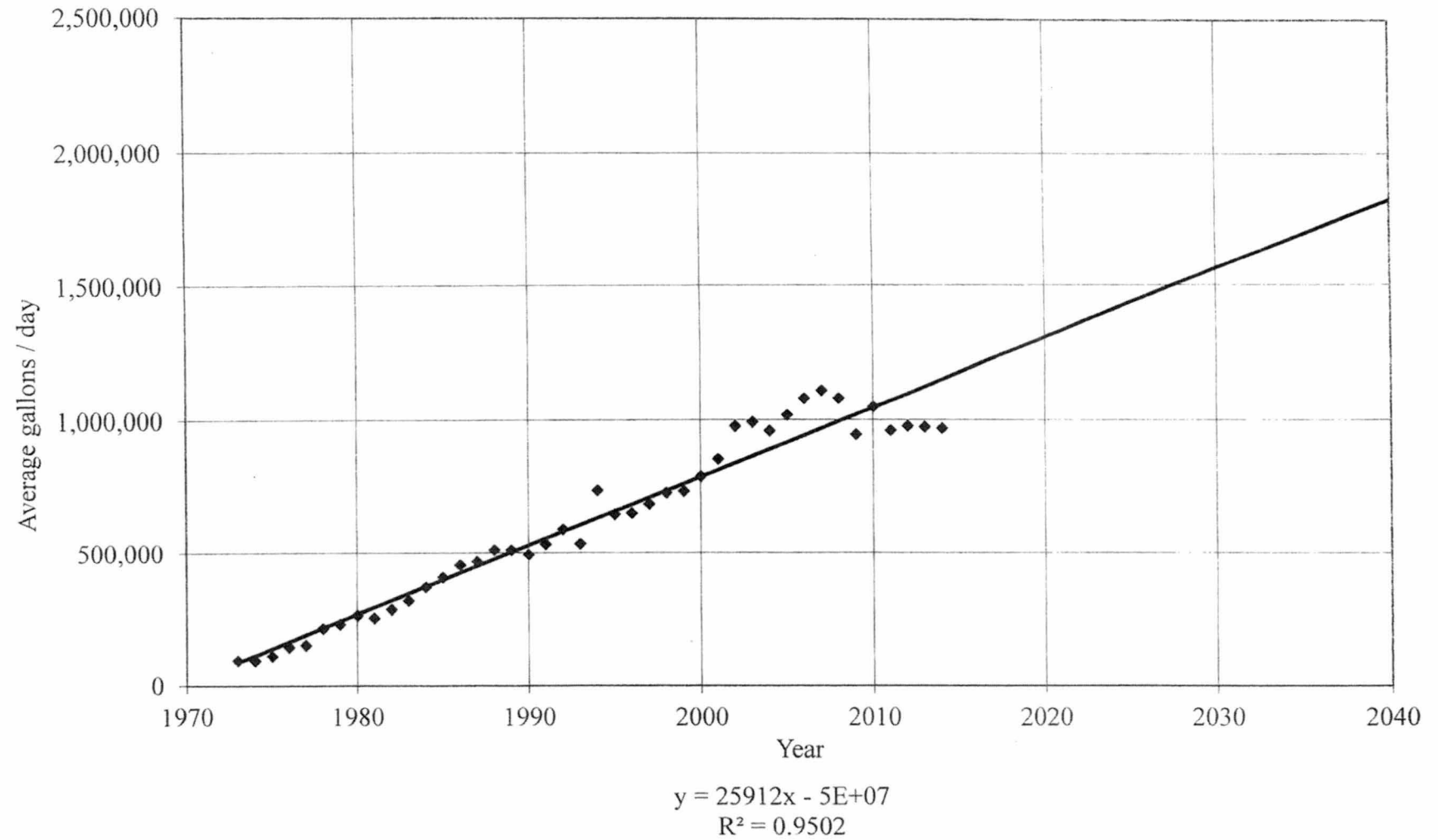
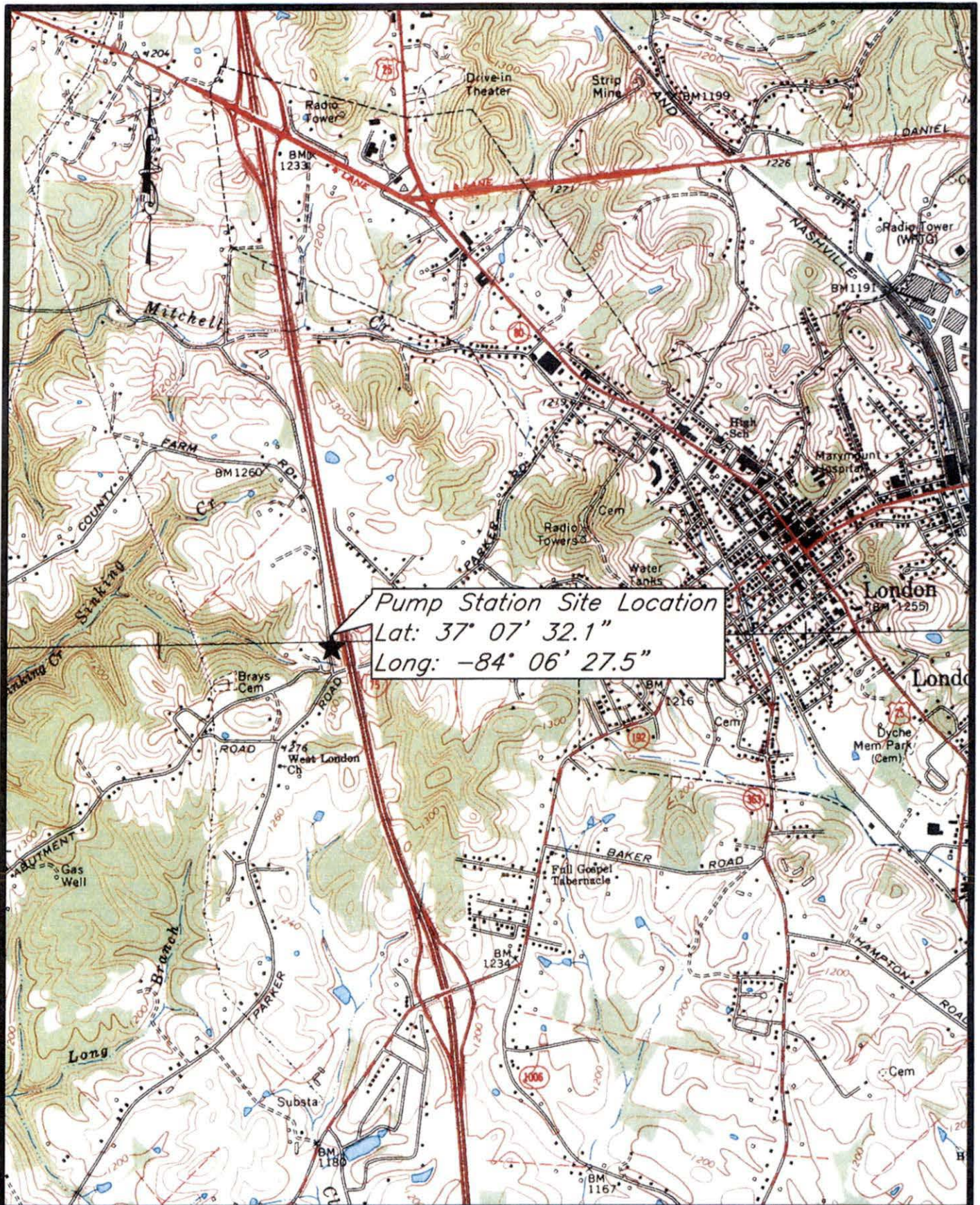
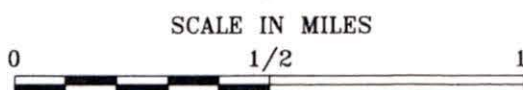


FIGURE 4



BERNSTADT & LONDON, KY. QUADRANGLES

WEST LAUREL WATER ASSOCIATION
NEW COUNTY FARM PUMP STATION
LAUREL COUNTY, KENTUCKY



KENVIRONS, INC.

452 VERSAILLES ROAD, FRANKFORT, KENTUCKY
(502) 695-4357

FIGURE 5

N:\P\2015045\MISCELLANEOUS\County Ma-2.dwg, 11/4/2016 9:24:04 AM, BLH

1999 EDITION

GENERAL HIGHWAY MAP

LAUREL COUNTY

KENTUCKY

PREPARED BY THE

KENTUCKY TRANSPORTATION CABINET

DEPARTMENT OF HIGHWAYS

DIVISION OF PLANNING

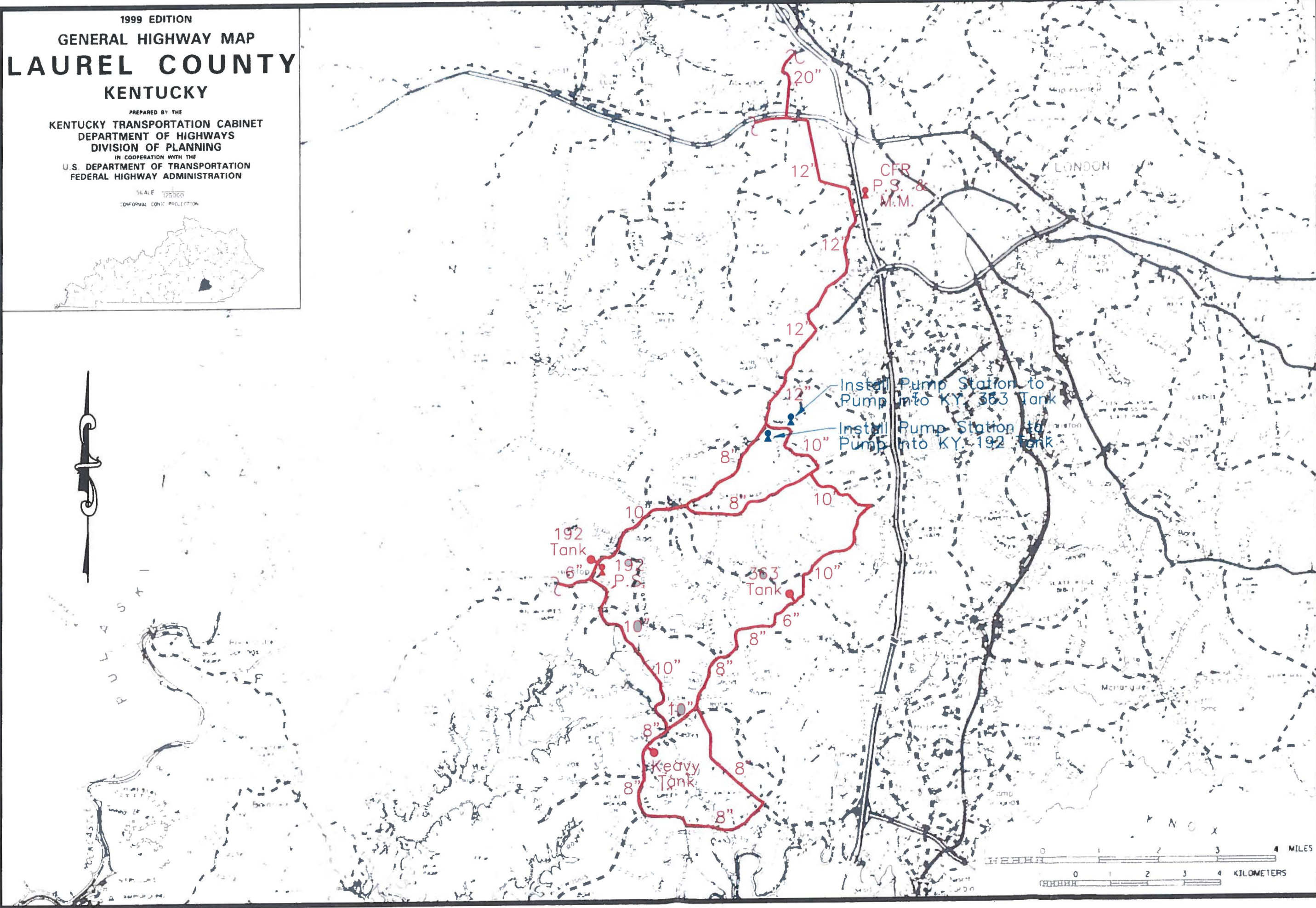
IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SCALE 1:25000

CONFORMAL CONIC PROJECTION



WEST LAUREL WATER ASSOCIATION

NEW COUNTY FARM PUMP STATION

LAUREL COUNTY, KENTUCKY

DRAWN BY: PTH

CHECKED BY: BLH

CHECKED BY: RVW

DATE: 01/16

SCALE: As Noted

REV:

KENVIRONS, INC.

FRANKFORT, KENTUCKY

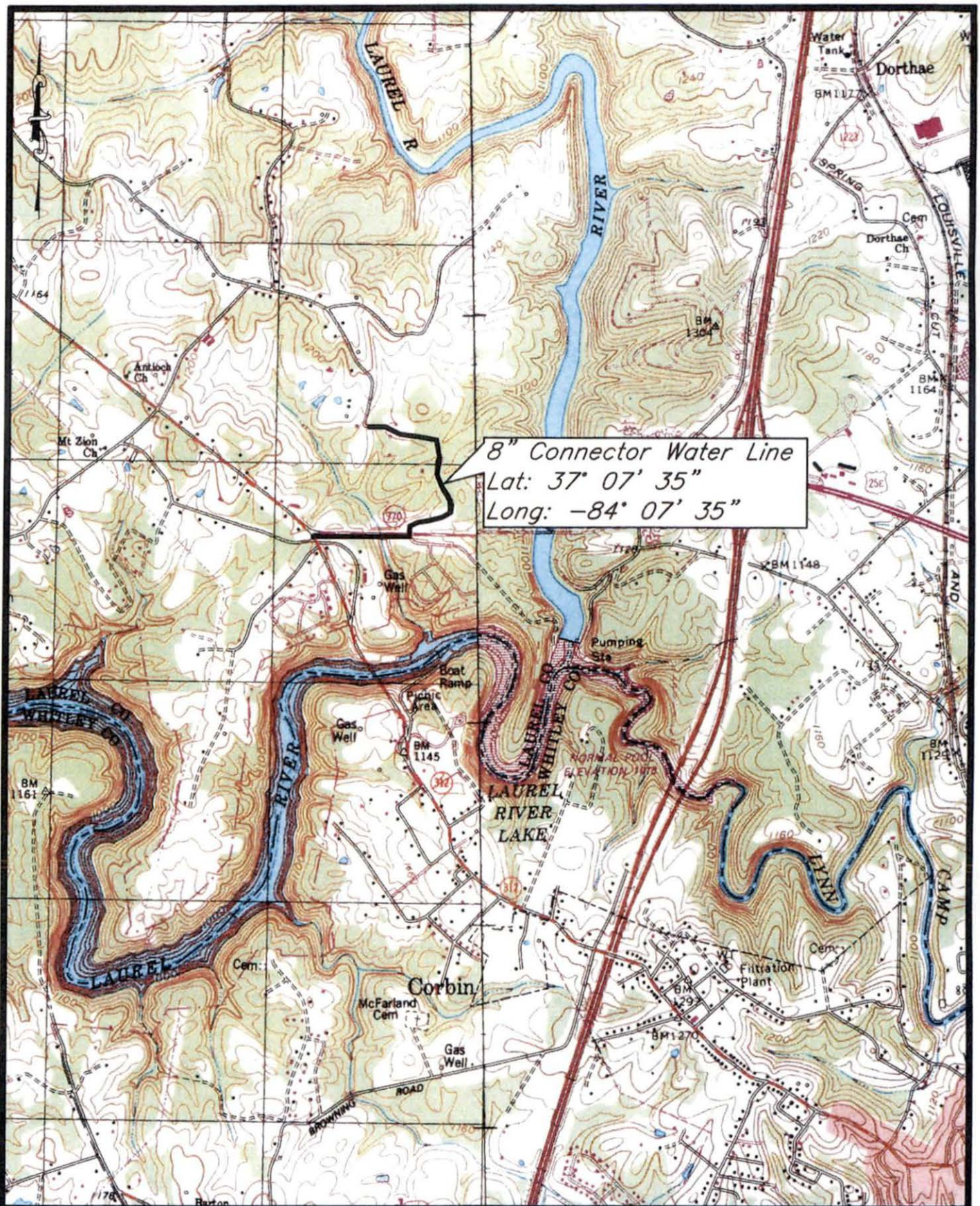
PROJECT NO.

2015045

FIGURE NO.

5

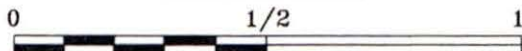
FIGURE 6



VOX, CORBIN, KY. QUADRANGLE

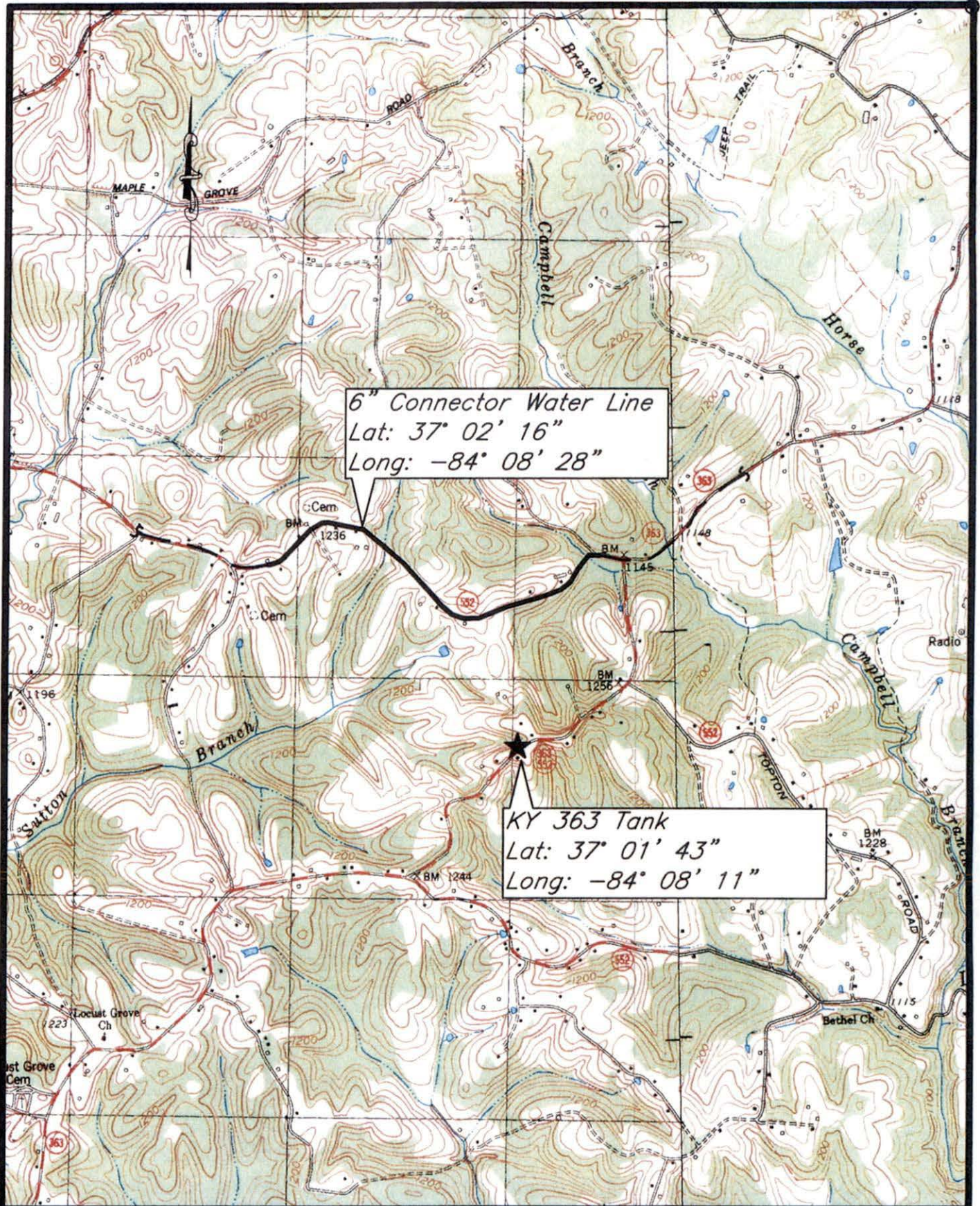
WEST LAUREL WATER ASSOCIATION
NEW COUNTY FARM PUMP STATION
LAUREL COUNTY, KENTUCKY

SCALE IN MILES



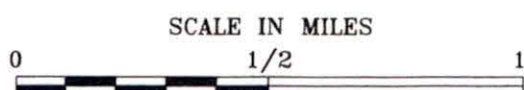
KENVIRONS, INC.

452 VERSAILLES ROAD, FRANKFORT, KENTUCKY
(502) 895-4357



LONDON SOUTHWEST, LILY QUADRANGLES

WEST LAUREL WATER ASSOCIATION
NEW COUNTY FARM PUMP STATION
LAUREL COUNTY, KENTUCKY



KENVIRONS, INC.

452 VERSAILLES ROAD, FRANKFORT, KENTUCKY
(502) 695-4357

**WEST LAUREL WATER ASSOCIATION
EXISTING OPERATING BUDGET
FOR YEAR ENDING 2014**

REVENUE REQUIREMENTS

2014

Operation & Maintenance Expenses

Source of Supply	\$ 1,033,604
Water Treatment	\$ 28,724
Transmission & Distribution	\$ 427,119
Customer Accounts	\$ 280,549
Administration & General	\$ 120,678

\$ 1,890,674.00

Debt Service

RD Annual Principal & Interest	\$ 185,375
--------------------------------	------------

\$ 185,375.00

Debt Service Coverage, Reserve, & Service Fees

RD	\$ 18,537.50
----	--------------

\$ 18,537.50

Other

Total Taxes Paid	\$ 5,761
Depreciation Expenses	\$ 201,331

\$207,092

TOTAL REVENUE REQUIREMENTS

\$2,301,679

UTILITY INCOME

Operating Income

Water Sales	\$ 2,036,052
Miscellaneous Services	\$ 99,250

\$2,135,302

Non-Operating Income

Interest on Deposits	\$ 732
Other, Non-Utility	\$ -

\$732

TOTAL UTILITY INCOME

\$2,136,034

Debt Service Summary

Description of Obligation	Principal Balance		Principal Payment	Interest Payment	Annual Payment
	2012	2013			
FHA Loan maturing in 2012	\$ -	\$ -	\$ -	\$ 592	\$ 592
FHA Loan maturing in 2019	\$ 162,498	\$ 144,223	\$ 18,275	\$ 8,995	\$ 27,270
FHA Loan maturing in 2028	\$ 320,538	\$ 306,920	\$ 13,618	\$ 16,675	\$ 30,293
FHA Loan maturing in 2028	\$ 98,060	\$ 93,891	\$ 4,169	\$ 5,102	\$ 9,271
FHA Loan maturing in 2035	\$ 415,783	\$ 405,995	\$ 9,788	\$ 22,317	\$ 32,105
FHA Loan maturing in 2042	\$ 1,392,062	\$ 1,370,126	\$ 21,936	\$ 67,118	\$ 89,054
Total	\$ 2,388,941	\$ 2,321,155	\$ 67,786	\$ 120,799	\$ 187,993

TOTAL EXISTING PRINCIPAL & INTEREST \$187,993

YEAR	2012	2013	2014
Principal per Balance in Annual Report	\$2,388,941	\$2,321,155	\$2,250,010
Difference from previous year	-	67,786	71,145

Description of Obligation	Principal Balance		Principal Payment	Interest Accrued	Interest Payed	Annual Payment
	2013	2014				
FHA Loan maturing in 2019	\$ 144,223	\$ 125,034	\$ 19,189	\$ 5,224	\$ 24,413	\$ 43,602
FHA Loan maturing in 2028	\$ 306,920	\$ 292,621	\$ 14,299	\$ 3,848	\$ 18,147	\$ 32,446
FHA Loan maturing in 2028	\$ 93,891	\$ 89,514	\$ 4,377	\$ 1,177	\$ 5,554	\$ 9,931
FHA Loan maturing in 2035	\$ 405,995	\$ 395,693	\$ 10,302	\$ 4,610	\$ 14,912	\$ 25,214
FHA Loan maturing in 2042	\$ 1,370,126	\$ 1,347,148	\$ 22,978	\$ 28,226	\$ 51,204	\$ 74,182
Total	\$ 2,321,155	\$ 2,250,010	\$ 71,145	\$ 43,085	\$ 114,230	\$ 185,375

TOTAL EXISTING PRINCIPAL & INTEREST \$ 185,375

REVENUE REQUIREMENTS FOR PROPOSED PROJECT

PROPOSED PROJECT FUNDING

Rural Development Grant	540,000
Rural Development Loan	<u>1,260,000</u>
	\$1,800,000

REVENUE REQUIREMENT FOR PROPOSED PROJECT

Operation & Maintenance Expenses		
Transmission & Distribution		\$5,000
Debt Service		
RD Loan Amount	\$1,260,000	
Term of Loan, Years	38	
Interest Rate	2.75%	
Capital Recovery Factor	0.0427	
RD Annual Principal & Interest		\$53,862
Debt Service Coverage, Reserve, & Service Fees		
Rural Development Coverage at 10%		5,386
Other		
Depreciation Expenses (see Note 1)		<u>15,750</u>
TOTAL REVENUE REQUIREMENTS		
FOR PROPOSED PROJECT		\$74,998

Note 1 - Depreciation was evaluated using 50% of the RD Loan amount and applying straight-line depreciation over a 40 year life cycle.

REVISED REVENUE REQUIREMENTS AND PERCENT RATE INCREASE

Operation & Maintenance Expenses			
Existing	\$1,890,674		
Proposed	<u>5,000</u>		
			\$1,895,674
Debt Service			
Existing	\$185,375		
Proposed	<u>53,862</u>		
			\$239,237
Debt Service Coverage, Reserve, & Service Fees			
Existing	\$18,537.50		
Proposed	<u>5,386</u>		
			\$23,924
Taxes Other Than Income & Depreciation			
Existing	\$207,092		
Proposed	<u>15,750</u>		
			\$222,842
PROJECTED REVENUE REQUIREMENTS			<u>\$2,381,677</u>

Less Current Income from Miscellaneous Services and Non-Operating Sources	\$99,982
--	----------

REVISED REVENUE REQUIREMENT FROM SALES	<u>\$2,281,695</u>
---	---------------------------

PERCENT RATE INCREASE

<u>Revenue Required from Water Sales</u>	=	12.06%
Current Water Sales Income		

Monthly Water Rates for 5/8" x 3/4" Meter

Current Cost for 5,000 gallons	\$38.50
Proposed Cost for 5,000 gallons	\$43.14

**West Laurel Water Association
CFR Pump Station Replacement**

Proposed Percent Rate Increase..... 12.06%

3/4" Meter

Water Use		Existing Rate	Proposed Rate
First	1,000	\$11.74 Min. Bill	\$ 13.16 Min. Bill
Next	2,000	\$6.87 /1,000 gal.	\$ 7.70 /1,000 gal.
Next	2,000	\$6.51 /1,000 gal.	\$ 7.30 /1,000 gal.
Next	5,000	\$6.06 /1,000 gal.	\$ 6.79 /1,000 gal.
Over	10,000	\$4.89 /1,000 gal.	\$ 5.48 /1,000 gal.

1" Meter

Water Use		Existing Rate	Proposed Rate
First	5,000	\$38.50 Min. Bill	\$ 43.14 Min. Bill
Next	5,000	\$6.06 /1,000 gal.	\$ 6.79 /1,000 gal.
Over	10,000	\$4.89 /1,000 gal.	\$ 5.48 /1,000 gal.

2" Meter

Water Use		Existing Rate	Proposed Rate
First	20,000	\$117.70 Min. Bill	\$ 131.90 Min. Bill
Over	20,000	\$4.89 /1,000 gal.	\$ 5.48 /1,000 gal.

3" Meter

Water Use		Existing Rate	Proposed Rate
First	30,000	\$166.60 Min. Bill	\$ 186.70 Min. Bill
Over	30,000	\$4.89 /1,000 gal.	\$ 5.48 /1,000 gal.

Wholesale Rate

Water Use	Existing Rate	Proposed Rate
By the gallon	\$4.46 /1,000 gal.	\$ 5.00 /1,000 gal.

Wholesale User

Utility	Existing Rate	Proposed Rate
Cumberland Falls Highway Water District	\$4.46 /1,000 gal.	\$ 5.00 /1,000 gal.



FINAL ENGINEERING REPORT

for

WEST LAUREL WATER ASSOCIATION

CONTRACT 1—NEW COUNTY FARM PUMP STATION

CONTRACT 2—WATERLINE IMPROVEMENTS

CONTRACT 3—KY 363 WATER TANK REHABILITATION

RECEIVED

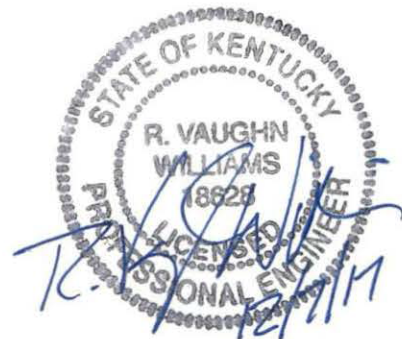
DEC 21 2017

PUBLIC SERVICE
COMMISSION

PREPARED BY:

KENVIRONS, INC.
452 VERSAILLES ROAD
FRANKFORT, KENTUCKY 40601

PROJECT NO. 2015045



DECEMBER 2017

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE No.</u>
1. INTRODUCTION	2
2. BIDS RECIEVED	2
3. PROJECT BUDGET	2
4. RECCOMENDATIONS.....	4

<u>APPENDIX</u>	<u>PAGE No.</u>
APPENDIX A: CERTIFIED BID TABULATIONS	5
APPENDIX B: COST QUOTATIONS (METERS)	6

1. INTRODUCTION

The West Laurel Water Association made an application for financial assistance to USDA Rural Development for the construction of the New County Farm Pump Station, replacing the waterlines along City Dam Road and KY 552, and rehabilitating KY 363 Water Storage Tank. A Preliminary Engineering Report dated July 2016 describes in detail the scope and need for this project. A Revised Preliminary Engineering Report dated November 2016 was prepared describing additional items to be included in the project if excess funds were available and is included herewith by reference. This project was bid as three distinct contracts; Contract 1–New County Farm Pump Station, Contract 2–City Dam Road Waterline Improvements, and Contract 3–KY 363 Water Storage Tank Rehabilitation.

2. BIDS RECIEVED

Bids were opened and read aloud at 1:30 P.M. on November 9, 2017 at the West Laurel Water Association Office. Two (2) bids were received for Contract 1–New County Farm Pump Station. The low bidder was Herrick Company, Inc. of Lawrenceburg, Kentucky in the amount of \$497,725.00. The percent difference between the two bids was 1.66%.

Seven (7) bids were received for Contract 2–Waterline Improvements. The low bidder was Bailey Excavating, LLC of London, Kentucky in the amount of \$239,740.00. The percent difference between the two lowest bids was 9.90%.

Four (4) bids were received for Contract 3–KY 363 Water Storage Tank Rehabilitation. Two of the four bids received were rejected due to the bid being submitted on the incorrect bid form and not acknowledging documents. The low bidder for Contract 3 was C & S Quality Services, LLC of Lawrenceburg, Kentucky in the amount of \$118,850.00. The percent difference between the two valid bids was 0.13%.

Certified bid tabulations were prepared and are contained in Appendix A.

3. PROJECT BUDGET

The West Laurel Water Association has actively pursued funding for the proposed project. Table 1 is a summary of the funding that has been secured.

**TABLE 1
PROJECT FUNDING**

Rural Development (RD) Loan	1,260,000.00
Rural Development (RD) Grant	540,000.00
Total per RD Letter of Conditions	<u>\$1,800,000.00</u>

Table 2 outlines the project budget as established in the RD Letter of Conditions and revised based upon the bids received.

**TABLE 2
PROJECT BUDGET**

<u>Budget Item</u>	<u>R.D. Letter of Conditions</u>	<u>Revised Cost</u>
Development	\$1,405,550.00	\$1,400,904.00*
Legal and Administrative	17,000.00	13,250.00
Engineering Fees	127,000.00	91,800.00
Interest	38,000.00	38,000.00
Other Engineering	80,000.00	53,821.00
Environmental	6,000.00	9,500.00
Contingencies	126,450.00	192,725.00
Total Funding Available	\$1,800,000.00	\$1,800,000.00

* See description below and TABLE 3 for explanation of Development cost.

The difference between the sums of the construction bids (\$856,315) and the engineer's opinion of probable construction cost (\$1,405,550) is \$549,235 under the initial estimate which equates to a 58.2% difference.

The Revised Preliminary Engineering Report stated that any funding available after the completion of construction would be utilized to purchase new radio read water meters. With the amount of funding available, the Water Association obtained cost quotations to purchase these meters. The quotation is attached in Appendix B. The Water Association will solicit formal bids for these meters upon substantial completion of Contracts 1 and 2. New radio read water meters will be installed throughout the service area at a rate of approximately 150 meters per month. All meters shall be installed by end of year 2021.

Further, the Water Association solicited a proposal from the low bidder of Contract 2 to connect the existing water meters and spur lines to the proposed waterlines so the existing main could be removed from service. The Water Association had originally planned to do this work using their own employees and equipment. The prices submitted were reviewed and were found to be acceptable for the nature of work requested. This work will be in addition to the work to be performed as part of Contract 2.

The Water Association also obtained cost proposals to upgrade the existing Supervisory Control and Data Acquisition System (SCADA) located at the Wood Creek Water Treatment Plant (WTP). The existing SCADA System is used to monitor the pump stations and tanks in the Wood Creek Water District, East Laurel Water District, and West Laurel Water Association, jointly, including the New County Farm Pump Station being constructed under Contract 1. All three (3) utilities will derive benefit from the purchase

of the new SCADA equipment and the cost shall be divided equally among the three. The portion of cost to be absorbed by the West Laurel Water Association is listed in Table 3. Table 3 provides a summary of these additional costs compared with the original Opinion of Probable Cost.

**TABLE 3
DEVELOPMENT COST**

<u>Budget Item</u>	<u>Opinion of Probable Cost</u>	<u>Revised Cost</u>
Contract 1 – New County Farm P.S.	\$990,000.00	\$497,725.00
Contract 2 – Waterline Improvements	265,550.00	239,740.00
Contract 3 – KY 363 Tank Rehabilitation	150,000.00	118,850.00
4,000 Radio Read Water Meters	-	539,960.00
WTP Telemetry Equipment	-	4,629.00
Total Funding Available	\$1,405,550.00	\$1,400,904.00

4. RECCOMENDATIONS

1. It is recommended that the contract for Contract 1–New County Farm Pump Station be awarded to Herrick Company, Inc. in the amount of \$497,725.00. The contractor has constructed other similar projects and all reference checks have been exceptional.
2. It is recommended that the contract for Contract 2–Waterline Improvements be awarded to Bailey Excavating, LLC in the amount of \$239,740.00. The contractor has constructed other similar projects and all reference checks were acceptable.
3. It is recommended that the contract for Contract 3–KY 363 Water Storage Tank Rehabilitation be awarded to C & S Quality Services, LLC in the amount of \$118,850. The contractor has performed other similar projects and all reference checks were acceptable.
4. It is recommended that all funding remaining after the substantial completion of the original contracts be utilized as set forth and described in this report.
5. It is recommended that the user rates be adjusted to generate the revenue required to pay the debt service, coverage, and depreciation cost associated with these projects. The new rates shall be as outlined in the Summary Addendum to Preliminary Engineering Report and the RD Letter of Conditions.

APPENDIX A
CERTIFIED BID TABULATIONS

BID TABULATIONS

Sheet 1 of 1

KENVIRONS, INC.
452 Versailles Road
Frankfort, KY 40601

Owner: West Laurel Water Association
Project: Contract No. 1: New County Farm Pump Station
Bid Date: November 9, 2017 at 1:30 P.M. Local Time

Project No. 2015045

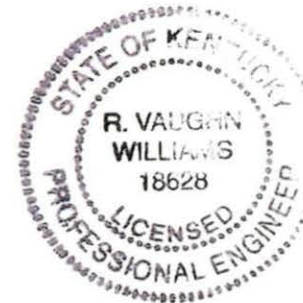
Base Bid				Herrick Company, Inc. 1385 Tracy Road Lawrenceburg, KY 40342		Jave, LLC 2137 Island Drive Lexington, KY 40502	
Item No.	Item Description	Unit	Quantity	Unit Cost	Cost	Unit Cost	Cost
1	County Farm Pump Station	LS	1	\$420,325.00	\$420,325.00	\$360,000.00	\$360,000.00
2	Yard Piping	LS	1	41,400.00	41,400.00	120,000.00	120,000.00
3	Bituminous Concrete Paving	LS	1	3,500.00	3,500.00	4,000.00	4,000.00
4	Structural Fill	TON	140	100.00	14,000.00	25.00	3,500.00
5	Telemetry Equipment Allowance	LS	1	18,500.00	18,500.00	18,500.00	18,500.00
TOTAL BASE BID					\$497,725.00		\$506,000.00

The above is a true and complete tabulation of the Bids received by West Laurel Water Association at their office located at 1670 E. Hal Rogers Parkway, London, KY, on Thursday, November 9, 2017 at 1:30 P.M. Local Time.

By:


R. Vaughn Williams, P.E.


Date



BID TABULATIONS

Sheet 1 of 2

KENVIRONS, INC.
452 Versailles Road
Frankfort, KY 40601

Owner West Laurel Water Association
Project Contract 2: Waterline Improvements
Bid Date November 9, 2017 at 1:30 P.M. Local Time

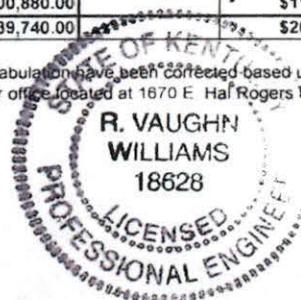
Project No. 2015045

Contract #2				Bailey Excavating, LLC 595 Dan Gabbard Road London, KY 40741		D & H Contracting Co., Inc. 2003 Lakeview Drive London, KY 40741		Clay Pipeline 70 Fox Hollow Road Manchester, KY 40962		Akins Excavating Co., Inc. 182 Busy Lane Corbin, KY 40701	
Item No.	Item Description	Unit	Quantity	Unit Cost	Cost	Unit Cost	Cost	Unit Cost	Cost	Unit Cost	Cost
1	8" PVC, SDR-17 Pipe	LF	4,850	\$14.50	\$70,325.00	\$17.50	\$84,875.00	\$16.60	\$80,510.00	\$19.50	\$94,575.00
2	Bored Steel Encasement for 8" Pipe	LF	160	195.00	31,200.00	190.00	30,400.00	129.00	20,640.00	225.00	36,000.00
3	Free Bore for 8" Pipe	LF	75	75.00	5,625.00	75.00	5,625.00	43.00	3,225.00	25.00	1,875.00
4	8"x8" Tapping Sleeve & Valve	EA	1	2,495.00	2,495.00	3,070.00	3,070.00	3,000.00	3,000.00	3,165.00	3,165.00
5	8" Gate Valve	EA	1	1,150.00	1,150.00	1,580.00	1,580.00	1,480.00	1,480.00	1,380.00	1,380.00
6	3" Gate Valve	EA	2	695.00	1,390.00	1,000.00	2,000.00	892.00	1,784.00	735.00	1,470.00
7	3" Stub-Out	EA	2	575.00	1,150.00	400.00	800.00	435.00	870.00	285.00	570.00
8	Fire Hydrant	EA	3	3,550.00	10,650.00	3,700.00	11,100.00	4,780.00	14,340.00	3,890.00	11,670.00
9	Pavement Replacement: Concrete	LF	50	38.00	1,900.00	15.00	750.00	45.00	2,250.00	40.00	2,000.00
10	Pavement Replacement: Asphalt	LF	25	20.00	500.00	15.00	375.00	20.00	500.00	35.00	875.00
11	Pavement Replacement: Stone	LF	185	15.00	2,775.00	8.00	1,480.00	25.00	4,625.00	15.00	2,775.00
12	Final Grade, Fertilize, & Seed	LF	4,850	2.00	9,700.00	2.00	9,700.00	2.00	9,700.00	2.00	9,700.00
TOTAL CONTRACT #2					\$138,860.00		\$151,755.00		\$142,924.00		\$166,055.00

Alternate 1				Bailey Excavating, LLC		D & H Contracting Co., Inc.		Clay Pipeline		Akins Excavating Co., Inc.	
Item No.	Item Description	Unit	Quantity	Unit Cost	Cost	Unit Cost	Cost	Unit Cost	Cost	Unit Cost	Cost
1	6" PVC, SDR-17 Pipe	LF	6,700	\$8.00	\$53,600.00	\$10.00	\$67,000.00	\$12.35	\$82,745.00	\$13.00	\$87,100.00
2	Bored Steel Encasement for 6" Pipe	LF	40	145.00	5,800.00	140.00	5,600.00	99.00	3,960.00	225.00	9,000.00
	Free Bore for 6" Pipe	LF	30	70.00	2,100.00	75.00	2,250.00	40.00	1,200.00	25.00	750.00
3	10"x6" Tapping Sleeve & Valve	EA	1	1,950.00	1,950.00	2,800.00	2,800.00	2,700.00	2,700.00	2,710.00	2,710.00
4	3"x3" Tapping Sleeve & Valve	EA	1	1,550.00	1,550.00	2,200.00	2,200.00	1,880.00	1,880.00	1,910.00	1,910.00
5	6" Gate Valve	EA	4	925.00	3,700.00	1,185.00	4,740.00	1,180.00	4,720.00	975.00	3,900.00
6	3" Gate Valve	EA	1	695.00	695.00	1,000.00	1,000.00	892.00	892.00	735.00	735.00
7	6" Stub-Out	EA	2	1,050.00	2,100.00	500.00	1,000.00	553.00	1,106.00	395.00	790.00
8	3" Stub-Out	EA	1	575.00	575.00	400.00	400.00	425.00	425.00	285.00	285.00
9	Fire Hydrant	EA	2	3,550.00	7,100.00	3,700.00	7,400.00	4,670.00	9,340.00	3,890.00	7,780.00
10	Pavement Replacement: Concrete	LF	120	38.00	4,560.00	15.00	1,800.00	45.00	5,400.00	40.00	4,800.00
	Pavement Replacement: Asphalt	LF	30	20.00	600.00	15.00	450.00	20.00	600.00	35.00	1,050.00
	Pavement Replacement: Stone	LF	210	15.00	3,150.00	8.00	1,680.00	25.00	5,250.00	15.00	3,150.00
11	Final Grade, Fertilize, & Seed	LF	6,700	2.00	13,400.00	2.00	13,400.00	2.00	13,400.00	2.00	13,400.00
TOTAL ALTERNATE 1					\$100,880.00		\$111,720.00		\$133,618.00		\$137,360.00
TOTAL BASE BID = CONTRACT #2 + ALTERNATE 1					\$239,740.00		\$263,475.00		\$276,542.00		\$303,415.00

* Denotes an arithmetic error was made on the Bids submitted. Values reported in the Bid Tabulation have been corrected based upon the unit price submitted. The above is a true and complete tabulation of the Bids received by West Laurel Water Association at their office located at 1670 E. Hal Rogers Parkway, London, KY on November 9, 2017 at 1:30 P.M. Local Time.

By:  11/10/17
R. Vaughn Williams, P.E. Date



BID TABULATIONS

Sheet 2 of 2

KENVIRONS, INC
452 Versailles Road
Frankfort, KY 40601

Owner: West Laurel Water Association
Project: Contract 2: Waterline Improvements
Bid Date: November 9, 2017 at 1:30 P.M. Local Time

Project No. 2015045

Contract #2				Weddle Enterprises Inc 25 Shanes Lane Somerset, KY 42501		Cumberland Pipeline, LLC 4129 Highway 379 Russell Springs, KY 42642		Twin States Utilities, Inc. P.O. Box 14 Mount Hermon, KY 42157	
Item No.	Item Description	Unit	Quantity	Unit Cost	Cost	Unit Cost	Cost	Unit Cost	Cost
1	8" PVC, SDR-17 Pipe	LF	4,850	\$27.00	\$130,950.00	\$35.00	\$169,750.00	\$29.00	\$140,650.00
2	Bored Steel Encasement for 8" Pipe	LF	160	212.00	33,920.00	265.00	42,400.00	300.00	48,000.00
3	Free Bore for 8" Pipe	LF	75	40.00	3,000.00	25.00	1,875.00	75.00	5,625.00
4	8"x8" Tapping Sleeve & Valve	EA	1	2,700.00	2,700.00	2,804.00	2,804.00	2,600.00	2,600.00
5	8" Gate Valve	EA	1	1,300.00	1,300.00	1,250.00	1,250.00	1,250.00	1,250.00
6	3" Gate Valve	EA	2	650.00	1,300.00	700.00	1,400.00	650.00	1,300.00
7	3" Stub-Out	EA	2	700.00	1,400.00	1,600.00	3,200.00	1,000.00	2,000.00
8	Fire Hydrant	EA	3	3,950.00	11,850.00	3,455.00	10,365.00	4,000.00	12,000.00
9	Pavement Replacement, Concrete	LF	50	66.00	3,300.00	50.00	2,500.00	100.00	5,000.00
10	Pavement Replacement, Asphalt	LF	25	85.25	2,131.25	50.00	1,250.00	100.00	2,500.00
11	Pavement Replacement, Stone	LF	185	14.70	2,719.50	20.00	3,700.00	22.00	4,070.00
12	Final Grade, Fertilize, & Seed	LF	4,850	2.00	9,700.00	2.00	9,700.00	2.00	9,700.00
TOTAL CONTRACT #2					\$204,270.75		\$250,194.00		\$234,695.00

Alternate 1				Weddle Enterprises Inc.		Cumberland Pipeline, LLC		Twin States Utilities, Inc.	
Item No.	Item Description	Unit	Quantity	Unit Cost	Cost	Unit Cost	Cost	Unit Cost	Cost
1	6" PVC, SDR-17 Pipe	LF	6,700	\$10.60	\$71,020.00	\$14.00	\$93,800.00	\$18.50	\$123,950.00
2	Bored Steel Encasement for 6" Pipe	LF	40	130.00	5,200.00	245.00	9,800.00	180.00	7,200.00
	Free Bore for 6" Pipe	LF	30	40.00	1,200.00	25.00	750.00	75.00	2,250.00
3	10"x6" Tapping Sleeve & Valve	EA	1	2,300.00	2,300.00	2,050.00	2,050.00	2,200.00	2,200.00
4	3"x3" Tapping Sleeve & Valve	EA	1	1,750.00	1,750.00	1,500.00	1,500.00	1,600.00	1,600.00
5	6" Gate Valve	EA	4	1,000.00	4,000.00	888.00	3,552.00	850.00	3,400.00
6	3" Gate Valve	EA	1	650.00	650.00	700.00	700.00	600.00	600.00
7	6" Stub-Out	EA	2	925.00	1,850.00	600.00	1,200.00	1,500.00	3,000.00
8	3" Stub-Out	EA	1	970.00	970.00	600.00	600.00	1,000.00	1,000.00
9	Fire Hydrant	EA	2	3,900.00	7,800.00	3,150.00	6,300.00	4,000.00	8,000.00
10	Pavement Replacement, Concrete	LF	120	1.00	120.00	50.00	6,000.00	100.00	12,000.00
	Pavement Replacement, Asphalt	LF	30	1.00	30.00	50.00	1,500.00	100.00	3,000.00
	Pavement Replacement, Stone	LF	210	12.00	2,520.00	20.00	4,200.00	22.00	4,620.00
11	Final Grade, Fertilize, & Seed	LF	6,700	2.00	13,400.00	2.00	13,400.00	2.00	13,400.00
TOTAL ALTERNATE 1					\$112,810.00		\$145,352.00		\$186,220.00
TOTAL BASE BID = CONTRACT #2 + ALTERNATE 1					\$317,080.75		\$395,546.00		\$420,915.00

BID TABULATIONS

Sheet 1 of 1

KENVIRONS, INC.
452 Versailles Road
Frankfort, KY 40601

Owner: West Laurel Water Association
Project: Contract No. 3: KY 363 Water Storage Tank Rehabilitation
Bid Date: November 9, 2017 at 1:30 P.M. Local Time

Project No. 2015045

Base Bid				C & S Quality Services, LLC. 1042 Forest Hill Lawrenceburg, KY 40342		Huffman Tank & Tower, Inc. 210 Burkesville Road Albany, KY 42602	
Item No.	Item Description	Unit	Quantity	Unit Cost	Cost	Unit Cost	Cost
1	Repair, Clean, Paint & Seal Interior & Exterior	LS	1	\$79,850.00	\$79,850.00	\$89,000.00	\$89,000.00
2	Complete and operable mixing system including pipe, fittings, valves, supports, coatings and labor for installation	LS	1	30,000.00	30,000.00	25,000.00	25,000.00
3	Allowance for 200' of lineal welding	LS	1	3,000.00	3,000.00	3,000.00	3,000.00
4	Allowance for 200 Pits filled with Devcon Plastic Steel	LS	1	1,500.00	1,500.00	1,000.00	1,000.00
5	Allowance for 200 Pits repaired with plate steel	LS	1	4,500.00	4,500.00	1,000.00	1,000.00
TOTAL BASE BID					\$118,850.00		\$119,000.00

Note: Bids were also received from Horizon Brothers Painting of Howell, MI and Sam Estes Painting & Sandblasting, Inc. of Maceo, KY. Due to the use of incorrect Bid Documents, these bids have been rejected and are therefore not shown in the Bid Tabulation.

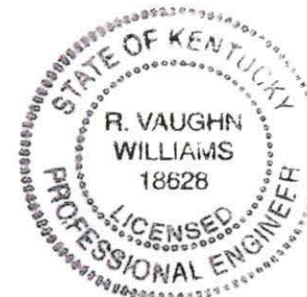
The above is a true and complete tabulation of the Bids received by West Laurel Water Association at their office located at 1670 E. Hal Rogers Parkway, London, KY, on Thursday, November 9, 2017 at 1:30 P.M. Local Time.

By:


R. Vaughn Williams, P.E.

Date

11/10/17



APPENDIX B
COST QUOTATION (METERS)

CONSOLIDATED PIPE AND SUPPLY CO., INC.
CUSTOMER QUOTE

265 THOROUGHbred DRIVE
FERGUSON KY 42533

Quote Nbr: 185450 000
Quote Date: 11/29/2017

Page 1

0029 - CHAD PRYOR
BUS: 606-679-1999
FAX: 606-679-1942
WATTS: 866-430-2307

Job: WEST LAUREL METERS

Engineer: KENVIRONS

220216 - WOOD CREEK WATER DIS
PO BOX 726
LONDON KY 40741

Good Until: 2/28/2018

Qty	Item	Size/Wall/Description	Price	Extended Price
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4000.0		5/8 X 3/4 420 SGTRL6 METER	134.99 EA	539,960.00
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MOBLE DEVICE AND METER READING

EQUIPMENT SUPPLIED PREVIOUSLY

TO DISTRICT AT NO CHARGE

Total:

539,960.00