

WHITLEY COUNTY WATER DISTRICT

19 S HWY 25W
WILLIAMSBURG, KY 40769
606-549-3600
606-549-5795 (FAX)

RECEIVED

MAY 01 2018

PUBLIC SERVICE
COMMISSION

April 26, 2018

Commonwealth of Kentucky
Public Service Commission
P. O. Box 615
Frankfort, Kentucky 40601

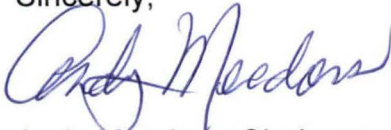
RE: PSC Case No. 2017-00068
Whitley County Water District No. 1
Water System Improvements
Whitley County, Kentucky
WX21235434
SAI#KY20150123-0041

Dear Sirs:

Pursuant to paragraph 2 in the PSC final order in case no. 2017-00068, the Whitley County Water District is hereby requesting permission to construct addition water distribution facilities under the same project. To complete the proposed work on King Mountain Spur Road, the District has petitioned the Kentucky Infrastructure Authority to increase the funding for the project by \$37,204 and we have received a Conditional Commitment letter (copy attached) from them approving the request. We have also received approval (copy attached) of the plans and specifications for the proposed work from the Kentucky Division of Water. A copy of the plan sheet showing the work proposed is also attached for your use. We intend to have the work performed via change order to our existing contractor.

If you should have any questions or need additional information, please contact our engineer, Ken Taylor, PE, with Kenvirons, Inc. at 502-695-4357 or KTaylor@Kenvirons.com.

Sincerely,



Andy Meadors, Chairman

C: Ken Taylor
Tim Schwendeman

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MAY 01 2018

PUBLIC SERVICE
COMMISSION



KENTUCKY INFRASTRUCTURE AUTHORITY

Matthew G. Bevin
Governor

Capital Center Complex
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601
(502) 573-0260
(502) 573-0157 (fax)
kia.ky.gov

Donna McNeil
Executive Director

April 19, 2018

The Honorable Andrew Meadors, Chairman
Whitley County Water District
19 S. Hwy 25 West
Williamsburg, KY 40769

**KENTUCKY INFRASTRUCTURE AUTHORITY
FEDERALLY ASSISTED DRINKING WATER REVOLVING LOAN FUND
CONDITIONAL COMMITMENT LETTER (F15-030)
INCREASE**

Dear Chairman Meadors:

The Kentucky Infrastructure Authority ("the Authority") commends your efforts to improve public service facilities in your community. Your request for a \$ 37,204 increase to your existing loans has been approved, subject to the conditions stated below. The total cost of the project shall not exceed \$974,704 of which the Authority loan shall provide \$969,704 of the funding. Other anticipated funding for the project is reflected in Attachment A. The final loan amount will be equal to the Authority's portion of estimated project cost applied to the actual project cost. Attachment A incorporated herein by reference fully describes the project.

An Assistance Agreement will be executed between the Authority and the Whitley County Water District upon satisfactory performance of the conditions set forth in this letter. You must meet the conditions set forth in this letter and enter into an Assistance Agreement by July 10, 2018. Funds will be available for disbursement only after execution of the Assistance Agreement.

The Assistance Agreement and this commitment shall be subject, but not limited to, the following terms:

Chairman Meadors

April 10, 2018

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1. The Authority project loan shall not exceed \$969,704.
2. This loan project is not eligible for principal forgiveness.
3. The loan shall bear interest at the rate of 0.75 percent per annum commencing with the first draw of funds.
4. Interest shall be payable on the amount of actual funds received. The first payment shall be due on June 1, or December 1, immediately succeeding the date of the initial draw of funds, provided that if such June 1, or December 1, shall be less than three months since the date of the initial draw of funds, then the first interest payment date shall be the June 1, or December 1, which is at least six months from the date of the initial draw of funds. Interest payments will be due each six months thereafter until the loan is repaid.
5. Full principal payments will commence on the appropriate June 1, or December 1, within twelve months from initiation of operation. Full payments will be due each six months thereafter until the loan is repaid.
6. The loan shall be repaid over a period not to exceed 20 years from the date of initiation of operation for the project.
7. A loan servicing fee of 0.25% of the outstanding loan balance shall be payable to the Authority as a part of each interest payment.
8. Loan funds will only be disbursed after execution of the Assistance Agreement as project costs are incurred.
9. The Authority loan funds must be expended within six months of the official date of initiation of operation.
10. Fund "F" loan funds may be considered to be federal funds. OMB Circular A-133, "Audits of States, Local Governments and Non-Profit Organizations, requires that all recipients and subrecipients **expending \$750,000 or more in a year in federal awards must have a single or program-specific audit conducted for that year** in accordance with the Circular. If the federal amount expended plus all other federal funds expended exceeds the threshold, you are required to arrange for an A-133 audit to be performed by an independent, licensed CPA, or in special cases, the Auditor of Public Accounts of the Commonwealth of Kentucky. Please note that the guidance for single audit requirements has changed for fiscal or calendar year 2016 audits. Please consult with your independent auditor as soon as possible to understand how the changes will affect you.
11. The Authority requires an annual financial audit be provided for the life of the loan.
12. The final Assistance Agreement must be approved by ordinance or resolution, as

applicable, of the city council or appropriate governing board.

13. The borrower must maintain a 1.1 debt coverage ratio throughout the life of the KIA loan. All borrowers are subject to at least an annual financial review for compliance.

The following is a list of the standard conditions to be satisfied prior to execution of the Assistance Agreement or incorporated in the Assistance Agreement. Any required documentation must be submitted to the party designated.

1. The Authority to Award (bid) package must be submitted to the Division of Water for approval within 14 days of bid opening.
2. The Assistance Agreement must be executed within six (6) months from bid opening.
3. Documentation of final funding commitments from all parties other than the Authority as reflected in the credit analysis shall be provided prior to preparation of the Assistance Agreement and disbursement of the loan monies. Rejections of any anticipated project funding shall be immediately reported and may cause this loan to be subject to further consideration.
4. The loan must undergo review by the Capital Projects and Bond Oversight Committee of the Kentucky Legislature prior to the State's execution of the Assistance Agreement. The committee meets monthly on the third Tuesday. Any special conditions listed in Attachment A must be satisfied before the project is presented before the Committee.
5. Any required adjustment in utility service rates shall be adopted by ordinance, municipal order or resolution by the appropriate governing body of the Borrower. Public hearings as required by law shall be held prior to the adoption of the service rate ordinance, order, or resolution. Any required approvals by the Kentucky Public Service Commission shall be obtained.
6. The Borrower must complete and return the attached "Authorization for Electronic Deposit of Vendor Payment" form to the Authority.
7. Documentation of Clearinghouse Endorsement and Clearinghouse Comments.
8. Prior to project bid, an environmental review shall be conducted by the Division of Water for all construction projects receiving DWSRF funds.
9. Technical plans and specifications and a complete DWSRF specifications checklist shall be approved by the Division of Water prior to project bid.
10. All easements or purchases of land shall be completed prior to commencement of

construction. Clear Site Certification of all land or easement acquisitions shall be provided to the Division of Water. DOW representatives shall be notified for attendance of the pre-construction conference.

11. Project changes or additions deviating from the original scope of work described in the Project Profile may require a new or amended environmental review and change order review before they can be included in the DWSRF loan project.
12. Applicant must provide certification from their legal counsel stating that they have prepared construction specifications in accordance with all applicable state or federal wage rate laws, and that the procurement procedures, including those for construction, land, equipment and professional services that are a part of the project, are in compliance with applicable federal, state and local procurement laws.
13. Implement the Kentucky Uniform System of Accounting (KUSoA), or an alternative approved by the Authority and assure that rates and charges for services are based upon the cost of providing such service.
14. The Borrower shall comply with all Davis Bacon related monitoring and reporting and require all contractors to pay wages pursuant to applicable prevailing wage rates (federal or state) for all work relating to the subject Project.
15. The project shall comply with the reporting requirements of the Transparency Act, and shall complete the attached Transparency Act Reporting Information Form and provide to the Authority no later than 30 days after the KIA Board approval date of your loan.
16. If the project has a "Green Reserve" component, the Borrower must submit a Business Case, if required.
17. Based on the final "as-bid" project budget, the Borrower must provide satisfactory proof, based on then existing conditions, that the revenue projections in the attached descriptions are still obtainable and that the projections of operating expenses have not materially changed. The "as bid" project budget shall be reviewed and approved by the consulting engineer.
18. The project shall comply with American Iron and Steel requirements of The Consolidated Appropriations Act of 2014 (H.R. 3547), which became effective January 17, 2014, unless engineering plans and specifications were approved by the Division of Water prior to the effective date.

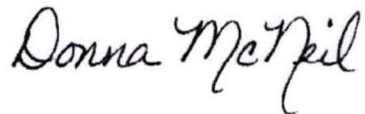
Any special conditions stated in Attachment A must be resolved.

Please inform the Authority of any changes in your financing plan as soon as possible. We wish

Chairman Meadors
April 10, 2018
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you every success for this project which will benefit both your community and the Commonwealth as a whole.

Sincerely,



Donna McNeil, Executive Director
Kentucky Infrastructure Authority

Attachments

cc: Tim Schwendeman, Cumberland Valley ADD
Kenneth Taylor, PE, Kenvirons

Please sign and return a copy of this letter indicating your acceptance of this commitment and its terms.


Accepted
Date

ATTACHMENT A

**Whitley County Water District
F15-030**

EXECUTIVE SUMMARY		Reviewer	Meili Sun	
KENTUCKY INFRASTRUCTURE AUTHORITY		Date	April 9, 2018	
FUND F, FEDERALLY ASSISTED DRINKING WATER		KIA Loan Number	F15-030	
REVOLVING LOAN FUND		WRIS Number	WX21235434	
BORROWER		WHITLEY COUNTY WATER DISTRICT WHITLEY COUNTY		
BRIEF DESCRIPTION				
This request is for a \$37,204 increase to a previously approved loan in the amount of \$932,500. The new total loan amount is \$969,704. The increase is needed to fund additional work.				
This project will replace 36,400 linear feet of deteriorated water lines across the Fairview, Savoy, Fabor and Woodbine areas of Whitley County. The majority of lines are undersized and have frequent leaks. The District will also replace 700 conventional meters with radio read meters.				
PROJECT FINANCING		PROJECT BUDGET		
Fund F Loan	\$969,704	RD Fee %	Actual %	
Local Funds	5,000			
				Administrative Expenses \$25,000
				Legal Expenses 8,364
				Land, Easements 4,691
				Planning 2,930
		Eng - Design / Const 9.2%	9.8%	76,556
		Eng - Insp 6.1%	6.9%	53,783
				Construction 778,010
				Equipment 20,369
				Contingency 5,000
TOTAL	\$974,704	TOTAL		\$974,704
REPAYMENT	Rate	0.75%	Est. Annual Payment	\$54,727
	Term	20 Years	1st Payment	6 Mo. after first draw
PROFESSIONAL SERVICES	Engineer	Kenvirons		
	Bond Counsel	Peck, Shaffer, & Williams, a division of Dinsmore & Shohl, LLP		
PROJECT SCHEDULE	Bid Opening	Aug-15		
	Construction Start	Feb-17		
	Construction Stop	Aug-18		
DEBT PER CUSTOMER	Existing	\$1,097		
	Proposed	\$1,302		
RESIDENTIAL RATES		<u>Users</u>	<u>Avg. Bill</u>	
	Current	3,519	\$39.78	(for 4,000 gallons)
	Additional	0	\$39.78	(for 4,000 gallons)
REGIONAL COORDINATION This project is consistent with regional planning recommendations.				
CASHFLOW	Cash Flow Before Debt Service	Debt Service	Cash Flow After Debt Service	Coverage Ratio
Audited 2014	559,642	270,091	289,551	2.1
Audited 2015	542,907	265,133	277,774	2.0
Audited 2016	653,312	243,593	409,719	2.7
Projected 2017	644,668	265,226	379,442	2.4
Projected 2018	653,573	264,794	388,779	2.5
Projected 2019	660,156	320,019	340,137	2.1
Projected 2020	649,219	318,272	330,947	2.0
Projected 2021	638,063	319,358	318,705	2.0

Reviewer: Meili Sun
Date: April 9, 2018
Loan Number: F15-030

**KENTUCKY INFRASTRUCTURE AUTHORITY
DRINKING WATER STATE REVOLVING FUND (FUND F)
WHITLEY COUNTY WATER DISTRICT, WHITLEY COUNTY
PROJECT REVIEW
WX21235434**

I. PROJECT DESCRIPTION

This request is for a \$37,204 increase to a previously approved loan in the amount of \$932,500. The total loan amount is \$969,704. The increase is needed to fund additional work.

The project will replace 36,400 linear feet of deteriorated water lines across Fairview, Savoy, Fabor and Woodbine areas of Whitley County. Many of the lines are undersized and have frequent leaks. The District will also replace 700 conventional meters with radio read meters. The project will reduce purchased water costs, maintenance expense, and transportation costs.

The District purchases about 85 million gallons of water annually from the Corbin Utility Commission and is subject to PSC jurisdiction. They service Whitley County and a small portion of Knox County.

II. PROJECT BUDGET

	<u>Total</u>
Administrative Expenses	\$ 25,000
Legal Expenses	8,364
Land, Easements	4,691
Planning	2,930
Engineering Fees - Design / Const	76,556
Engineering Fees - Inspection	53,783
Construction	778,010
Equipment	20,369
Contingency	5,000
Total	\$ 974,704

III. PROJECT FUNDING

	<u>Amount</u>	<u>%</u>
Fund F Loan	\$ 969,704	99%
Local Funds	5,000	1%
Total	\$ 974,704	100%

IV. KIA DEBT SERVICE

Construction Loan	\$	969,704
Interest Rate		0.75%
Loan Term (Years)		20
Estimated Annual Debt Service	\$	52,303
Administrative Fee (0.25%)		2,424
Total Estimated Annual Debt Service	\$	54,727

V. PROJECT SCHEDULE

Bid Opening	December 2016
Construction Start	February 2017
Construction Stop	August 2018

VI. CUSTOMER COMPOSITION AND RATE STRUCTURE

A) Customers

<u>Customers</u>	<u>Current</u>
Residential	3,386
Commercial	125
Industrial	8
Total	3,519

B) Rates

<u>Retail Water</u>	<u>Current</u>	<u>Prior</u>
Date of Last Rate Increase	05/01/2012	09/14/2006
Minimum	\$19.35	\$18.93
Next 4,000 Gallons	6.81	6.39
Next 95,000 Gallons	6.39	5.42
Cost for 4,000 gallons	\$39.78	\$38.10
Increase %	4.4%	
Affordability Index (Rate/MHI)	1.5%	

VII. DEMOGRAPHICS

Based on current Census data from the American Community Survey 5-Year Estimate 2012-2016, the District's service area population was 3,322 with a Median Household Income (MHI) of \$31,427. The median household income for the Commonwealth was \$42,610. The project qualified for a 0.75% interest rate because the utility's service area MHI was below 80% of the State's MHI.

Year	Population		County Unemployment	
	County	% Change	Date	Rate
1980	33,396		June 2005	6.2%
1990	33,326	-0.2%	June 2010	12.2%
2000	35,865	7.6%	June 2015	7.2%
2010	35,637	-0.6%	June 2017	7.2%
Current	35,842	0.6%		
Cumulative %		7.3%		

VIII. 2017 CAPITALIZATION GRANT EQUIVALENCIES

- 1) Green Project Reserve - The Drinking Water capitalization grant does not contain a "green" requirement.
- 2) Additional Subsidization – This project does not qualify for additional subsidization.

IX. FINANCIAL ANALYSIS (See Exhibit 1)

Financial information was obtained from the audited financial statements for the Proprietary (water) fund for the years ended June 30, 2014 through 2016. Percentage references in the History section below are based on whole dollar amounts and not the rounded amounts presented.

HISTORY

Revenues decreased 1.3% from \$1.82 million in 2014 to \$1.80 million in 2016 while operating expenses decreased 9.0% during the same time period due to lower tax and contracted service costs. Debt coverage ratio was 2.1, 2.0 and 2.7 for 2014, 2015, and 2016 respectively.

The balance sheet reflects a current ratio of 0.3, a debt to equity ratio of 0.4 and 10.7 days sales in accounts receivable. The number of months operating expenses in unrestricted cash is 0 due to a mistake classifying unrestricted cash as restricted.

PROJECTIONS

Projections are based on the following assumptions:

- 1) Revenues will be flat.
- 2) Expenses will increase 2% annually for inflation.
- 3) Cost savings of \$40,000 annually will be realized beginning in 2019.
- 4) Debt service coverage is 2.0 in 2020 when full year principal and interest repayments begin.

Based on the pro forma assumptions, the utility shows adequate cash flow to repay the KIA Fund F loan.

REPLACEMENT RESERVE

The annual replacement cost is \$2,400. This amount should be added to the replacement account each December 1 until the balance reaches \$24,000 and maintained for the life of the loan.

X. DEBT OBLIGATIONS

	<u>Outstanding</u>	<u>Maturity</u>
RD Series 1994 Bond	\$ 501,500	2033
RD Series 1998 Bond	456,000	2038
RD Series 2000 Bond	302,000	2040
RD Series 2003 Bond	1,563,000	2042
RD Series 2006 Bond	261,100	2045
KIA (B08-03)	777,522	2033
Total	\$ 3,861,122	

XI. CONTACTS

Legal Applicant	
Name	Whitley County Water District
Address	19 S. Hwy 25 West Williamsburg, KY 40769
County	Whitley
Authorized Official	Andrew Meadors, Chairman
Phone	(606) 549-3600
Email	WCWD@bellsouth.net

Project Contact – Applicant & Administrator	
Name	Tim Schwendeman
Representing	Cumberland Valley ADD
Address	342 Old Whitley Road PO Box 1740 London, KY 40744
Phone	(606) 864-7391
Email	TimSch@cvadd.org

Consulting Engineer	
Name	Ken Taylor, PE
Firm	Kenvirons
Address	452 Versailles Road Frankfort, KY 40601
Phone	(502) 695-4357
Email	ktaylor@kenvirons.com

XII. RECOMMENDATIONS

KIA staff recommends approval of the loan with the standard conditions.

WHITLEY COUNTY WATER DISTRICT (PROPRIETARY)
 FINANCIAL SUMMARY (DECEMBER YEAR END)

	Audited 2014	Audited 2015	Audited 2016	Projected 2017	Projected 2018	Projected 2019	Projected 2020	Projected 2021
Balance Sheet								
Assets								
Current Assets	183,702	139,578	42,482	156,263	272,942	374,979	474,228	569,831
Other Assets	15,339,222	14,978,731	14,995,010	14,871,798	15,091,756	14,792,785	14,487,373	14,174,272
Total	15,522,924	15,116,309	15,037,472	15,028,059	15,364,698	15,167,744	14,961,599	14,744,103
Liabilities & Equity								
Current Liabilities	177,076	121,430	145,608	160,537	170,106	177,682	188,057	200,000
Long Term Liabilities	4,061,425	3,997,383	3,899,701	4,236,906	4,591,650	4,459,068	4,321,011	4,178,011
Total Liabilities	4,238,501	4,118,813	4,045,309	4,397,443	4,761,756	4,636,650	4,509,068	4,378,011
Net Assets	11,284,423	10,997,496	10,992,163	10,630,616	10,602,940	10,531,094	10,452,531	10,366,093
Cash Flow								
Revenues	1,821,167	1,797,389	1,796,965	1,796,965	1,796,965	1,796,965	1,796,965	1,796,965
Operating Expenses	1,287,373	1,258,987	1,153,711	1,184,588	1,155,683	1,149,100	1,160,037	1,171,193
Other Income	6,848	4,505	10,058	12,291	12,291	12,291	12,291	12,291
Cash Flow Before Debt Service	559,642	542,807	653,312	644,668	653,573	660,156	649,219	638,063
Debt Service								
Existing Debt Service	270,091	265,133	243,593	265,226	264,794	265,292	263,545	264,631
Proposed KIA Loan	0	0	0	0	0	54,727	54,727	54,727
Total Debt Service	270,091	265,133	243,593	265,226	264,794	320,019	318,272	319,358
Cash Flow After Debt Service	289,551	277,774	409,719	379,442	388,779	340,137	330,947	318,705
Ratios								
Current Ratio	1.0	1.1	0.3	1.0	1.6	2.1	2.5	2.8
Debt to Equity	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Days Sales in Accounts Receivable	8.6	9.0	10.7	10.7	10.7	10.7	10.7	10.7
Months Operating Expenses in Unrestricted Cash	1.4	1.0	0.0	1.2	2.4	3.5	4.5	5.4
Debt Coverage Ratio	2.1	2.0	2.7	2.4	2.5	2.1	2.0	2.0



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

AARON B. KEATLEY
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

March 20, 2018

Mr. Albert Mahan
Whitley Co Water District No 1
19 S US 25 W
Williamsburg, KY 40769

RE: King Mt. Spur Road Waterline Repl.-SRF
Whitley County, KY
Whitley Co Water District No 1
AI #: 34133, APE20180001
PWSID #: 1180468-18-001

Dear Mr. Mahan:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of approximately 3,500 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 attached construction permit.

If you have any questions concerning this project, please contact Mark Rasche at 502-782-6162.

Sincerely,

Mark Rasche, P.E.
Water Infrastructure Branch
Division of Water

MR
Enclosures

c: Kenvirons, Inc.
Whitley County Health Department
Division of Plumbing

Distribution-Water Line Extension

Whitley Co Water District No 1

Facility Requirements

Activity ID No.:APE20180001

Page 1 of 4

PORT000000028 (Whitley County Water District) King Mountain Spur Road Water Line Extension:

Narrative Requirements:

Condition No.	Condition
T-1	Construction of this project shall not result in the water system's inability to supply consistent water service in compliance with 401 KAR 8:010 through 8:600. [401 KAR 8:100 Section 5]
T-2	The public water system shall not implement a change to the approved plans without the prior written approval of the cabinet. [401 KAR 8:100 Section 4(3)]
T-3	A proposed change to the approved plans affecting sanitary features of design shall be submitted to the cabinet for approval in accordance with Section 2 of this administrative regulation. [401 KAR 8:100 Section 4(2)]
T-4	During construction, a set of approved plans and specifications shall be available at the job site. Construction shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 3(1)]
T-5	Unless construction begins within two (2) years from the date of approval of the final plans and specifications, the approval shall expire. [401 KAR 8:100 Section 3(3)]
T-6	Upon completion of construction, a professional engineer shall certify in writing that the project has been completed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 4(1)]
T-7	The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. [Recommended Standards for Water Works 8.2.1, Drinking Water General Design Criteria IV.1.a]
T-8	Water lines should be hydraulically capable of a flow velocity of 2.5 ft/s while maintaining a pressure of at least 20 psi. [Drinking Water General Design Criteria IV.1.b]
T-9	The normal working pressure in the distribution system at the service connection shall not be less than 30 psi under peak demand flow conditions. Peak demand is defined as the maximum customer water usage rate, expressed in gallons per minute (gpm), in the pressure zone of interest during a 24 hour (diurnal) time period. [Drinking Water General Design Criteria IV.1.d]
T-10	When static pressure exceeds 150 psi, pressure reducing devices shall be provided on mains or as part of the meter setting on individual service lines in the distribution system. [Drinking Water General Design Criteria IV.1.c]
T-11	The minimum size of water main in the distribution system where fire protection is not to be provided should be a minimum of three (3) inch diameter. Any departure from minimum requirements shall be justified by hydraulic analysis and future water use, and can be considered only in special circumstances. [Recommended Standards for Water Works 8.2.2, Drinking Water General Design Criteria IV.2.b]

Distribution-Water Line Extension

Whitley Co Water District No 1

Facility Requirements

Activity ID No.:APE20180001

Page 2 of 4

PORT000000028 (Whitley County Water District) King Mountain Spur Road Water Line Extension:

Narrative Requirements:

Condition No.	Condition
T-12	Water mains not designed to carry fire-flows shall not have fire hydrants connected to them. [Recommended Standards for Water Works 8.4.1.b]
T-13	Flushing devices should be sized to provide flows which will give a velocity of at least 2.5 feet per second in the water main being flushed. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b]
T-14	No flushing device shall be directly connected to any sewer. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b]
T-15	Pipe shall be constructed to a depth providing a minimum cover of 30 inches to top of pipe. [Drinking Water General Design Criteria IV.3.a]
T-16	Water mains shall be covered with sufficient earth or other insulation to prevent freezing. [Recommended Standards for Water Works 8.7]
T-17	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 of at least six inches below the bottom of the pipe. [Recommended Standards for Water Works 8.7]
T-18	Water line installation shall incorporate the provisions of the AWWA standards and/or manufacturer's recommended installation procedures. [Recommended Standards for Water Works 8.7]
T-19	All materials used for the rehabilitation of water mains shall meet ANSI/NSF standards. [Recommended Standards for Water Works 8.1]
T-20	Packing and jointing materials used in the joints of pipe shall meet the standards of AWWA and the reviewing authority. [Recommended Standards for Water Works 8.1]
T-21	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 8.7]
T-22	All materials including pipe, fittings, valves and fire hydrants shall conform to the latest standards issued by the ASTM, AWWA and ANSI/NSF, where such standards exist, and be acceptable to the Division of Water. [Recommended Standards for Water Works 8.1]
T-23	Water mains which have been used previously for conveying potable water may be reused provided they meet the above standards and have been restored practically to their original condition. [Recommended Standards for Water Works 8.1]

Distribution-Water Line Extension

Whitley Co Water District No 1

Facility Requirements

Activity ID No.:APE20180001

Page 3 of 4

PORT000000028 (Whitley County Water District) King Mountain Spur Road Water Line Extension:

Narrative Requirements:

Condition No.	Condition
T-24	Manufacturer approved transition joints shall be used between dissimilar piping materials. [Recommended Standards for Water Works 8.1]
T-25	Pipes and pipe fittings containing more than 8% lead shall not be used. All products shall comply with ANSI/NSF standards. [Recommended Standards for Water Works 8.1]
T-26	The minimum size of water main which provides for fire protection and serving fire hydrants shall be six-inch diameter. [Recommended Standards for Water Works 8.2, Drinking Water General Design Criteria IV.2.a]
T-27	Gaskets containing lead shall not be used. Repairs to lead-joint pipe shall be made using alternative methods. [Recommended Standards for Water Works 8.1]
T-28	Pipe materials shall be selected to protect against both internal and external pipe corrosion. [Recommended Standards for Water Works 8.1]
T-29	Dead end mains shall be equipped with a means to provide adequate flushing. [Recommended Standards for Water Works 8.2]
T-30	The hydrant lead shall be a minimum of six inches in diameter. Auxiliary valves shall be installed on all hydrant leads. [Recommended Standards for Water Works 8.4.3]
T-31	A sufficient number of valves shall be provided on water mains to minimize inconvenience and sanitary hazards during repairs. [Recommended Standards for Water Works 8.3]
T-32	Wherever possible, chambers, pits or manholes containing valves, blow-offs, meters, or other such appurtenances to a distribution system, shall not be located in areas subject to flooding or in areas of high groundwater. Such chambers or pits should drain to the ground surface, or to absorption pits underground. The chambers, pits and manholes shall not connect directly to any storm drain or sanitary sewer. Blow-offs shall not connect directly to any storm drain or sanitary sewer. [Recommended Standards for Water Works 8.6]
T-33	At high points in water mains where air can accumulate provisions shall be made to remove the air by means of air relief valves. [Recommended Standards for Water Works 8.5.1]
T-34	Automatic air relief valves shall not be used in situations where flooding of the manhole or chamber may occur. [Recommended Standards for Water Works 8.5.1]
T-35	The open end of an air relief pipe from automatic valves shall be extended to at least one foot above grade and provided with a screened, downward-facing elbow. [Recommended Standards for Water Works 8.5.2.c]

Distribution-Water Line Extension

Whitley Co Water District No 1

Facility Requirements

Activity ID No.:APE20180001

Page 4 of 4

PORT0000000028 (Whitley County Water District) King Mountain Spur Road Water Line Extension:

Narrative Requirements:

Condition No.	Condition
T-36	Discharge piping from air relief valves shall not connect directly to any storm drain, storm sewer, or sanitary sewer. [Recommended Standards for Water Works 8.5.2.d]
T-37	Water pipe shall be constructed with a lateral separation of 10 feet or more from any gravity sanitary or combined sewer measured edge to edge where practical. If not practical a variance may be requested to allow the water pipe to be installed closer to the gravity sanitary or combined sewer provided the water pipe is laid in a separate trench or undisturbed shelf located on one side of the sewer with the bottom of the pipe at least 18 inches above the top of the gravity sanitary or combined sewer pipe. [Drinking Water General Design Criteria IV.3.b]
T-38	Water lines crossing sanitary, combined or storm sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sanitary, combined or storm sewer with preference to the water main located above the sanitary, combined or storm sewer. [Drinking Water General Design Criteria IV.3.c]
T-39	At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. [Recommended Standards for Water Works 8.8.3.b]
T-40	There shall be no connection between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water or other contaminating materials may be discharged or drawn into the system. [Recommended Standards for Water Works 8.10.1]
T-41	Water utilities shall have a cross connection program conforming to 401 KAR 8. [Recommended Standards for Water Works 8.10.1]
T-42	Installed pipe shall be pressure tested and leakage tested in accordance with the appropriate AWWA Standards. [Recommended Standards for Water Works 8.7.6]
T-43	New, cleaned and repaired water mains shall be disinfected in accordance with AWWA Standard C651. The specifications shall include detailed procedures for the adequate flushing, disinfection, and microbiological testing of all water mains. In an emergency or unusual situation, the disinfection procedure shall be discussed with the Division of Water. [Recommended Standards for Water Works 8.7.7]
T-44	A minimum cover of five feet shall be provided over pipe crossing underwater. [Recommended Standards for Water Works 8.9.2]
T-45	Valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair; the valves shall be easily accessible, and not subject to flooding for pipes crossing underwater. [Recommended Standards for Water Works 8.9.2.b]
T-46	Permanent taps or other provisions to allow insertion of a small meter to determine leakage and obtain water samples on each side of the valve closest to the supply source for pipes crossing. [Recommended Standards for Water Works 8.9.2.c]



KING MOUNTAIN SPUR ROAD



KENVIRONS, INC.
FRANKFORT, KENTUCKY

DRAWN BY: JRP
CHECKED BY: KDT
DATE: May 2015
SCALE: 1"=100'
REVISIONS



WHITLEY COUNTY WATER DISTRICT
WATER SYSTEM IMPROVEMENTS
WHITLEY COUNTY, KENTUCKY

PROJECT NO.
2015010
SHEET NO.
2