COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE VERIFIED APPLICATION OF HARDIN COUNTY WATER DISTRICT NO. 1 FOR A DECLARATORY ORDER THAT PROPOSED WATERWORKS IMPROVEMENTS TO MAINTAIN ADEQUATE AND RELIABLE WATER SERVICE TO THE FORT KNOX MILITARY INSTALLATION DO NOT REQUIRE A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY	)	**CASE NO. 2019-00067**

VERIFIED APPLICATION

Pursuant to KRS 278.020 and 807 KAR 5:001, Sections 15 and 19, Hardin County Water District No. 1 ("Hardin District") applies to the Kentucky Public Service Commission ("Commission") for a declaratory order that each of certain proposed improvements to the Fort Knox Military Installation's water treatment and distribution facilities do not require a certificate of public convenience and necessity ("Certificate").

In support of this Application, Hardin District respectfully states:

A. Applicant

1. The full name and post office address of Hardin District is: Hardin County Water District No. 1, 1400 Rogersville Road, Radcliff, Kentucky 40160. Its e-mail address is: shogan@hcwd.com.

2. Copies of all orders and pleadings related to this proceeding should be directed to:

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General Manager
Hardin County Water District No. 1
1400 Rogersville Road
Radcliff, Kentucky 40160
shogan@hcwd.com
(270) 351-3222

David T. Wilson II
Skeeters, Bennett, Wilson & Humphrey
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3. Hardin District is not a corporation, limited liability company or limited partnership. It has no articles of incorporation or partnership agreements.

4. Hardin District is a water district created under the provisions of KRS Chapter 74 and is a political subdivision of the Commonwealth of Kentucky.

5. Hardin County Court created Hardin District pursuant to an order entered August 20, 1952. A copy of this Order is attached at **Tab 1** of this Application.

6. Hardin District owns and operates facilities that provide, as of December 31, 2017, retail water service to approximately 10,265 customers in Hardin County, Kentucky and wholesale water service to Meade County Water District and the cities of Vine Grove and Hardinsburg.[1]

7. Hardin District also owns and operates facilities that provide, as of December 31, 2017, sanitary sewer service to approximately 8,814 customers in Hardin County, Kentucky, primarily in the city of Radcliff.[2]

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[1] Annual Report of Hardin County Water District No. 1 to the Public Service Commission of the Commonwealth of Kentucky for the Calendar Year Ended December 31, 2017 ("2017 Annual Water Report") at Ref Pages 27 and 29.

[2] Annual Report of Hardin County Water District No. 1 to the Public Service Commission of the Commonwealth of Kentucky for the Calendar Year Ended December 31, 2017 ("2017 Annual Sewer Report") at Ref Pages 26.

8. Hardin District owns and operates the water treatment and distribution system that serves the Fort Knox Military Installation,[3] as well as the sanitary sewer and storm water drainage systems[4] that serve that installation.

B. Background

9. The Fort Knox Military Installation is located in Bullitt, Hardin, and Meade Counties, Kentucky and covers approximately 109,000 acres. It has an on-post population of 11,613 and a daytime population of over 23,000 persons.[5]

10. The Fort Knox Military Installation's water production and treatment facilities consist of 13 groundwater wells, two raw water intake structures, a low-lift pump station, 48,700 linear feet of raw water main, two water treatment facilities, three clear wells, two high lift pump stations, one booster pump station, eight elevated storage tanks, and approximately 857,726 linear feet of distribution main. These facilities are located entirely within the Fort Knox Military Installation and serve only the military installation.

11. Pursuant to 10 U.S.C § 2688, the Department of Defense ("DoD") in 2008 issued a solicitation for proposals for the privatization of the Fort Knox water treatment and distribution system and the provision of water service to the installation. Hardin District submitted a proposal in response to this solicitation for proposals and subsequently engaged in negotiations with the Department of Defense. On September 30, 2011, it executed Contract No. SP0600-11- 8271 ("the Contract") with the Defense Logistics Agency Energy ("DLAE") for acquisition of the Fort Knox Military Installation's water distribution systems.

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[3] *Application of Hardin County Water District No. 1 for Approval of a Contract with the United States Army to Provide Water Service to the Fort Knox Military Installation*, Case No. 2011-00416 (Ky. PSC Jan. 27, 2012).

[4] *Application of Hardin County Water District No. 1 for Approval to Transfer Ownership of the City of Radcliff, Kentucky Sanitary Sewer System, Assume Existing Debt, and For Proposed Tariff to Provide Sewer Services to the City of Radcliff*, Case No. 2008-00074 (Ky. PSC Apr. 23, 2008);

[5] *Application of Hardin County Water District No. 1 Requesting A Certificate of Public Convenience and Necessity to Own and Operate A Sewer Utility and Approval of Initial Rates*, Case No. 2004-00422 (Ky. PSC Dec. 1, 2004).

12. The Contract provided, among other things, that Hardin District would perform over a five-year period 23 improvement projects whose purpose were to correct system deficiencies and to ensure that the Fort Knox water treatment and distribution systems remained in compliance with all applicable regulatory requirements and whose total cost was estimated to be $28,429,860. The Contract permitted Hardin District's monthly assessment for five years an Initial System Deficiency Corrections Surcharge ("ISDC Surcharge") of $473,831 to compensate Hardin District for the estimate cost of these improvement projects. Under the Contract's terms, Hardin District was required to submit to DoD an Annual System Deficiency Corrections/Upgrades and Renewals and Replacements Plan that listed the projects that Hardin District intended to accomplish. Performance of these projects was contingent upon DoD approval. The Contract restricted Hardin District's use of ISDC Surcharge proceeds to projects to correct the deficiencies of the Fort Knox water treatment and distribution systems.

13. On October 13, 2011, Hardin District applied to the Commission for a Certificate to acquire and operate the Fort Knox Military Installation water treatment and distribution systems and approval of the rates and charges for service set forth in the Contract.[6] After reviewing Hardin District's application, the Commission determined that no Certificate was required and approved the provisions of the Contract regarding Hardin District's rates and service, including the ISDC Surcharge. In its Order of January 27, 2012, the Commission also found that KRS 278.020(1) required a Certificate for each project identified as an "initial system deficiency correction" that involved significant capital outlay.[7]

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[6] *Application of Hardin County Water District No. 1 for Approval of a Contract with the United States Army to Provide Water Service to the Fort Knox Military Installation*, Case No. 2011-00416 (Ky. PSC filed Oct. 10, 2011).

[7] *Application of Hardin County Water District No. 1 for Approval of a Contract with the United States Army to Provide Water Service to the Fort Knox Military Installation*, Case No. 2011-00416 (Ky. PSC Jan. 27, 2012) at Ref Pages 13.

14. Hardin District subsequently petitioned for rehearing of the Order of January 27, 2012 on whether any of the projects list in the Contract required a Certificate. On December 4, 2012, the Commission denied Hardin District's argument that KRS 278.020(1) was not applicable to all proposed projects but clarified that "only projects involving the construction of facilities and a substantial capital outlay that might materially affect the financial condition of the water district require[d] a Certificate."[8] It identified seven of the 23 projects, based upon the project's estimated cost, as possibly requiring a Certificate.

15. Following approval of the Contract, Hardin District began assessing the charges set forth in the Contract and initiated work on the listed projects. DoD officials subsequently expressed concerns regarding certain aspects of the Fort Knox Military Installation's water treatment and distribution systems, specifically water pressure, water taste and general water quality. In response to these concerns, Hardin District in 2014 retained Stantec Consulting Services, Inc. ("Stantec") to perform a hydraulic and water quality modeling and to develop a capital improvements plan. The results of these studies and a preliminary capital improvements plant were submitted to DoD officials for review in mid-2015. The DLAE requested that Hardin District submit a proposal for modifications to the initial plan of improvements.

16. In response to the DLAE's request, Hardin District submitted a Technical Proposal Submittal on September 4, 2015. A copy of this Submittal is attached at **Tab 2** of this Application. In this Submittal, Stantec reported the results of its studies and proposed 18 capital improvement projects to be substituted for the projects set forth in the Contract that had not yet commenced. These proposed projects would eliminate the need for the remaining projects in the original plan of improvements.

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[8] *Application of Hardin County Water District No. 1 for Approval of a Contract with the United States Army to Provide Water Service to the Fort Knox Military Installation*, Case No. 2011-00416 (Ky. PSC Jan. 27, 2012) at Ref Pages 4.

17. Hardin District subsequently submitted to DLAE a Firm Fixed Price Proposal Submittal regarding the cost of the 18 projects identified in the Technical Proposal Submittal. A copy of the final version of this Proposal, which is dated June 1, 2016, is attached at **Tab 3** of this Application. In this proposal, Hardin District identified the total estimated cost of the 18 projects as $16,456,000. Hardin District proposed that these projects be financed with unused IDSC Surcharge proceeds and other funds in its Fort Knox Water Service Reserve. None of the proposed improvements would be financed through a change in existing rates.

18. On August 10, 2016, Hardin District and DLAE executed Contract Modification P00029 to modify the terms of the Contract. A copy of Contract Modification P00029 is attached at **Tab 4** of this Application. The Modification provided that: (A) The ISDC would not be renewed and would terminate upon the fifth anniversary of the Contract's execution; (B) The list of capital projects listed in the Contract was modified to reflect projects set forth in Hardin District's Firm Fixed Price Proposal Submittal; and (C) Hardin District was authorized to use IDSC Surcharge proceeds to fund the projects on the modified project list.

19. Construction of the projects listed in Contract Modification P00029 is necessary to meet significant water quality and pressure problems noted in the Technical Proposal Submittal. Low water pressures are being experienced throughout the distribution system. Low pressures are causing inadequate fire flows and increasing public safety risks. Moreover, under present conditions the system's water storage tanks cannot maintain a regular fill and empty cycle, but must operate within 10 to 15 feet of tank top. As a result, the system experiences greater power expense. Furthermore, the condition prevents the system from maintaining adequate chlorine residuals, causing water quality suffers. DoD officials have requested that Hardin District commence work to correct these problems as quickly as possible. A copy of correspondence from Fort Knox is attached at **Tab 5** of this Application. Hardin District proposes to issue a request for

bids on several proposed projects on or about March, 2019 and to begin construction no later than June, 2019. The cost of these projects will be finance through funds in its Fort Knox Water Service Reserve. Hardin District's Fort Knox Water Service Fund presently has current assets of $19,321,642. It will not issue any debt nor adjust its rates. The separate business funds that Hardin District maintains for its county water and sewer operations will not be affected.

C. Applicable Law

20. KRS 278.020(1) (a) provides:

> No person, partnership, public or private corporation, or combination thereof shall commence providing utility service to or for the public or begin the construction of any plant, equipment, property, or facility for furnishing to the public any of the services enumerated in KRS 278.010, except:
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> 1. Retail electric suppliers for service connections to electric-consuming facilities located within its certified territory and ordinary extensions of existing systems **in the usual course of business**; or
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> 2. A water district created under KRS Chapter 74 or a water association formed under KRS Chapter 273 that undertakes a waterline extension or improvement project if the water district or water association is a Class A or B utility as defined in the uniform system of accounts established by the commission according to KRS 278.220 and:
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> a. The water line extension or improvement project will not cost more than five hundred thousand dollars ($500,000); or
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> b. The water district or water association will not, as a result of the water line extension or improvement project, incur obligations requiring commission approval as required by KRS 278.300.
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> In either case, the water district or water association shall not, as a result of the water line extension or improvement project, increase rates to its customers;
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> until that person has obtained from the Public Service Commission a certificate that public convenience and necessity require the service or construction.

21. 807 KAR 5:001, Section 15(3) provides:

> Extensions in the ordinary course of business. No certificate of public convenience and necessity will be required for extensions that do not create wasteful duplication of plant, equipment, property or facilities, or conflict with the existing certificates or service of other utilities operating in the same area and under the jurisdiction of the commission that are in the general area in which the utility renders service or contiguous thereto, and that do not involve sufficient capital outlay to materially affect the existing financial condition of the utility involved, or will not result in increased charges to its customers.

22. KRS 278.020(1) and 807 KAR 5:001§15(3), when viewed together, "clearly identify those facilities for which a Certificate of Public Convenience and Necessity is not required."[9] Distilling the requirements of KRS 278.020(1) and 807 KAR 5:001, Section 15(3) to their essentials, the Commission has held that a Certificate is not necessary "for facilities that do not result in the wasteful duplication of utility plant, do not compete with the facilities of existing public utilities, and do not involve a sufficient capital outlay to materially affect the existing financial condition of the utility involved or to require an increase in utility rates." [10]

23. "Wasteful duplication" is defined as an "excess of capacity over need" and "an excessive investment in relation to productivity or efficiency."[11] A proposed facility does not constitute wasteful duplication unless an "existing facility is reasonably available for the present and future needs of those who will be served by it."[12]

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[9] *The Application of Northern Kentucky Water District (A) For Authority to Issue Parity Revenue Bonds in the Approximate Amount of $16,545,000; and (B) A Certificate of Convenience and Necessity for the Construction of Water Main Facilities*, Case No. 2000-481 (Ky. PSC Aug. 30, 2001) at 4 (referring to §15(3) prior to revisions in 807 KAR 5:001 resulted in renumbering).

[10] *The Application of Northern Kentucky Water District (A) For Authority to Issue Parity Revenue Bonds in the Approximate Amount of $16,545,000; and (B) A Certificate of Convenience and Necessity for the Construction of Water Main Facilities*, Case No. 2000-481 (Ky. PSC Aug. 30, 2001) at 4 ("When viewed together, KRS 278.020(1) and Administrative Regulation 807 KAR 5:001, Section 9(3) clearly identify those facilities for which a Certificate of Public Convenience and Necessity is not required.") (referring to §15(3) prior to revisions in 807 KAR 5:001 resulted in renumbering).

[11] *Kentucky Utilities Co. v. Pub. Serv. Comm'n*, 252 S.W.2d. 885, 890 (Ky. 1952).

[12] *Covington v. Board of Commissioners*, 371 S.W.2d 20, 23 (Ky. 1963)

24. To determine if a proposed facility's construction materially affects a utility's financial condition, the Commission has considered three factors: the amount of capital investment; the issuance of debt to finance the construction; and the effect of the proposed facility's construction upon the utility's rates and charges.

a. Capital Outlay. In determining whether a proposed facility was in the ordinary course, the Commission has compared the cost of the proposed facility to the present value of the utility's existing facilities. It has declared:

> In assessing whether a proposed project is a system extension in the ordinary course of business, Kentucky courts have traditionally looked to the size and scope of a project in the context of the monetary cost involved. The Commission has similarly adopted this method and likewise looks to the scale of a proposed project in relation to the relative size of the utility and its present facilities.[13]

The Commission, however, has not stated a specific level of capital outlay at which a project will cease to be in the ordinary course. Instead it has stated that "[e]ach project must be addressed on its particular facts" and that a "determination of whether a proposed project will have a material effect on a utility depends upon the circumstances of the project and the utility."[14] When determining whether a project requires a Certificate, the focus had been upon the individual project's cost even if the project is grouped with several projects.[15]

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[13] *Application of Northern Kentucky Water District for Approval of Dixie Highway Water Main Improvements, Issuance of a Certificate of Convenience and Necessity and Approval of Financing*, Case No. 2014-00171 (Ky. PSC Aug. 6, 2014) at 4.

[14] *Northern Kentucky Water District*, Case No. 2000-481 (Ky. PSC Oct. 8, 2001) at 2.

[15] The Commission is of the opinion that the scope of any review is on the individual project, not on all projects contained within a particular financing package. . . . The projects financed through the BAN proceeds will be examined individually unless the projects are directly related. For example, if several construction projects are proposed to upgrade and improve a water treatment plant and each project is essential to the implementation or operation of the other projects, we will consider these projects as one project when determining whether a Certificate of Public Convenience and Necessity is required.

Id. at 1-2. *See also Clark Energy Cooperative, Inc.: Alleged Failure to Comply with Commission Regulations*, Case No. 2012-00219 (Ky. PSC Nov. 20, 2012) at 2 ("The Commission has determined that each construction project contained in a CWP [Construction Work Plan] should be analyzed on an individual basis to determine whether that individual project is exempt from the requirement in KRS 278.020(1) to obtain a CPCN."). *See also* PSC Staff Opinion 2012-014 (July 16, 2012).

b. Issuance of Debt. The Commission has noted the absence of the issuance of any debt instruments as a significant factor in determining whether a project is in the ordinary course. In Case No. 2007-00014, it found a water district's proposed project was not in the ordinary course in part because the project would be financed through the issuance of debt and that the issuance of such debt materially affected the water district's financial condition.[16] In Case No. 2015-00108,[17] in which it issued a Certificate for a project representing less than one percent of net utility plant, the utility's issuance of debt to finance the project appears to have led to a different conclusion from that reach just eight months earlier involving the same utility and a similar project whose cost was less than one percent of net utility plant.[18] In Case No. 2002-00350, it noted the use of internal funds to finance a project as a basis for determining the project would not materially affect the utility's finances.[19] Similar findings have been found in Commission Staff opinions.[20]

c. Increased Charges to Customers. The Commission has found that if the construction of a proposed facility is likely to result in future rate increases or increase the likelihood that the requesting utility would at some juncture seek recovery of the project's costs through rates, the project will have a materially effect on a utility's financial condition and is not in the ordinary course. In Case No. 2000-481, the Commission emphasized the significance of any subsequent rate increase due to a project, stating that "[r]egardless of the source of funding, if the proposed construction will require the utility to seek a rate adjustment...the utility still must

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[16] *Application of the Big Sandy Water District for an Order Approving the Issuance of Securities Pursuant to KRS 278.300*, Case No. 2007-00014 (Ky. PSC April 3, 2007) at 3.

[17] *Application of Northern Kentucky Water District for Approval of the Fort Thomas Treatment Plant Basin Improvements, Issuance of a Certificate of Convenience and Necessity and Approval of Financing*, Case No. 2015-00108 (Ky. PSC May 21, 2015).

[18] *Northern Kentucky Water District*, Case No. 2014-00171 (Ky. PSC Aug. 6, 2014).

[19] *Natural Energy Utility Corporation*, Case No. 2002-00350 (Ky. PSC Oct. 25, 2002).

[20] *See, e.g.*, PSC Staff Opinion 2012-011 (May 21, 2011) ("[A] as the funding for the proposed construction will require the issuance of additional debt, the proposed construction appears to materially affect McLean District's existing financial condition.").

obtain a Certificate."[21] The Commission has applied this approach inversely to find a project designed to serve new customers was in the ordinary course even though it represented a significant addition to the utility's plant because its revenue impact was neutral or favorable to the utility.[22]

D. Each of the Proposed Waterworks Projects Involving the Construction of Facilities Is An Extension in the Ordinary Course of Business

25. Each of the proposed waterworks projects that involve the construction of facilities meets the definition of an extension in the ordinary course of business as set forth in 807 KAR 5:001, Section 15(3). None will not result in the wasteful duplication of utility plant, or compete with the facilities of existing public utilities or involve a sufficient capital outlay to materially affect Hardin District's existing financial condition or require an increase in Hardin District's rates.

26. No Wasteful Duplication of Facilities. None of the proposed projects duplicate existing Hardin District facilities. Two of the projects involve the construction of 1.5 million gallon water storage tanks with overflow elevations approximately 40 feet higher than existing water storage tanks on the Fort Knox Military Installation. These tanks are needed to correct system pressure problems and to improve water quality by enhancing the cycling of water throughout the Fort Knox water distribution system. Upon construction of these storage tanks, six

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[21] *Northern Kentucky Water District*, Case No. 2000-481 (Ky. PSC Aug. 30, 2001) at 5, fn. 11.

[22] *See, e.g., The Petition of Kentucky-Ohio Gas Company for Approval of Special Contract with General Services Administration and Certificate of Convenience and Necessity to Construct Pipeline Facilities to Serve the Federal Correctional Institute*, Case No. 92-317 (Ky. PSC Sept. 22, 1992)(finding the proposed construction of a gasline to a large federal government customer was in the ordinary course because no debt would be issued to finance the project, project construction costs would be financed through the revenues generated by sales to the new customer, and no increase rates would occur); *Application of Natural Energy Utility Corporation to Extend Existing Line to Provide Service to the Ramey-Estep Home in Boyd County, Kentucky*, Case No. 2002-00350 (Ky. PSC Oct. 25, 2002) (held a proposed extension was in the ordinary course because the "extension will not require a rate increase and that it will be financed internally...service will provide [the utility] with annual revenues of $114,000, which should cover the $180,000 estimated cost of the project"); *Valley Gas, Inc. Request For Approval of a Special Contract With Mago Construction Company and A Deviation From the Gas Cost Adjustment Clause*, Case No. 2014-00368 (Ky. PSC Oct. 28, 2014) (finding the construction of a gas main whose cost was equal to 55 percent of the utility's existing net plant was in the ordinary course as the new customer who was to be served by the pipeline was paying the cost of the pipeline and expected sales to this customer would aid the utility's financial condition and delay any need for a rate adjustment).

existing water storage tanks will be removed and dismantled. A third construction project, which involves improvements to the Muldraugh Water Treatment Plant, is necessary to enable the plant to serve the new water storage tanks, to increase the plant's treatment capacity and improve and upgrade the plant's existing equipment and operating systems. All of the projects will result to greater operating efficiencies.

27. No Competition with Existing Facilities of Other Public Utilities. None of the proposed projects will not compete with the facilities of existing public utilities. They are intended to maintain and improve the quality and reliability of water service to the Fort Knox Military Installation.

28. No Material Effect on Existing Financial Condition. None of the proposed projects will materially affect Hardin District's financial condition.

a. The total estimated cost of proposed projects, including those that involve no construction, is $16,456,000. Hardin District will use internal funds from its Fort Knox Water Service Fund to finance the projects' cost. These funds represent the proceeds of a surcharge previously assessed on DoD to finance future improvements to the Fort Knox water treatment and distribution systems. Under the Contract's terms, Hardin District is obligated to use these funds for the Fort Knox water treatment and distribution systems. The use of these funds is restricted to that purpose and requires specific DoD authorization. Simply put, the use of these funds for the proposed projects represents no change in Hardin District's financial condition. It was obligated to use the funds for Fort Knox and by using these funds for a purpose consistent with the Contract and with DoD's approval, Hardin District is merely extinguishing a liability with available funds.

b. The proposed projects will not affect Hardin District's rates. No rate adjustment will be required to finance the proposed projects. Monies from the Fort Knox Water Service Fund will be used to finance the proposed projects. Hardin District proposes no increase

to its rates to DoD to finance the construction. The rates that Hardin District assesses its other customers will not be affected. No funds from Hardin Districts other operations will be used to finance the projects. As the use of funds in Fort Knox Water Service Fund are restricted to the Fort Knox water treatment and distribution systems only, use of these funds does not deprive Hardin District's other operations of funds to finance improvements or meet operating expenses to avoid increases in the rates for service that those operations provide.

c. None of the proposed projects represent a capital outlay that will materially affect Hardin District's financial condition. Hardin District's total net water utility plant as of December 31, 2017, is $53,388,858.[23] Its total net utility as of December 31, 2017 is $98,278,781.[24] The cost of the proposed Educational Center Tank project, whose estimated cost of $5,060,000 ranks as the highest project cost, represents only five percent of Hardin District's total net utility plant and only 9.5 percent of Hardin District's total net water utility plant. A list of the proposed projects, each project's cost, and its cost as a percent to Hardin District's net utility plant is attached at **Tab 6**.[25]

The Commission has found that capital outlays of this magnitude under similar conditions do not materially affect a utility's financial condition and do not render the project outside of the ordinary course. In Case No. 2014-00368,[26] the Commission found that a gas

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[23] RFH, PLLC, Hardin County Water District No. 1: Financial Statements – December 31, 2017 (issued July 5, 2018) at 26.

[24] Id. at 26 and 29.

[25] Most of the projects represent less than one percent of Hardin District's net utility plant. The Commission has previously found that that the construction of a proposed facility whose cost represents three percent or less of the utility's net utility plant is in the ordinary course of business and does not require a Certificate. *See, e.g., The Application of the Southern Madison Water District to Issue Securities In the Approximate Principal Amount of Eight Hundred Sixty Thousand Dollars ($860,000) For the Purpose of Refunding Certain Outstanding Revenue Bonds of the District and To Provide Funds Pursuant To the Provisions of* KRS 278.300 *and* 807 KAR 5:001, Case No. 99-310 (Ky. PSC Sept. 1, 1999); *Application of Madison County Utility District For An Order Issuing A Certificate of Public Convenience and Necessity and for Authority to Borrow Funds and to Refinance Certain Indebtedness of the District*, Case No. 2007-00424 (Ky. PSC Mar. 20, 2008).

[26] *Valley Gas, Inc. Request For Approval of a Special Contract With Mago Construction Company and A Deviation From the Gas Cost Adjustment Clause*, Case No. 2014-00368 (Ky. PSC Oct. 28, 2014)

utility's proposed construction of a six-inch gas main to serve a new customer, the cost of which was equal to approximately 55 percent of the gas utility's net plant, was in the ordinary course of business and did not require a Certificate. As in Hardin District's case, the cost of the extension would be borne by the customer and no adverse effect on the utility's financial condition or need to increase rates was expected to result from the proposed project.

E. Each of the Proposed Waterworks Projects Involving the Construction of Facilities Falls Within The Water Improvement Exception

29. KRS 278.020(1)(a)2b exempts a Class A water district from the requirement to obtain a Certificate for any improvement project whose construction will not result in an increase in the water district's rates or incur obligations requirement Commission authorization.

30. Each of projects listed in Contract Modification P00029 that involves the construction of facilities meets these criteria.

a. Hardin District is a Class A utility. The Commission's Uniform System of Accounts defines a Class A utility as a utility having annual water operating revenues of $750,000 or more.[27] For the year ending December 31, 2017, Hardin District had water operating revenues of $7,346,271.[28]

b. None of the projects will required Hardin District to adjust its rates or to issue evidences of indebtedness that require Commission authority. Hardin District will use internal funds from its Fort Knox Water Service Fund for each project listed in the Contract Modification. The Fund contains enough funds to meet the estimated costs of all projects. DLAE has approved the use of these funds for the projects.

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[27] Kentucky Public Service Commission, *Uniform System of Accounts For Class A/B Water Districts and Associations* at 14.

[28] *2017 Water Annual Report* at Ref Page 11.

c. Each of the projects listed in the Contract Modification that involves the construction of facilities is a system improvement project designed to correct an existing deficiency and to improve service quality. While the exception set forth in KRS 278.020(1)(a)2b was only enacted into statute in 2017, a similar exception has been contained in most Biennial Budget Acts since 2004. The Commission has interpreted "water line extension or improvement project" to include projects that involve system improvements other than water mains. In Case No. 2005-00278,[29] the Commission found that proposed improvements to a water treatment plant qualified for the exception. Similarly, in Case No. 2017-00270,[30] the Commission found a proposed project for which 42 percent of the construction costs were related to improvements other than water mains, including a pumping station and a water storage facility, qualified for the exception and did not require a Certificate.

E. KRS 278.020(1) does not require a Certificate to decommission or dismantling An Existing Facility

31. Seven of the proposed projects involve the decommissioning and dismantling of the six water storage tanks and the Central Water Treatment Plant. These projects do not involve the construction of any facilities or install or equipment. KRS 278.020(1) refers only to "the construction of any plant, equipment, property, or facility." It does not refer to the removal or dismantling of existing equipment. Accordingly, these projects would not require a Certificate.

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[29] *The Application of Sandy Hook Water District for a Certificate of Public Convenience and Necessity to Construct an Improvements Project Pursuant to KRS 278.020*, Case No. 2005-00278 (Ky. PSC Aug. 11, 2005).

[30] *Application of the Breathitt County Water District for the Issuance of a Certificate of Public Convenience and Necessity to Construct a Water System Improvements Project Pursuant to the Provisions of KRS 278.020 and 807 KAR 5:001*, Case No. 2017-00270 (Ky. PSC Aug. 16, 2017). *But see Application of Beech Grove Water System, Inc. to Incur Indebtedness of $125,251.00 for the Purchase of a Metering System*, Case No. 2016-00255 (Ky. PSC Aug. 3, 2016) (asserting that the purchase of a metering system is not exempt from the requirement for a Certificate because "the proposed installation of the new metering system is not 'a waterline extension or improvement project,' as it does not extend or improve an existing waterline.").

F. Summary

None of the projects set forth in the Contract Modification require a Certificate of Public Convenience and Necessity. Those projects involving the construction of facilities meet the criteria set forth in KRS 278.020(1)(a)2b and therefore fall within the exception set forth therein. Furthermore, those projects meet the Commission's historical interpretation of an "extension in the usual course of business." They address significant needs in the Fort Knox water treatment and distribution systems and will correct significant deficiencies that adversely affect water quality and pressure and the systems' efficiency. None will compete with any existing public utility facility nor infringe upon the existing certificates of other public utilities. Finally, because of the unique method of funding these projects, they will not materially affect Hardin District's existing financial condition or require an increase in utility rates.

WHEREFORE, Hardin District respectfully requests that:

1. The Commission expedite its review of this Application and enter a decision on this Application within 60 days of its filing; and

2. Enter an Order declaring that each of Hardin District's proposed waterworks improvements to the Fort Knox Military Installation's water treatment and distribution systems as identified in this Application is an ordinary extension in the usual course of business and does not require a Certificate.

Dated: February 25, 2019

Respectfully submitted,

SKEETERS BENNETT WILSON & HUMPHREY

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VERIFICATION

COMMONWEALTH OF KENTUCKY)
) SS
COUNTY OF HARDIN)

The undersigned, Stephen M. Hogan, being duly sworn, deposes and states that he is the General Manager of Hardin County Water District No. 1, the Applicant in the above proceedings; that he has read this Application and understands its contents; that the same is true of his own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, he believes same to be true.

Stephen M. Hogan
General Manager
Hardin County Water District No. 1

Subscribed and sworn to before me by STEPHEN M. HOGAN, General Manager, Hardin County Water District No. 1, on this February 25, 2019.

ANDREA M. PALMER
NOTARY PUBLIC
ID NO. 541264
MY COMMISSION EXPIRES
10/12/2019
STATE AT LARGE, KY.

NOTARY PUBLIC
MY COMMISSION EXPIRES: 10/12/2019
NOTARY ID: 541264

HARDIN COUNTY COURT

SPECIAL TERM, JULY 15, 1952

PRES. HON. E. S. LONG, JUDGE

Pursuant to a request filed with me as County Judge by Pete Kersey, Constable in District Four, Hardin County, on account of his not being eligible to act in the said District, the said Pete Kersey requested me to accept his resignation as such. Therefore, it is ordered that the said resignation be, and it is, accepted, and the said appointment shall stand for naught and that the said Pete Kersey is now relieved of any further official capacity in said district.

In the matter of Charles Clark, Administrator of the estate of E. J. Clark, a final settlement was this day returned, filed, and laid over.

In the matter of the estate of William T. Brown, an inventory and appraisement was this day returned, filed, and ordered recorded.

HERMAN C. DAVIS, ET AL PETITIONERS

PETITION

EX PARTE

We the undersigned state that we are resident freeholders of a proposed water district, hereinafter described, that we desire the County Court to establish a water district and appoint water commissioners for the purpose of furnishing a water supply to the undersigned and other residents and citizens of the territory hereinafter described; and we further state the establishment of such district is reasonably necessary for the public health, convenience, fire protection and comfort of the residents; that said proposed district is described as follows:

"Hardin County Water District No. 1"

Beginning at a point in the southeasterly boundary of the Fort Knox Military Reservation where it intersects the center line of U. S. Kentucky Highway 31 W, approximately one mile north of the intersection of Wilson Road and Highway 31W which is known as Radcliff and running 500 feet on each side of Highway 31W for a distance of approximately 5,280 feet to the intersection of Wilson Road and U. S. Highway 31W; thence, 500 feet west of the center line of Wilson Road, in a northerly direction along Wilson Road approximately 5,400 feet to the intersection of the Southern Boundary of the Fort Knox Military Reservation and the center line of Wilson Road; from the intersection of Red Hill Road and U.S. 31W 500 feet each side of Red Hill Road and running along Red Hill Road in a westerly direction 5000 feet to a point of ending; from the intersection of Wilson Road and Highway 31W, 500 feet each side of Wilson Road and running in a southeasterly direction along Wilson Road 7,500 feet to the intersection of Kentucky Highway 64 and Wilson Road which is known as Vine Grove Junction; thence 500 feet each side of Kentucky Highway 64 running in a westerly direction along Kentucky Highway 64 approximately 7,850 feet to a point of ending; from the intersection of Kentucky Highway 64 and Wilson Road, 500 feet each side of Wilson

Road running in a southerly direction along Wilson Road approximately 4,200 feet to the intersection of Wilson Road and Mill Creek Road which is known as Rogersville; thence 500 feet each side of Mill Creek Road running in a north easterly direction along Mill Creek Road approximately 5,200 feet to the intersection of the center line of Mill Creek Road and the southern boundary of the Fort Knox Military Reservation; from the intersection of Mill Creek Road and Wilson Road 500 feet west and 1500 feet east of the center line of Wilson Road running in southerly direction along Wilson Road approximately 3,500 feet to a point of ending, as per attached map.

J. L. McCoy		Red Hill Road
Lee Stephens		" " "
Clifford J. Decker		" " "
Russell S. Martin		" " "
Hubert C. Martin		" " "
H. C. Davis		Radcliff
Church at Mill Creek		
C. W. Yates	Right	Mill Creek
Denver Jones	"	" "
Raymodd C. Jones	"	" "
Henry G. Neely	Left	" "
Forrest D. Pesch	"	" "
R. O. Hargan	"	" "
Vernon L. Jones	Right	" "
Wallace J. Winfrey	"	" "
Homer G. Minor	(New Dixie)	Rogersville
Chas. R. Rogers		Rogersville Inn
James M. Young	Left	Mill Creek
Jimmie Cralle	Right	" "
Walter E. Johnson	Right	" "
C. E. Bennett	Right	" " Road
Joseph B. Hutcherson	"	" " "
Robert G. Sherrard	"	" " "
J. G. Drakos by wife	Left	" " "
Reinhold Schneider	"	" " "
Theo. E. Johnson	Right	" " "

Mrs. Walter Smith	D. E. Denson
Frank B. Bewley	Mr. and Mrs. C. M. Coffman
Mrs. E. K. Hand	Mrs. W. M. Logsdon
Joseph R. Cissell	Mr. and Mrs. Irwin Shields
Mr. & Mrs. Reathel T. Haven	Sheilds and Haven Apt.
Mr. and Mrs. Angel Yturralde	Mr. and Mrs. Cyril Durbin
Mrs. Sarah B and Joe Vick	Mr. & Mrs. Geo. R. Jenkins
Mr. & Mrs. William T. Pierce	Mr. & Mrs. Delbert H. Gaby
Mrs. & Mrs. T. Brown Logsdon	Mr. & Mrs. Glenn H. Cornetet
Mr & Mrs. James P. Greenwell	Raymond R. Dawley

	Mr. & Mrs. Floyd L. Logsdon	Mr & Mrs R. W. Powell	
	John H. Muhlherr	Rogersville	
	John Muhlherr	"	
	Mrs. Curtis C. Graham	"	
	Mrs. Ida Van Meter	"	
	John W. Rogers	"	
	James R. Sims	Radcliff	
	N. Dixie	Cpl. Augustus Freeman	W. H. Glaane
	N. Dixie	Joe Trabue	James F. Haephurs
	N. Dixie	James L. Osborn	Judd C. Gray
	N. Dixie	R. L. Brizendine	Spencer E. Emberton
	N. Dixie	William Ames	Bernie Atcher
	N. Dixie	Lloyd Nobles	Mattie Shelton
	N. Dixie	Carrol Gill	James Shelton
	N. Dixie	W. M. Boling, Sr.	

Male R Vine Grove R 2

Mrs. James C. Armstrong, Old 31 W

Charles L. Fox, Route #2, Vine Grove, Ky.

Felix G. Black, Route 2, VineGrove, Ky.

Warren G. Hansen, RR #2 Vine Grove, Ky.,

Gerald Wheatly "

W. P. McCollum, R#2 Vine Grove, Ky., Route #64

W. M. Brown, R#2, Vine Grove, Ky. Rogersville

Brown & New, R#2, Vine Grove, Ky.

Harry Corum, Rogersville, Ky.

Richard H. Maurer, Rogersville, Rt. Vine

Burton Raine, Vine Grove Junction

Paul Trustman, Vine Grove Junction

H. L. Froman, Vine Grove	W. C. Stone, Vine Grove R2
John A. Mather, VineGrove R2	Nelson Robinson, Vine Grove R2
Chas. B. Deaton, Vine Grove R2	Dixie-Thrift-Way Service Station
Simon Bros., Paul Simon, Vine Grove Jct.	Joe S. Tarpley, Elizabethtown, Ky.
H. C. Drane	Ruby Zwicker, Radcliff
Mrs. D. L. Hargan, Radcliff	L. H. Caudle, Radcliff, Ky.
Edward Haire, Radcliff	Albert L. Gojmerac, Radcliff
Anthony Keita, Radcliff	Wilber L. Berry, Radcliff

J. H. Blackville, Green Gables Tourst, Vine Grove, Ky. R#2

E. T. Murphy	Edith Payne Store
Earl Brown at Browns Store	Mary M. Brown, Radcliffe
Will Sattles, Radcliffe	Elmer L. Hargan, Radcliffe
Hickman Wingfield, Radcliffe	Kate Gray, Radcliffe
Fred Skaggs, Radcliffe	Paul J. Brown, Radcliffe

31W-N Burton Davis	Willie Atcher	H. J. Waldman	W. R. Kunnecke, Jr.
" Joseph F. Donahue	Martin Clarke by Edith Donohue	Narmany C. Carter	M. S. Haire
" Reason Briggs	Earnest Straney		

Court now adjourned.

W A Lucas

Judge

On the motion of J. Henry Clark it is ordered that T. C. Hall, H. E. McCullum, Sr., T. O. Gatton, or any two of them after first being duly sworn be, and they are, hereby appointed the appraisers of the estate of H. B. (Hilary B.) Clark.

HERMAN C. DAVIS, ET AL PETITIONERS

JUDGMENT

EX PARTE

It appearing to the Court that Herman C. Davis and more than 75 other resident freeholders of the district hereinafter described did on July 15, 1952, file their petition herein and that notice of the filing of said petition was published in three issues of the Elizabethtown News and three issues of the Hardin County Enterprise, both newspapers of general circulation in this county, and it further appearing that no objection or exception has been filed herein, and oral proof having been heard by the court, and the Court being advised, it is now ordered and adjudged by this Court as follows:

1. The establishment of the following described water district is reasonably necessary for the public health, convenience, fire protection and comfort of the residents, and a suitable name and number for such district is "Hardin County Water District No. 1". Said district is more completely described by name and number and boundary as follows:

"Hardin County Water District No. 1"

Beginning at a point in the southeasterly boundary of the Fort Knox Military Reservation where it intersects the center line of U.S. Kentucky Highway 31W, approximately one mile north of the intersection of Wilson Road and Highway 31 W which is known as Radcliff and running 500 feet on each side of Highway 31 W for a distance of approximately 5,280 feet to the intersection of Wilson Road and U.S. Highway 31W; thence, 500 feet west of the center line of Wilson Road, in a northerly direction along Wilson Road approximately 5,400 feet to the intersection of the Southern Boundary of the Fort Knox Military Reservation and the center line of Wilson Road; from the intersection of Red Hill Road and U.S. 31W 500 feet each side of Red Hill Road and running along Red Hill Road in a westerly direction 5000 feet to a point of ending; from the intersection of Wilson Road and Highway 31W, 500 feet each side of Wilson Road and running in a southeasterly direction along Wilson Road 7,500 feet to the intersection of Kentucky Highway 64 and Wilson Road which is known as Vine Grove Junction; thence 500 feet each side of Kentucky Highway 64 running in a westerly direction along Kentucky Highway 64 approximately 7,850 feet to a point of ending; from the intersection of Kentucky Highway 64 and Wilson Road, 500 feet each side of Wilson Road running in a southerly direction along Wilson Road approximately 4,200 feet to the intersection of Wilson Road and Mill Creek Road which is known as Rogersville; thence 500 feet each side of Mill Creek Road running in a north easterly direction along Mill Creek Road approximately 5,200 feet to the intersection of the center line of Mill Creek Road and the southern boundary of the

Fort Knox Military Reservation; from the intersection of Mill Creek Road and Wilson Road 500 feet west and 1500 feet east of the center line of Wilson Road, running in a southerly direction along Wilson Road approximately 3,500 feet to a point of ending.

2. The following named persons are hereby appointed water district commissioners for this district for the terms indicated:

W. M. Brown - Two Years

R. T. Logsdon - Three Years

H. C. Davis - Four years

3. Each of the commissioners shall execute a bond in the sum of One Thousand Dollars, said bond to be approved by this court, and providing for the faithful performance of his duties herein, and each commissioner shall be sworn to faithfully perform the duties of his position as provided by law.

Dated this 18th day of August, 1952.

In the matter of Rosalyn J. Berry, Guardian for Dorothy C. and Ray G. Dolly, a periodical settlement was this day returned, filed, and laid over.

In the matter of the First Hardin National Bank, Committee for William M. Arvin, a periodical settlement was this day returned, filed, and laid over.

Came William P. Barrett, minister of the Episcopal Church and Chaplain of the U. S. Army, and executed bond in the penal sum of one hundred (100) dollars with C. B. Jeffries as surety.

Came William P. Barrett and took the oath as required by law to perform marriage rites in the Commonwealth of Kentucky.

Court now adjourned.

W. S. Long Judge

HARDIN COUNTY COURT

SPECIAL TERM, AUGUST 21, 1952

PRES. HON. W. S. LONG, JUDGE

Came Charles B. Whitman, minister of the Methodist Church, and executed bond in the penal sum of one hundred (100) dollars with W. S. Long, as surety.

Came Charles B. Whitman and took the oath as required by law to perform marriage rites in the Commonwealth of Kentucky.

Court now adjourned.

W. S. Long Judge

HARDIN COUNTY COURT

SPECIAL TERM, AUGUST 22, 1952

PRES. HON. W. S. LONG, JUDGE

Came Louella Keith, widow of J. P. Keith, and produced an instrument of writing purporting to be the last will and testament of J. P. Keith, deceased. Said will was proven in due form of law by the oath of Elizabeth Ditto, one of the subscribing witnesses thereto, who attested the signature of Horace E. Tabb, the other subscribing witness thereto, and as such the same was established and ordered recorded.

Came Eugene Patterson and took the oath as required by law as a notary public for Hardin County. Said commission expires August 27, 1956.
Court now adjourned.

W. S. Long Judge

HARDIN COUNTY COURT
SPECIAL TERM, AUGUST 27, 1952
PRES. HON. W. S. LONG, JUDGE

In the matter of the First Hardin National Bank, Guardian for Wanda Joyce Horn Odom, a final settlement was this day returned, filed, and laid over.

In the matter of the First Hardin National Bank, Guardian for Shirley June Horn Morehead, a final settlement was this day returned, filed, and laid over.

Came Walter J. Vrudny and executed bond in the penal sum of one hundred (100) dollars with W. S. Long as surety to perform marriage rites in the Commonwealth of Kentucky.

Came Walter J. Vrudney, Lutheran minister, and took the oath as required by law to perform marriage rites in the Commonwealth of Kentucky.
Court now adjourned.

W. S. Long Judge

HARDIN COUNTY COURT
SPECIAL TERM, AUGUST 29, 1952
PRES. HON. W. S. LONG, JUDGE

In the matter of the estate of J. P. Keith, an inventory and appraisement was this day returned, filed, and ordered recorded.

In the matter of the First Hardin National Bank, Trustee for Mrs. Katherine Q. Montgomery, a periodical settlement was this day returned, filed, and laid over.
Court now adjourned.

W. S. Long Judge

HARDIN COUNTY COURT
SPECIAL TERM, AUGUST 30, 1952
PRES. HON. W. S. LONG, JUDGE

Came W. M. Brown, H. T. Logsdon, Herman C. Davis, duly appointed water commissioners for Hardin County Water District 1, and executed bond in the penal sum of one thousand (1000) dollars each as follows:

W. M. Brown with H. T. Logsdon as surety.
H. T. Logsdon with W. M. Brown as surety
Herman C. Davis with W. M. Brown as surety.

Came W. M. Brown, H. T. Logsdon, Herman C. Davis and took the oath as required by law as the Water Commissioners for Hardin County Water District One.

In the matter of the First Hardin National Bank, Trustee for the Glendale Christian Church, a periodical settlement was this day returned, filed, and laid over.

ORDERS — Hardin COURT

Special Term, Day. 22 Day of October 19 54

HARDIN COUNTY COURT
SPECIAL TERM, OCTOBER 22, 1954
PRES. HON. J.R.TERRILL, JUDGE

In the matter of the estate of Dorothy Mae Lockard, an inventory and appraisement was this day returned, filed and ordered recorded.

In the matter of the estate of James Michael Whalen, an inventory and appraisement was this day returned, filed and ordered recorded.

In the matter of the Appointment of a Guardian for Raymond Dowdell:

This day came Raymond Dowdell, a minor child of Erma K. Dowdell and (father deceased) Dowdell, and over fourteen yesrs of age and chose Erma K. Dowdell as his Guardian, and the court being sufficiently advised, it is ordered and adjudged that Erma K. Dowdell be and she is hereby appointed Guardian for the aforesaid Raymond Dowdell.

WHEREUPON, the said Erma K. Dowdell appeared in open court and took the oath prescribed by law and duly qualified as such guardian, and together with J. T. Hatcher, as surety, who was accepted and approved by the court, entered into and acknowledged and executed bond in the sum of $2500.00, being the amount fixed by the court.

Court now adjourned

_____ Judge

HARDIN COUNTY COURT
SPECIAL TERM, OCTOBER 23, 1954
PRES. HON. J. R. TERRILL, JUDGE

Came Martha Hagan and produced her commission as Notary Public for Hardin County, signed by the Secretary of State and executed bond in the penal sum of Five Hundred ($00) Dollars, with F. J. Lanz as surety which bond is accepted and approved by the court.

Came Martha Hagan and took oath as required by law as Notary Public of Hardin County law. Said Commission expires August 14, 1958.

In the matter of Appointment of Commissioner for Hardin County Water District No. 1.

It appearing to the court that there is now a vacancy in the office of Commissioner for the Hardin County Water District No.1, because the term to which W. M. Brown was appointed has expired, it is ordered that W. M. Brown be and he is appointed Commissioner for Hardin County Water District No. 1 for a term of four years. It is ordered that the bond of said Commissioner be fixed at $1000.

Came W. M. Brown and executed bond in the amount of $1000 with Brown Logsdon and H. C. Davis as sureties, which bond is approved and accepted.

Came W. M. Brown and was sworn to faithfully perform the duties of his position as required by law.

EXECUTIVE ORDER 2012-002

This matter has been brought before the Hardin County Judge/Executive upon application of the Hardin County Water District No. 1 to expand its boundaries;

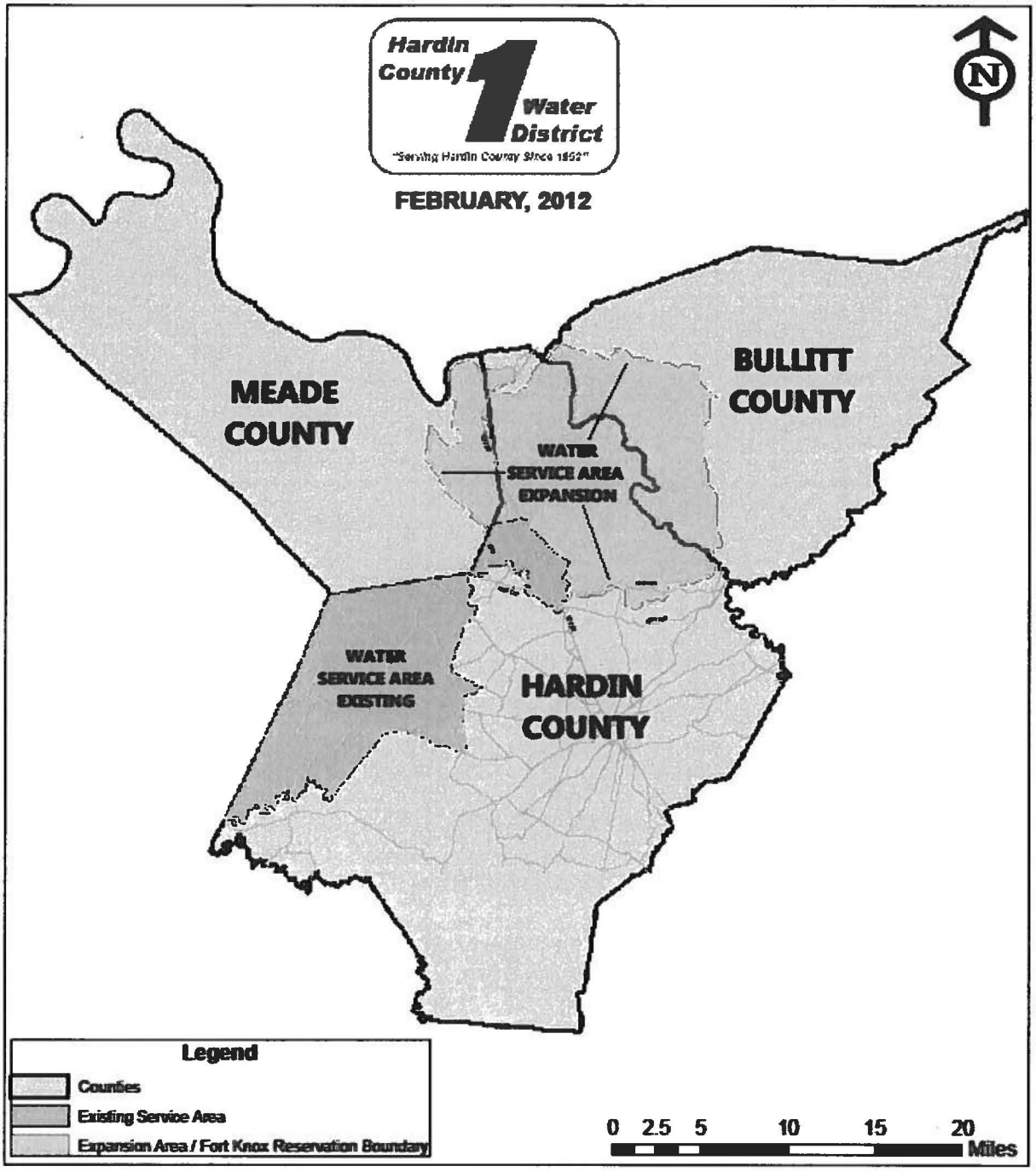
Notice of the Petition has been published in *The News-Enterprise* on 15 February 2012;

The Judge/Executive having considered the request and conducted a public hearing finds said request to be reasonable, and hereby approves the extension of the boundaries of the Hardin County Water District No. 1 in order to facilitate the acquisition and operation of water production and treatment facilities located within the boundaries of the Fort Knox Military Installation. Henceforth the boundaries of the Hardin County Water District No. 1 shall extend into and encompass all of that portion of Hardin County, Kentucky, which lies within the Fort Knox Military Installation and as more specifically identified in attached Exhibit A.

Harry L. Berry
Hardin County Judge/Executive

ATTESTED:

Kenneth L. Tabb, Clerk by D.C.
Kenneth L. Tabb
Hardin County Clerk



HARDIN COUNTY WATER DISTRICT NO. 1
EXPANSION OF WATER TERRITORY
PRIVATIZATION OF FORT KNOX WATER UTILITY
PSC ORDER 2011-00416

Technical Proposal Submittal

UP Contract No.: SP0600-11-C-8270

Revised ISDC Projects and Revised Capital Improvement Program Potable Water Utility System at Fort Knox Army Installation, Kentucky

Hardin County 1 Water District
"Serving Hardin County Since 1952"

Stantec

Stantec Consulting Services Inc.
Design with community in mind
www.stantec.com

Prepared for:
Defense Logistics Agency Energy

4 September 2015

Hardin County Water District No. 1

Serving Radcliff and Hardin County for Over 60 Years

1400 Rogersville Road
Radcliff, KY. 40160

September 4, 2015

Mr. Carl Silverstone
Contracting Officer
Defense Logistics Agency Energy
8725 John J. Kingman Road
Fort Belvoir, VA 22060-6222

SUBJECT: Technical Proposal Submittal - UP Contract No.: SP0600-11-C-8270
Revised ISDC Projects and Revised Capital Improvement Program
Potable Water Utility System at Fort Knox Army Installation, Kentucky

Mr. Silverstone;

The Hardin County Water District No. 1 (HCWD1) is pleased to submit this Technical Proposal to the Defense Logistics Agency Energy (DLA) in response to DLA's request for proposal issued by electronic mail on 14-August-2015. This proposal outlines the approach, methodology and study used to develop a revised list of Initial System Deficiency Corrections and a Capital Improvement Plan to make significant improvements to the quality, quantity and reliabilty of the Ft. Knox Water System (FKWS).

By implementing this proposal, HCWD1 believes this will provide more value and wiser spending of Department of Defense budget dollars. The proposed projects would also provide a noticeable and measureable improvement to the FKWS which will benefit the soldiers, military families, Government employees and contractors which work and live on post daily.

This Proposal remains a valid offer until December 31, 2015, and we are prepared to work with you to extend this period should it be required. As you proceed with your final assessment and review of our Technical Proposal, I invite you to contact me should you have any questions or need any additional information.

Thank You

Jim Bruce, General Manager

Encl.

Preamble:

Hardin County Water District No. 1 (HCWD1) submits this proposal to the Defense Logistics Agency Energy (DLA) in response to DLA's request for proposal (RFP) issued by electronic mail on 14-August-2015. The original RFP required a submittal deadline of 28-August-2015. An extension date was approved by DLA by electronic mail on 24-August-2015, with new deadline of 4-September-2015. Further clarification to the proposal requirements was provided to HCWD1 by DLA on 21-August-2015.

HCWD1 proposes to partially modify the list of current approved and funded Initial System Deficiency Corrections (ISDC) in accordance with section C.11.2.5 of its Utility Privatization (UP) contract with the Government. Since HCWD1 obtained the Ft. Knox Water System (FKWS) in 2012, it has completed extensive study of the system, and has obtained a significant amount of knowledge about the current deficiencies of the FKWS since beginning operations.

HCWD1's operating partner, the Louisville Water Company (LWC) have also found significant differences between the two water treatment plants (WTP) and raw water sources on Ft. Knox. Along with the completion of the recent Water Quality Modeling & CIP Development project by Stantec Consulting Services, HCWD1 believes its proposed projects will significantly improve water quality, water pressure, fire flows and WTP capacity and WTP reliability and resiliency, if the proposed CIP (Capital Improvement Plan) changes are approved by DLA.

As requested in the RFP, HCWD1 has also calculated a reduction to its current Utility Service Charge. This revision is provided for in section G.4 of the UP contract, as well as under FAR 52.241-7. HCWD1 also believes that by implementing its proposal, several of the currently planned ISDC projects will no longer be needed and those funds can be re-directed to the proposed ISDC projects.

By implementing this proposal, HCWD1 believes this will provide more value and wiser spending of DoD budget dollars. The proposed projects would also provide a noticeable and measurable improvement to the FKWS which will benefit the soldiers, military families, Government employees and contractors which work and live on post daily.

Technical Proposal Submittal – UP Contract No.: SP0600-11-C-8270

Revised ISDC Projects and Revised Capital Improvement Program
Potable Water Utility System at Fort Knox Army Installation, Kentucky

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1. Executive Summary

In 2012, Hardin County Water District No. 1 (HCWD1), under a partnership effort with Louisville Water Company (LWC), was granted a 50-year privatization contract to operate the Fort Knox Water System (FKWS). The contract required several studies and improvements, known as Initial System Deficiency Corrections (ISDCs), to be implemented during the first five years of the contract. Funding for those ISDCs is potentially available to be reallocated for alternate projects that may yield greater benefit to the FKWS.

HCWD1 retained Stantec Consulting Services Inc. (Stantec) to perform hydraulic and water quality modeling and to develop a Capital Improvements Plan (CIP) for their Fort Knox water distribution system. Stantec was issued notice to proceed on the project on June 26, 2014.

Stantec updated HCWD1's existing hydraulic model for FKWS, developed a water quality model, and performed intensive field testing to calibrate and validate the models. Those models were utilized to identify a series of current and future system deficiencies.

Collaboratively, HCWD1, LWC, and Stantec developed a CIP that addresses several system objectives including improvements to water quality, water quantity (fire flow), and system pressures.

The resulting CIP generally includes:

- Upgrading the Muldraugh Water Treatment Plant (WTP) to meet its rated capacity of 7.0 million gallons per day (MGD), convert disinfection to chloramines, and other reliability upgrades. It was determined through the study that Muldraugh was a better WTP option than keeping and upgrading the Central WTP;
- Construct two new 1.5 million gallon (MG) elevated storage tanks at a hydraulic grade line (HGL) elevation of 901 feet, or 40 feet higher than the 8 existing tanks, which are recommended to be decommissioned or demolished;
- Construct water line improvements and check valves to improve system circulation and minor line improvements for improved fire flow; and
- Install water quality flushing units at three locations if demands persist at about 1 MGD or less and water quality issues are observed.

The estimated cost opinion, proposed invoice schedule, and ISDC reallocation recommendations for the proposed CIP is included in our ***Firm Fixed Price Proposal***, dated September 4, 2015.

2. Introduction

In general, the Water Quality and CIP Development project objective was to develop a CIP capable of improving the system while considering and balancing the following goals:

- Water quality: tank turnover, improved circulation and water age, and maintaining disinfectant residuals at 0.7 milligram per liter (mg/L) or higher (matches LWC's water quality goal);
- Water pressures: achieve minimum of 40 pounds per square inch (psi) in the system (requirement based on Unified Facilities Criteria, or UFC) with a goal of meeting 50 psi or greater system wide;
- Water supply: identify most appropriate supply and treatment alternative based on stakeholder input and system needs;
- Fire flow capabilities: meet UFC regulations[1] (flow rate requirement varies by building-type) system wide and maintain or improve existing fire flow capability at every location within the system;
- Resiliency/sustainability: maintain onsite water supply and consider interconnections for redundancy/backup water source;
- Demand flexibility: design a CIP flexible enough to meet varying demands from 0.7 MGD (million gallons per day) to 5 MGD based upon on-going Fort Knox activities (e.g., training missions, troop influx or reductions); and
- Operations and Maintenance: minimize long-term costs and resource needs as appropriate.

3. Existing Water System

Fort Knox is an Army post located south of Louisville and north of Radcliff in Kentucky. The 170 square mile base covers portions of Bullitt, Hardin, and Meade Counties. The existing Fort Knox Water System is generally comprised of:

- Approximately 163 miles of pipelines;
- Generally, pipes are oversized allowing for adequate fire flow transmission and minimizing head losses across the system;
- 8 elevated storage tanks totaling 3.55 million gallons of elevated storage (uniform overflow elevation of approximately 861 feet);
- Due to low pressures in areas of the system, tanks are generally only operated within the top 10 to 15 feet;
- Two treatment facilities, Central and Muldraugh, with rated capacities of approximately 3.5 and 7 MGD, respectively; and
- A highly fluctuating demand due to significant population variances over time associated with the Army Base's needs, but generally in the range of about 2 MGD.

[1] UFC 3-600-01 Fire Protection Engineering for Facilities and UFC 3-230-01 Water Storage, Distribution and Transmission

Figure 1 depicts the distribution map for the existing water system. **Figure 2** illustrates the daily demands for the FKWS for January 2014 through May of 2015, estimated as the total WTP production minus the water sold to external customers through interconnections (those interconnections are anticipated to no longer be utilized following completion of HCWD1's interconnection project with LWC in 2016). A comparison of the Muldraugh and Central WTPs is presented in **Table 1** below.

Table 1. WTP Comparison

Item	Central WTP	Muldraugh WTP
Sources	West Point groundwater (3 wells) and McCracken Spring surface water	West Point groundwater (12 wells)
Drought Tolerance	McCracken Spring summer flows can be limited or non-existent (Well-field okay)	No issues with West Point groundwater
Quality	Surface source is very poor during high runoff periods; Potential chloride intrusion in wells	Potential chloride intrusion
Capacity (Current)	2.5 MGD (Cannot meet max day demands)	4.5 MGD
Capacity (Potential)	3.0 (With upgrades)	7.0 (With upgrades)
Redundancy	Single Treatment Train	Dual Treatment Trains
Geographic Expansion Area	Very Limited, middle of post	Sufficient land, outside cantonment
Distance to Purchased Water Source	6,000 feet away	On Site (24-inch main)
Distribution / Circulation	Poor water circulation throughout post/demand areas degrading water quality and higher risk of non-compliance	Best water circulation and water quality throughout post
Upgrade Cost Opinion	$8.4 Million	$4.8 Million

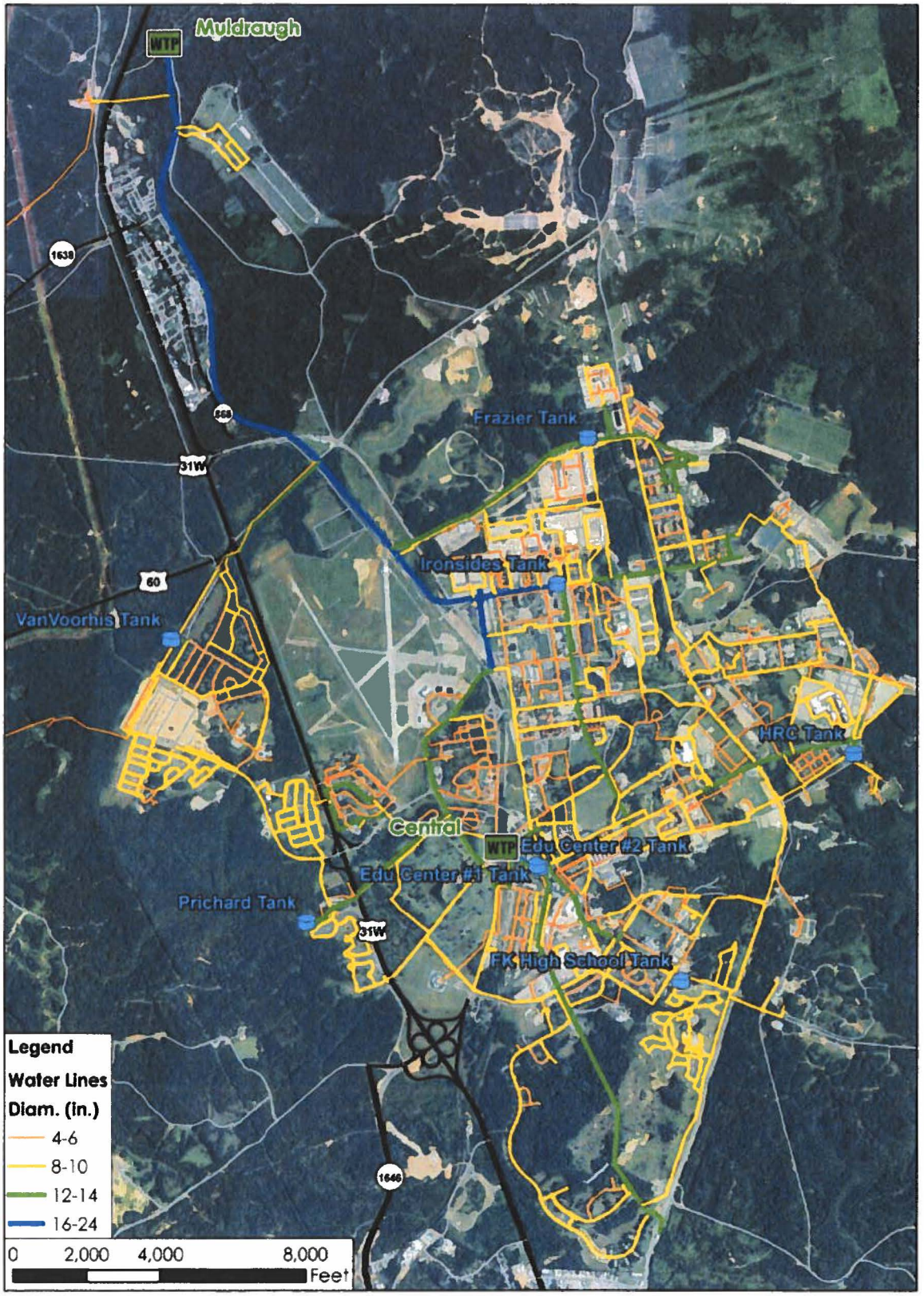

Figure 1. Existing Fort Knox Water System

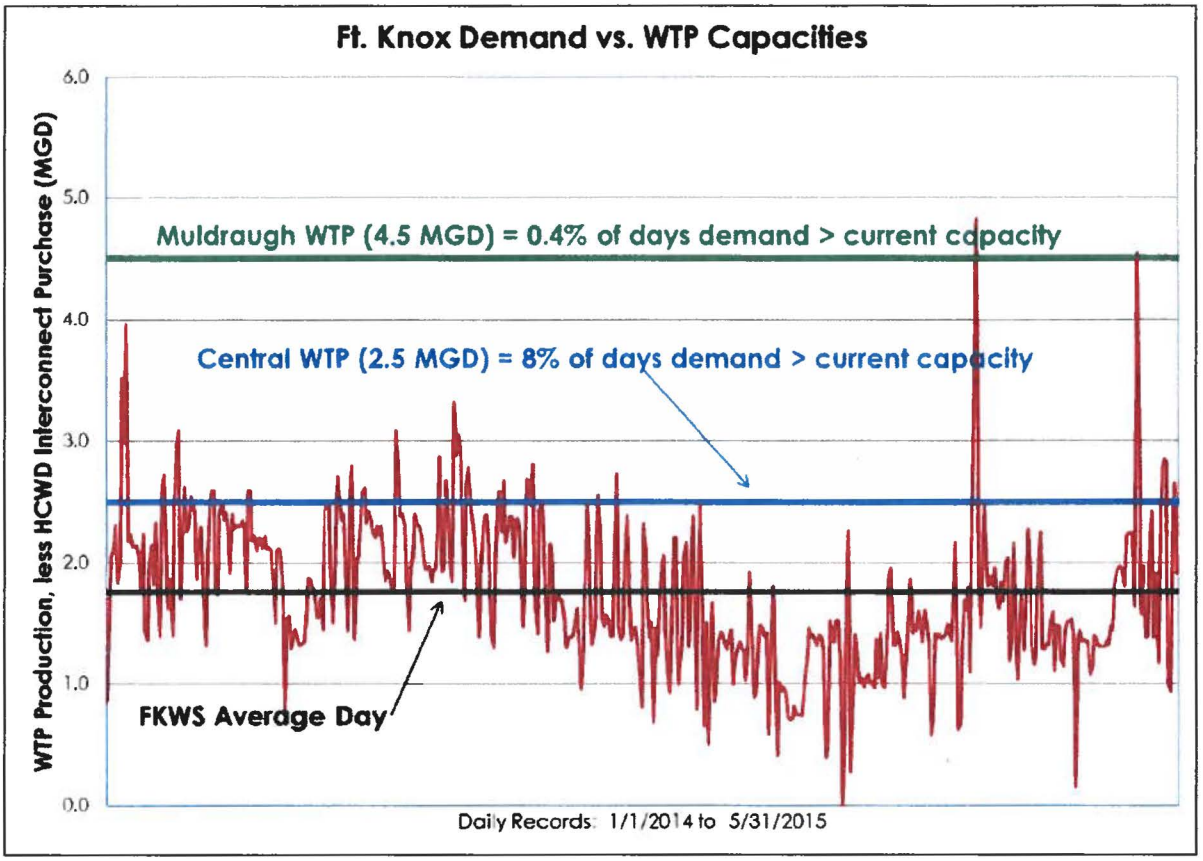

Figure 2. FKWS Demand/WTP Production History

4. Modeling and Field Testing

4.1. Original Model Data Provided

At the project onset, HCWD1 provided Stantec with the following data to support the validation and calibration of the existing hydraulic model:

- Previous hydraulic modeling report, prepared by HDR, Inc.;
- Initial Distribution System Evaluation (IDSE) study;
- Geographic Information System (GIS) files representing the distribution system, including the locations of pipes with diameters, tanks, water treatment plants (WTP), pump stations, known valves and hydrants (the majority of this information was collected and mapped by HCWD1 within the last two years);
- WTP production records;
- Pipe break information;
- Complaints lists, including reported water quality and pressure concerns;
- Information regarding possible future population trends indicating an anticipated minimum population of approximately 5,000 persons on base, a current typical population of 10,000 to

20,000 persons depending upon training schedules, and a potential fluctuation of over 20,000 persons within a 48-hour period depending upon Army activity and needs; and

- Available Supervisory Control and Data Acquisition (SCADA) data which includes tank levels, chlorine data, pump discharge pressures, and pump on/off cycles.

4.2. Field Testing

Field sampling was performed to provide additional calibration data for the hydraulic model and to collect water quality data to support the development, calibration, and validation of the water quality model. Stantec prepared a field testing plan and coordinated with LWC and HCWD1 staff prior to the testing. Field testing for water quality parameters was performed by Stantec, HCWD1, and LWC personnel on August 4, 2014 through August 7, 2014. To minimize the number of variables affecting the testing results, only the Central WTP was operated during the testing period (Muldraugh WTP would have to start/stop during the testing period and was therefore placed off-line during the testing). Eleven (11) sites were selected for water quality sampling. Highlights of the types and quantity of testing performed include the following:

- 11 fire flow tests were performed by HCWD1 on July 29, 2014 at each of the 11 water quality testing locations;
- Four fire flow tests were performed with nearby tank off-line, including Site 3 with the Old Ironsides Tank off-line, Site 5 with the HRC Tank off-line, Site 9 with the Fort Knox HS Tank off-line, and Site 10 with the Prichard Tank off-line;
- Drawdown tests were performed for the high-service pumps at the Muldraugh WTP;
- Field Sampling for Water Quality Parameters (8/4/14 – 8/7/14, 11 Sites):
    - Approximately 70 field fluoride measurements;
    - Approximately 50 Central WTP and approximately 30 Muldraugh WTP fluoride lab measurements. (Fluoride lab measurements utilized for calibration of hydraulic/age model);
    - 47 free chlorine samples;
    - 14 pH samples; and
    - 14 heterotrophic plate count (HPC) samples.
- 5-day simulated distribution system (SDS) testing performed for Central WTP and for Muldraugh WTP to determine chlorine decay rates for finish water leaving each WTP. An additional 10-day SDS test was performed for Muldraugh WTP to verify the results and gather additional information.

The accuracy associated with the free chlorine analyzer is: ±5 % or ±0.03 mg/L (ppm), whichever is greater.

4.3. Hydraulic Model

Stantec performed a technical review of the existing hydraulic model and performed validation of model elements and additional calibration based on the provided information discussed in Section 4.2. Field Testing. The KY-PIPE hydraulic model software was utilized to analyze fire flow requirements on this project. The remaining hydraulic modeling was performed utilizing EPANET 2.0,

developed by the U.S. Environmental Protection Agency's (EPA) National Risk Management Research Laboratory.

Specific activities performed on the hydraulic model to improve the model accuracy include the following:

- Updated connectivity problems from a 16-inch water line to a 14-inch line just east of the airfield;
- Where regional flow demands had been consolidated to single node(s), demands were redistributed to provide a better overall representation;
- Updated demand at Wilson Road Pump Station. An average demand of 72.5 gallons per minute (gpm) was previously placed at this location. This demand was updated to 800 gpm and assigned a diurnal curve that better simulates the actual pumping from the Wilson Road Pump Station;
- Reduced demand in vacant residential areas located in the west and south areas of the system. The demands were originally distributed by counting structures and assigning an average demand per structure, resulting in artificially high demands when structures are vacant;
- Added demand for the Muldraugh/Carpenter area based on Fluoride and Chlorine Calibration Data;
- Updated base elevations of the tanks and included typical volume curve for each tank;
- Updated pump curve information based on SCADA data (Central WTP) and drawdown tests (Muldraugh WTP);
- Added additional 12-inch diameter line and 8-inch line for the new construction near Van Voorhis Tank;
- Inserted resistance (acts as partially closed valve) into Old Ironsides tank to better match SCADA data; and
- Altitude valves appear to prevent the HRC and Fort Knox High School tanks from draining below a certain elevation, therefore simple rules were placed in the model that would close a pipe when each tank reached a certain elevation to simulate the altitude valve.

4.4. Water Quality Model

A water quality model was developed using the EPANET 2.0 software. The purpose of the model was to identify current and future water quality deficiencies such as high water age areas and low chlorine residuals, assist HCWD1 in developing their CIP, and update IDSCs, as appropriate.

The model was generally developed based on the following information. Calibration and validation of the model is discussed in the following section.

- Field fluoride testing to identify the duration for water to reach various parts of the system, i.e., a tracer analysis;
- SDS testing identified the natural chlorine decay rate from each WTP;
- Temperature data to identify tank stratification and areas of increased chlorine decay; and

- Field chlorine levels were utilized to determine the decay rate attributed to the pipe walls throughout the system.

4.5. Model Calibration/Validation

Calibration and development of the water quality model was performed utilizing the collected field data from the 11 sites while the Central WTP was in operation. Model validation was performed using the chlorine SCADA data provided by HCWD1 with the Muldraugh WTP in operation. This was performed to further calibrate and validate the hydraulic and water quality performance of the model while the Muldraugh WTP was in operation, since the field testing was performed while operating the Central WTP.

Our calibration targets included the following recommendations for calibration of the chlorine residual for a majority of the sites:

- For water age ≤1-day old, the average chlorine residual over the last 24-hours of the simulation to be within 0.15 mg/L of the average recorded chlorine residual;
- For water age between 1-day and 3-days old, the average chlorine residual over the last 24-hours of the simulation to be within 0.2 mg/L of the average recorded chlorine residual; and
- For water age ≥3-days old, the average chlorine residual over the last 24 hours of the simulation to be within 0.25 mg/L of the average recorded chlorine residual.

The general trends of the model calibration results indicate the predicted head for each tank is generally within about 1 psi, or 2.3 feet, and the modeled chlorine and fluoride levels are generally within 0.2 mg/l for most of the sites. A few sites did not meet the specified calibration targets; however, this was generally a result of time-specific minor hydraulic inconsistencies that does not have a significant impact on the overall model performance or suitability for this study. Calibration results and the digitial model files are available in Stantec's **Water Quality Model and Capital Improvements Plan (CIP) Development Report**, dated August 31, 2015. Both the hydraulic and water quality models appear to be of sufficient accuracy to support the development and analyses of the CIP alternatives for the FKWS.

5. Existing Conditions Results

Based upon the calibrated models, Stantec performed a series of model simulations at varying demands ranging from 0.7 MGD to 5.0 MGD to identify water quality, quantity, and pressure deficiencies. General overall findings based on the analyses include:

- Source: Muldraugh WTP offers superior source water quality and additional treatment capacity;
- Pressure: Low system pressures not meeting UFC regulations, and requiring tanks to generally operate within the top 10 to 15 feet of the tank to maintain pressure;
- Fire flow: isolated areas of limited fire flow due to water main configurations. Predominant fire flow concern is due to low pressures rather than lack of available flow; and
- Water quality: poor system circulation and limited tank turnover results in areas of poor chlorine residuals, particularly during low demands.

Results of the analyses are depicted in the following figures:

- **Figure 3** – Peak Hour Pressures;
- **Figure 4** – Fire flow results depicting the flow rate at each location in the system while maintaining 20 psi throughout the system;
- **Figure 5** – Fire flow results depicting the flow rate above or below the UFC regulation while maintaining 20 psi throughout the system. UFC requirements were estimated for each area/building type by reviewing aerial photography to determine required fire flow;
- **Figure 6** – Minimum chlorine residual with only the Central WTP operating (assumes 1 MGD demand);
- **Figure 7** – Minimum chlorine residual with only the Muldraugh WTP operating (assumes 1 MGD demand);
- **Figure 8** – Average chlorine residual with only the Central WTP operating (assumes 1 MGD demand); and
- **Figure 9** – Average chlorine residual with only the Muldraugh WTP operating (assumes 1 MGD demand).

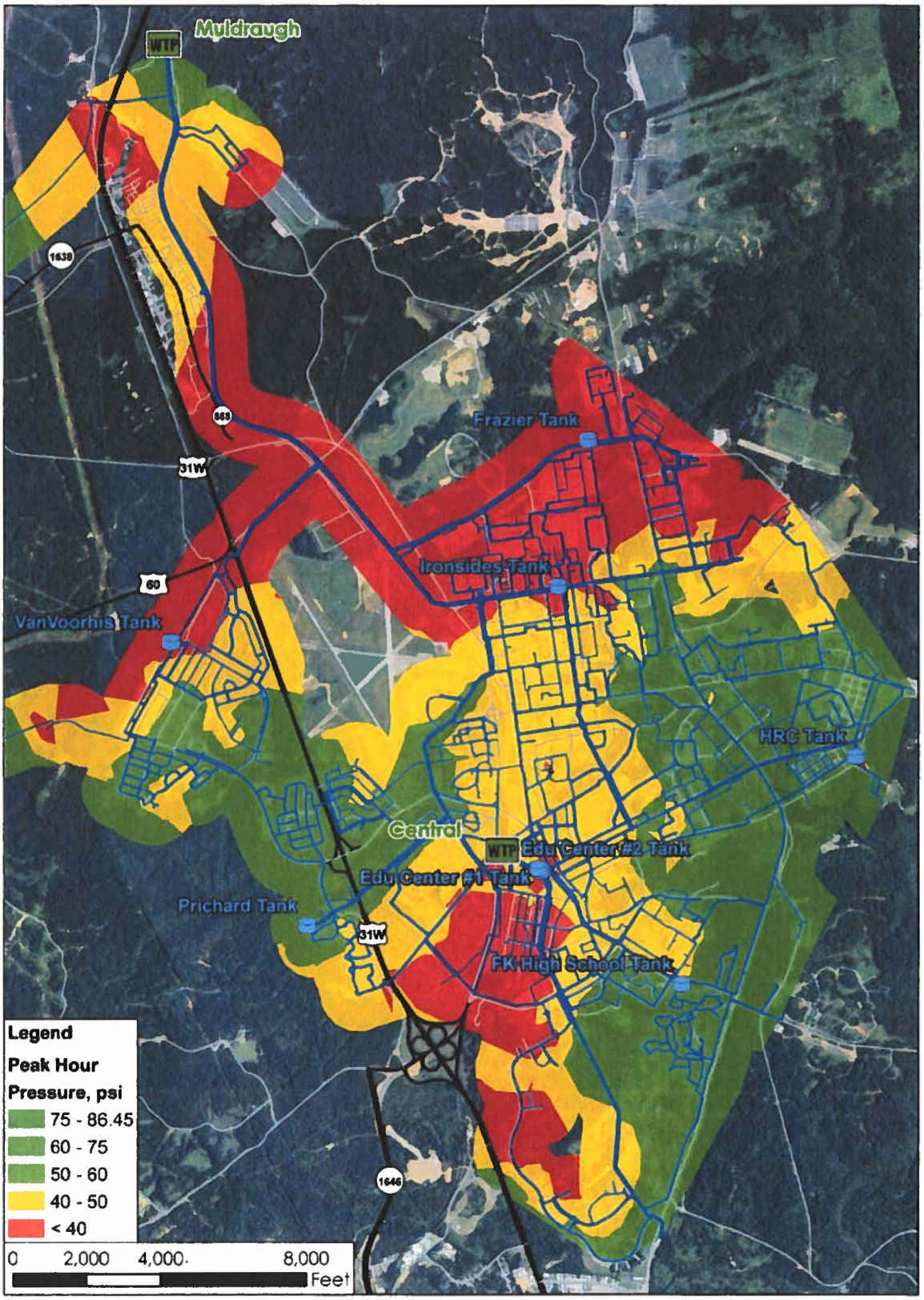

Figure 3. Existing Conditions Peak Hour Pressure

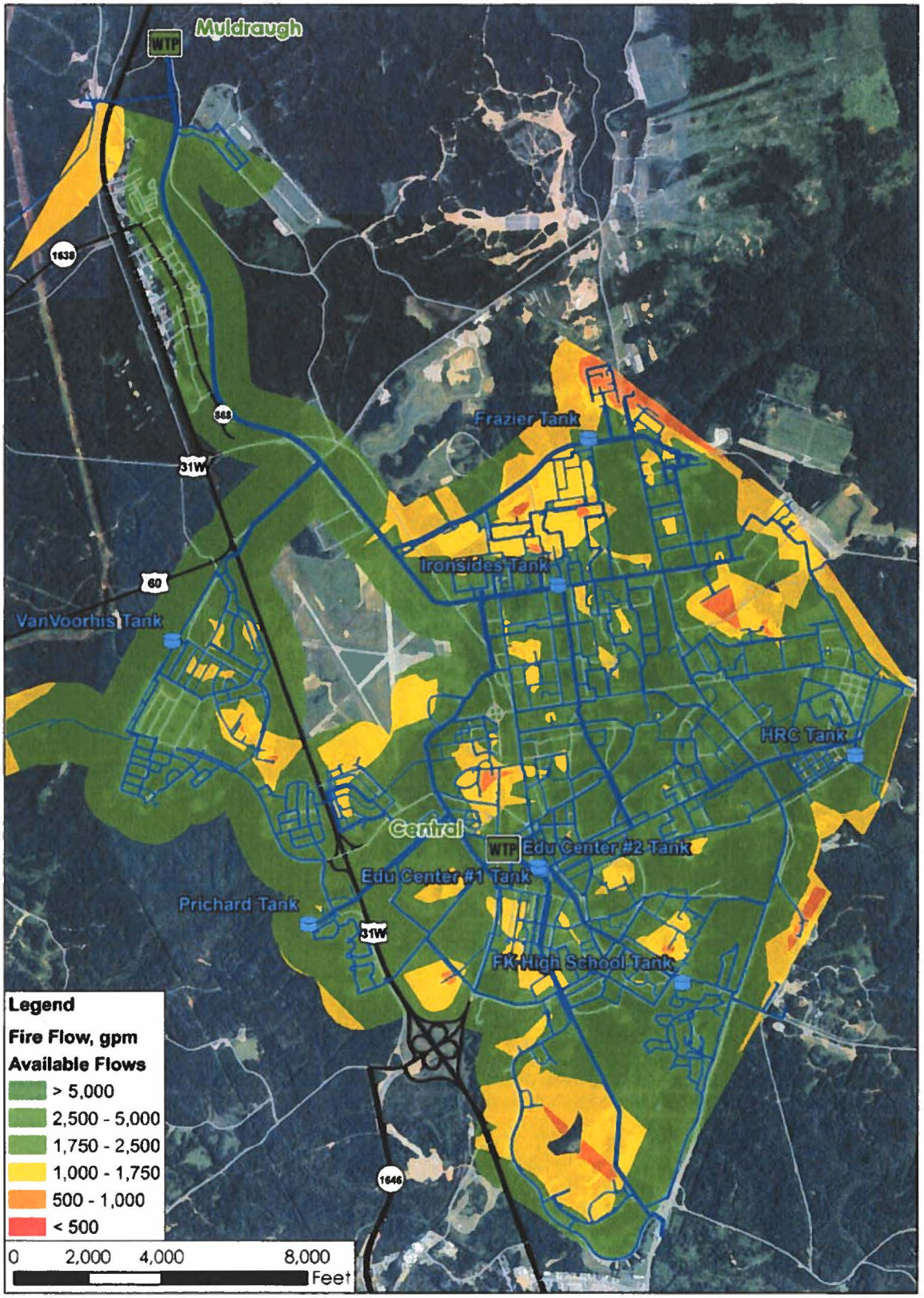

Figure 4. Existing Conditions Fire Flow Results *(Available Fire Flows)*

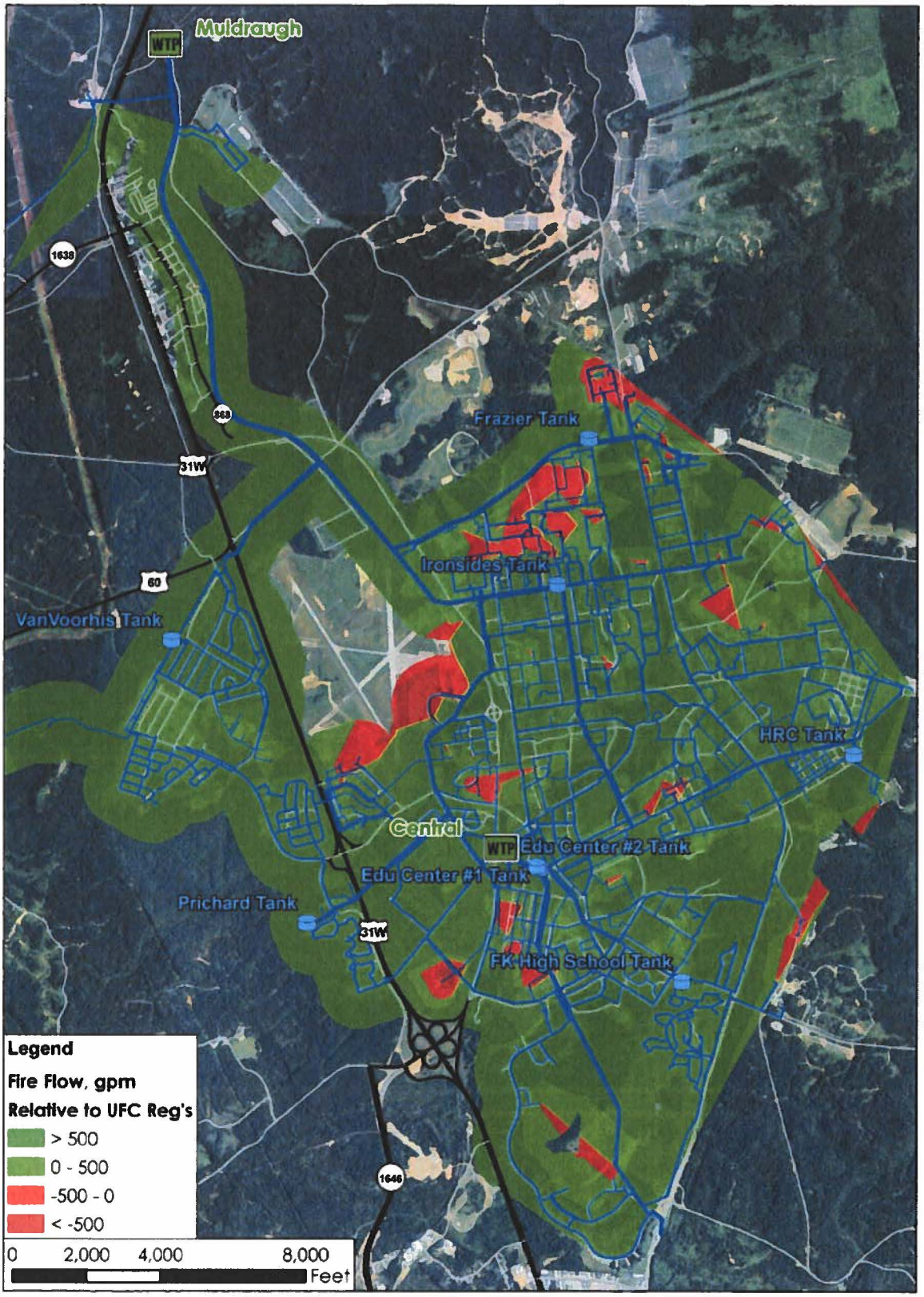

Figure 5. Existing Conditions Fire Flow *(Above or Below Generalized UFC Regulations)*

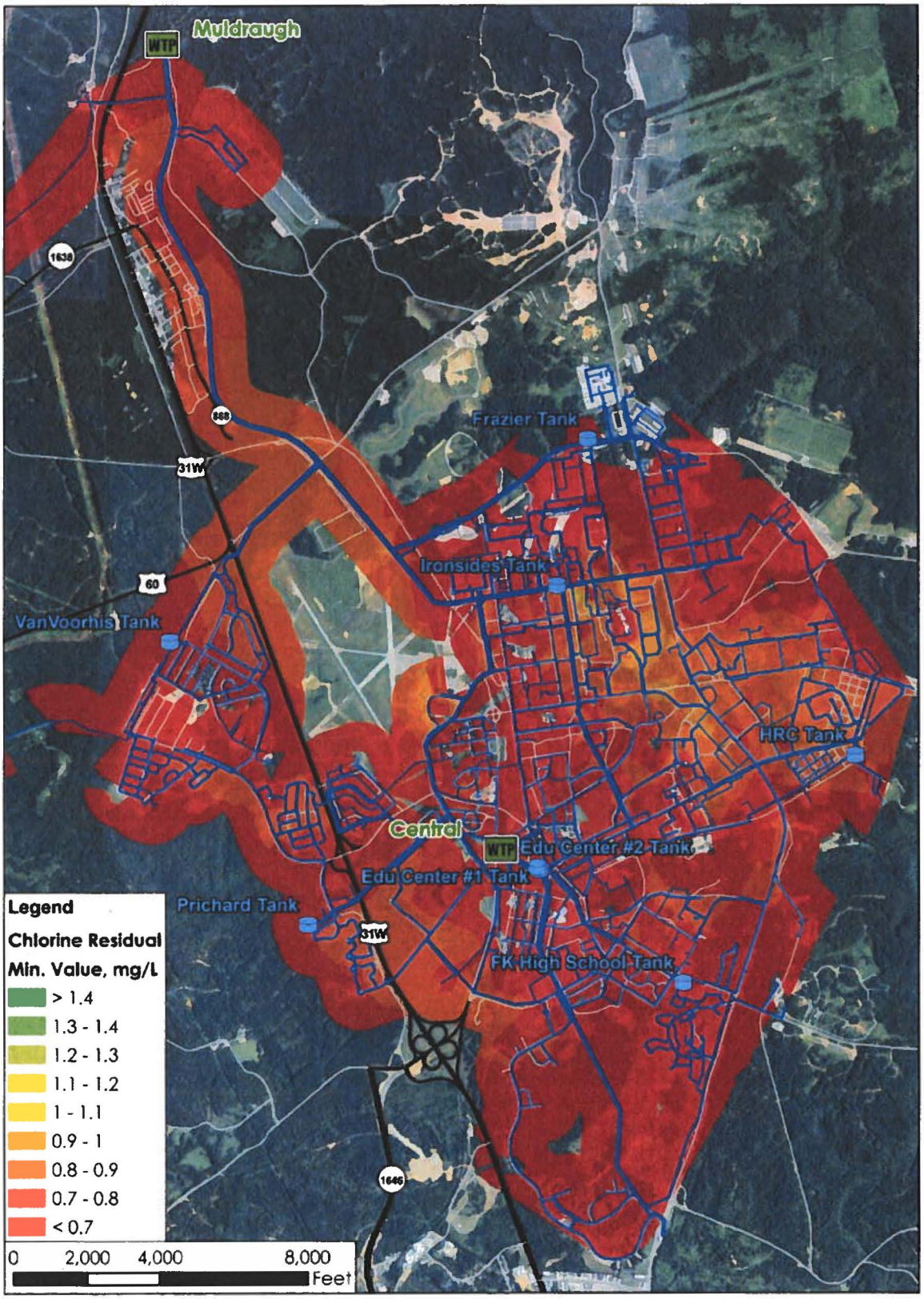

Figure 6. Existing Conditions Minimum Chlorine Residual (Central WTP)

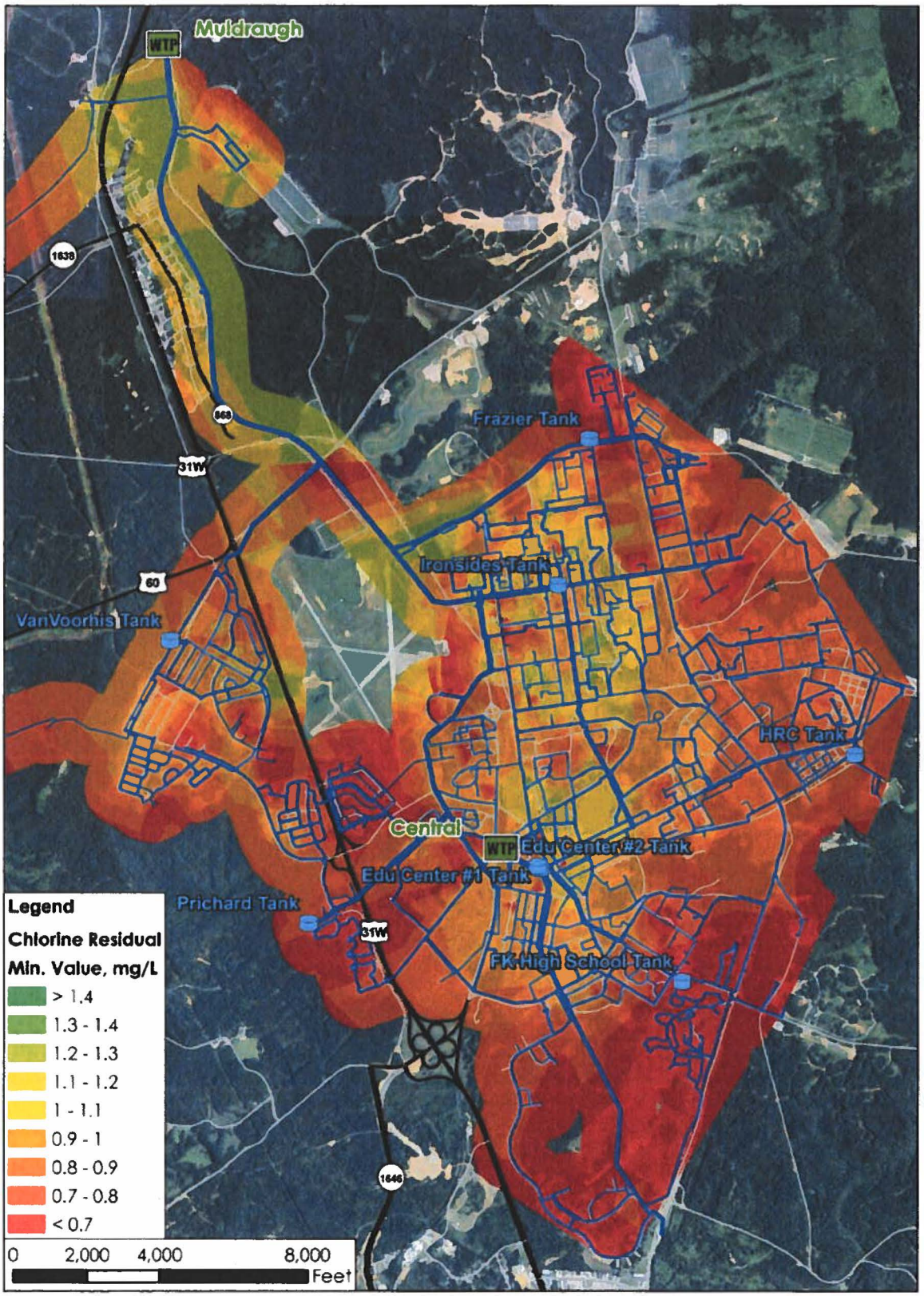

Figure 7. Existing Conditions Minimum Chlorine Residual (Muldraugh WTP)

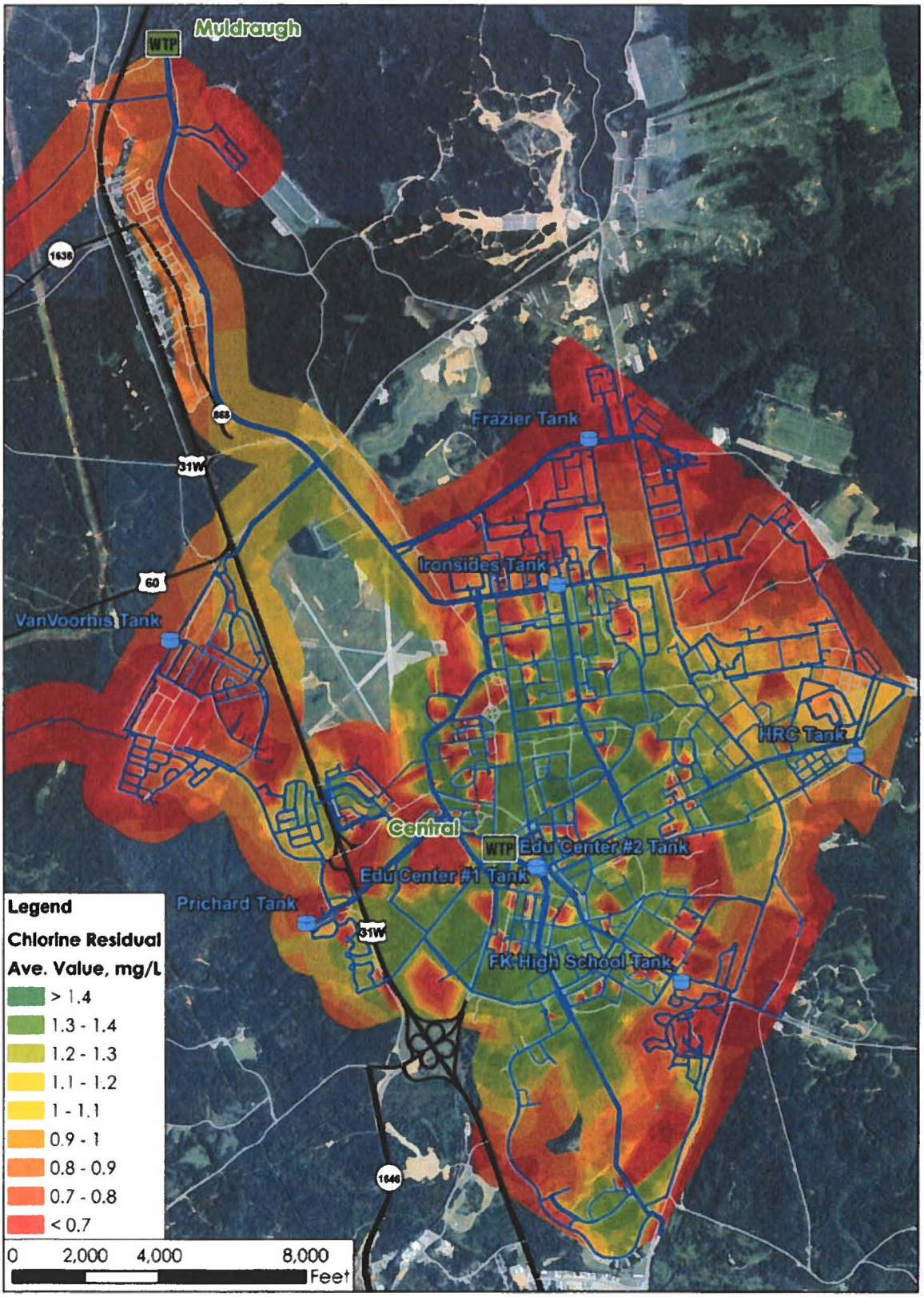

Figure 8. Existing Conditions Average Chlorine Residual (Central WTP)

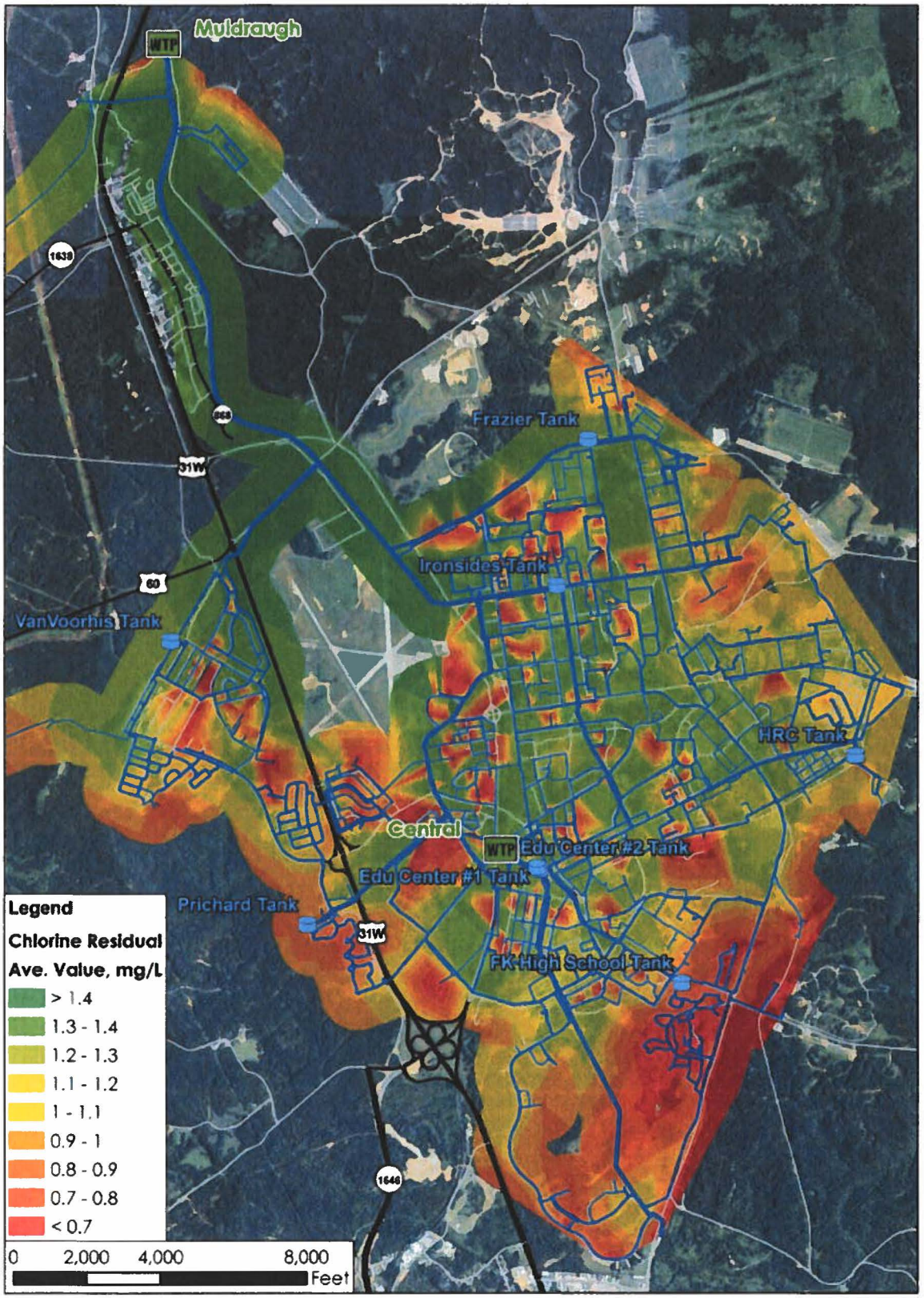

Figure 9. Existing Conditions Average Chlorine Residual (Muldraugh WTP)

6. Recommended Capital Improvements

6.1. CIP Development Process

Stantec identified system deficiencies at various locations within the system as discussed in Section 5. Various project elements were analyzed with the model to determine the benefits to the system, specifically considering the balance between water quantity (fire flow), quality, and pressures, as well as additional considerations discussed in Section 2.

Project elements considered included a new pressure zone in the northern part of the base cantonment area, various pressure reducing valves and check valves to drive circulation in more desirable patterns for water quality, as well as water main and tank improvements. Project elements and scenarios were discussed and evaluated collaboratively through a series of workshops with HCWD1, Louisville Water Company, and Stantec on:

- July 8, 2014 – project kickoff meeting/general system operation improvements;
- August 21, 2014 – model results workshop and initial CIP recommendations;
- September 25, 2014 – CIP development workshop;
- October 20, 2014 – CIP development workshop;
- November 25, 2014 – CIP development workshop;
- April 8, 2015 – finalize CIP for presentation to Fort Knox and stakeholders; and
- May 21, 2015 – tour of the Muldraugh WTP to review recommended improvements and assist LWC with cost opinions.

6.2. Stakeholder Presentations

Following the development of the CIP, meetings were held with the Fort Knox stakeholders on:

- April 16, 2015 – at Fort Knox with Fort Knox engineering officials; and
- July 16, 2015 – web meeting with Fort Belvoir contracting personnel and local Fort Knox stakeholders.

6.3. Proposed CIP Projects Summary

Brief descriptions and project-specific benefits of the recommended CIP projects are included in the following narrative. Graphical depictions of the proposed CIP benefits are provided in **Figures 12 to 14** following the narratives. These projects are depicted geographically on the Proposed CIP Overview Plan at the end of this proposal in **Figure 15**.

Project 1) Muldraugh WTP Improvements:

This project involves general upgrades to the WTP for long-term reliability. General project requirements include:

- Replacing high service pumps to meet the proposed new HGL of about 901 feet (versus current tank overflow elevation of about 861 feet);
- Chemical feed system improvements and redundancy;
- Filter gallery piping rehabilitation;
- Air scour and surface wash;
- Main treatment plant building rehabilitation and new control room and water quality laboratory;
- SCADA improvements;
- Installation of grid-based backwash supply;
- Concrete rehabilitation;
- Perimeter fencing and security enhancements;
- Regrading and paving of parking and delivery areas;
- Conversion of disinfectant to chloramines; and
- Influent piping improvements to allow both treatment trains (4.5 MGD and 2.5 MGD, currently at separate influent elevations) to operate simultaneously, thereby increasing capacity from 4.5 MGD to 7.0 MGD.

Projects 2 and 3) Two New 1.5 Million Gallon Tanks:

Installing two new 1.5 MG tanks with an overflow elevation about 40 feet higher than the existing tanks (901 feet versus 861 feet existing). One tank is to be placed near the existing Old Ironsides Tank. The other proposed location is in the vicinity of the existing Educational Center Tanks. These tanks form the backbone of the CIP in terms of improved pressure and appropriate circulation in the system to improve water quality. Based on feedback from project stakeholders, the proposed locations may alter slightly during project implementation.

Based on feedback to date, this proposal assumes the location of the tanks to be:

- The New Old Ironsides Tank will be just south of Frazier Road across from the existing Frazier Tank (37.923ºN, 85.950ºW). This location will include about 500 linear feet of additional 16-inch water main in conjunction with the tank project; and
- The New Education Center Tank will be located along the 12-inch main about 1,000 feet south of Gold Vault Road near Estrada Avenue (37.880ºN, 85.953ºW). This location will include about 800 linear feet of additional 16-inch water main in conjunction with the tank project.

Pressure: The new overflow elevation can increase pressures in the system by about 18 psi. Currently about 12-percent of the system is not meeting the required pressure regulations of 40 psi. These areas are generally in the northeast and near the Gold Vault. **Table 2** illustrates the before and after summary of pressures within the FKWS.

Table 2. Pressure Results with Proposed CIP

Pressure Conditions	Existing Conditions (%)	Proposed CIP (%)
Percent of System Below 40 psi (UFC Regulation)	12	0
Percent of System Below 50 psi (Pressure Goal)	45	1
Percent of System Between 60 and 80 psi (Ten States Standards Recommendation)	22	67

Fire Flow: The current system generally has adequately sized lines and/or looping to provide the required fire flow from any location in the distribution system without significant friction losses. Therefore, increasing pressures in the system result in greater fire flows and pressures during fire events. Increased pressure also provides sufficient pressure for sprinklers in several locations that previously would not have had sufficient pressure for sprinkler operation.

Water Quality: Existing tank levels are generally kept at least 75-percent full due to low pressure problems, which does not allow for good tank turnover and results in "recycled" water in the tanks. The location of some tanks, combined with poor tank turnover and mixing, leads to stratified zones of poor chlorine residual. **Figure 10** demonstrates what is happening in several of the existing tanks in the distribution system (particularly the Van Voorhis, Frazier, and HRC/WWTP Tanks). The two new proposed 1.5 MG tanks will have mixers installed and be built in preferred locations to prevent "recycled" water.

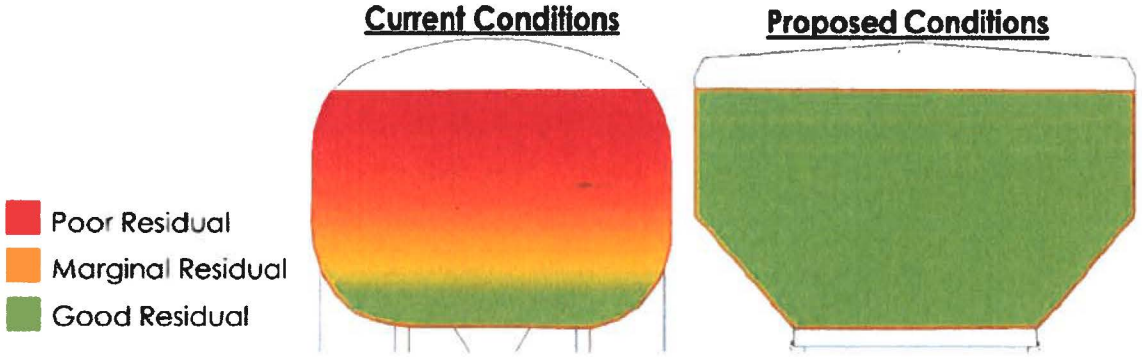

Figure 10. Stratification Occurring in Several Existing Tanks

If water demand continues to decrease at Fort Knox these water quality deficiencies will become more significant. Water quality concerns will be most notable when the system demand falls below 1.5 MGD for an extended period of time. **Table 3** indicates the results of the water quality model for different demand conditions for existing versus the proposed CIP scenarios (results include all proposed CIP projects, not just the tanks). The reported residuals are at the tank, but it should be noted that the chlorine residual continues to decrease by about 0.1 to 0.4 mg/L as it travels from the tank to the customer.

Table 3. Water Quality Results with Proposed CIP

Demand Condition (gal/day)	Current System		Proposed CIP	
	Tank Name	Min Residual (mg/L)	Tank Name	Min Residual (mg/L)
700,000	Edu. Center 1	1.12	Prop. Tank (Ironsides)	1.28
	Edu. Center 2	1.07	Prop. Tank (Edu Ctr)	1.09
	HRC/WWTP	1.01		
	Ironsides	1.15		
	Van Voorhis	0.81		
	Frazier	0.83		
	FK High School	0.90		
	Prichard	0.97		
1,000,000	Edu. Center 1	1.32	Prop. Tank (Ironsides)	1.34
	Edu. Center 2	1.21	Prop. Tank (Edu Ctr)	1.20
	HRC/WWTP	1.12		
	Ironsides	1.30		
	Van Voorhis	0.98		
	Frazier	0.83		
	FK High School	1.06		
	Prichard	1.14		
1,500,000	Edu. Center 1	1.24	Prop. Tank (Ironsides)	1.38
	Edu. Center 2	1.16	Prop. Tank (Edu Ctr)	1.27
	HRC/WWTP	1.17		
	Ironsides	1.34		
	Van Voorhis	1.04		
	Frazier	0.85		
	FK High School	1.16		
	Prichard	1.23		

Operations and Maintenance Impacts: The overall operations and maintenance costs associated with the two large tanks will be significantly less than the maintenance of the existing 8 tanks, particularly considering the painting costs. The proposed tanks are anticipated to be composite tanks (steel bowl supported by a concrete column or pedestal). Composite tanks offer significant operations and maintenance cost reduction because only the bowl requires painting.

System Flexibility: The current operations require that the elevated storage tanks remain relatively full for all different types of demand conditions to maintain adequate pressures in the system. For low demand conditions, this causes an excessive amount of elevated storage and resulting detriment to water quality. The proposed tanks will increase the pressures, allowing for the operating levels of the tank to be adjusted to coincide with the anticipated daily demand. This can lead to optimizing energy costs and water quality within the system.

Tank Height Concerns: One concern relating to the proposed tanks is the additional 40 feet in height for the proposed tanks, specifically related to the nearby airfield. **Figure 11** includes tank geometry

for a composite tank to assist in determining the potential highest elevation of the proposed tank(s). Lighting and cell antenna(s) are also anticipated to be placed on top of the tank. Ground elevations at the Old Ironsides and Education Center Tanks' locations are about 758 feet and 745 feet, respectively.

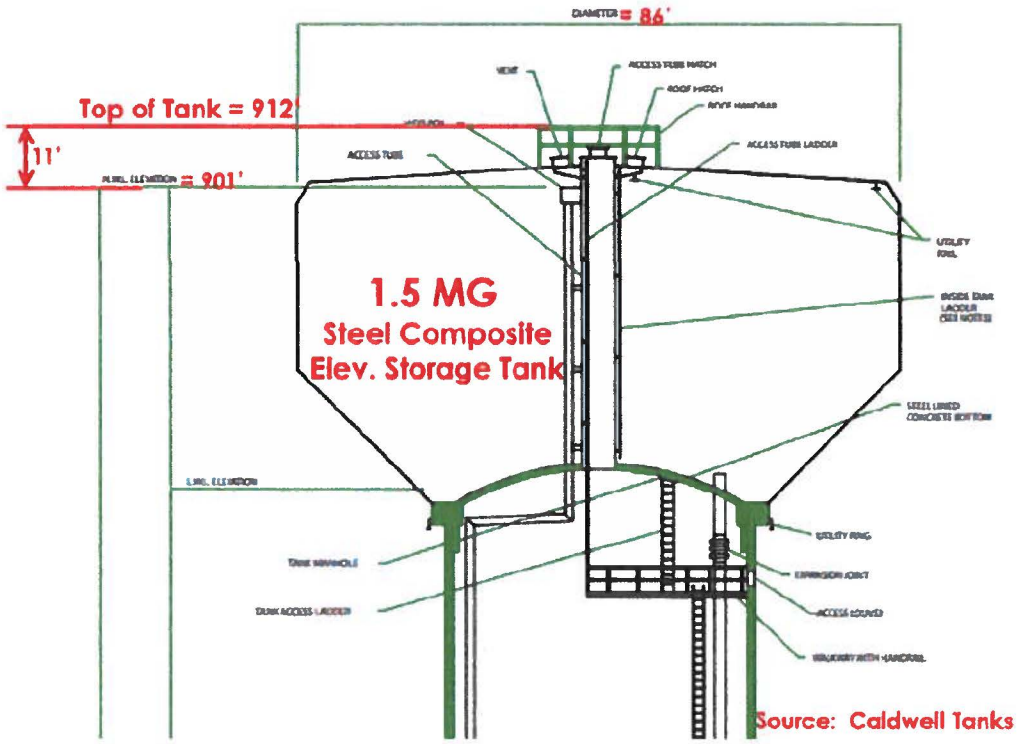

Figure 11. Example Tank Geometry and Resulting Top Elevation

Project 4) Park Road 14" Main Extension:

This project involves extending approximately 1,200 linear feet of the existing 14-inch line along Park Road to connect to the existing 16-inch line, which runs to the new proposed 1.5 MG Tank located in the vicinity of the existing Education Center Tanks. This project will provide a more direct flow path to the new proposed tank to maintain similar tank levels in both proposed tanks and provide fresh water for improved tank turnover.

Fire Flow: The improvement will allow a direct line from the proposed storage tank to the western side of the system, helping improve fire flows at every location in the system. **Table 4** depicts the anticipated fire flow improvements as a result of this project.

Table 4. Fire Flow Results with Proposed CIP Project

% of System	Additional Fire Flow (gpm)
20	30 - 300+
25	10 - 30
55	<10

Water Quality: The 14-inch line extension allows fresher water (i.e., with a better residual) to enter the tank, thus improving the overall residual in the tank. **Table 5** indicates the model-predicted water quality improvements attributed to the project.

Table 5. Water Quality Results with Proposed CIP Project

Demand Conditions (gal/day)	With 14" Extension Residual in Tank (mg/L)	Without 14" Extension Residual in Tank (mg/L)
700,000	1.17	1.09
1,000,000	1.27	1.21
1,500,000	1.34	1.28

Projects 5, 14, and 15) Automatic Flushers at Dietz, Van Voorhis, and Prichard Areas:
These projects include the installation of automatic hydrant flushers at the select areas that may be prone to water quality concerns if low demand scenarios persist. These areas are recommended to be monitored and if low chlorine residuals are present, automatic flushers may be installed to improve water quality in the areas. **Table 6** depicts the potential benefit at each location for three low-demand scenarios. The analysis is based upon the hydrant flushing 5,000 gallons once every three days. The flush volume may be modified based on field observations.

Table 6. Water Quality Results with Proposed Flushers (5,000 gallons/3 days)

Demand Condition (gal/day)	Lower Dietz		Van Voorhis		Prichard	
	With Flusher Average Residual (mg/L)	Without Flushing Residual (mg/L)	With Flusher Average Residual (mg/L)	Without Flusher Residual (mg/L)	With Flusher Average Residual (mg/L)	Without Flushing Residual (mg/L)
700,000	0.85	0.65	1.05	1.00	0.96	0.88
1,000,000	0.96	0.85	1.18	1.14	1.12	1.04
1,500,000	1.12	1.00	1.20	1.20	1.24	1.14

Projects 6, 7, and 8) Isolated Fire Flow Line Improvements:
These projects are designed to convey sufficient fire flow capacities to selected areas not meeting current UFC fire flow regulations. Specific areas include:

- Project 6 – Gold Vault Area: Install about 600 linear feet of 8-inch water line parallel to the existing 6-inch line to the Gold Vault. The proposed CIP increases available fire flow at the Gold Vault from 590 gpm to 2,120 gpm.
- Project 7 – North of Frazier Tank/Wilson Road: Install about 200 linear feet of 8-inch water line under Wilson Road to provide an additional loop to increase the available fire flow for the storage areas and buildings located along Wilson Road. There are several hydrants in this area which have about 1,000 gpm of available fire flow under existing conditions. Hydrants located on the existing 8-inch line in this area increase in fire flow availability by approximately 450 gpm. Hydrants located along the existing 6-inch lines in the area increase by about 200 to 400 gpm.
- Project 8 – 7th Armor Division Cut-Off Road: Install about 1,500 linear feet of 6-inch water line along the Road to increase fire flow and connect two dead end lines. Looping the system

also provides a secondary water quality benefit. Fire flow at specific buildings along the road are increased as follows:

- From 940 gpm to 1,530 gpm at Building 7241;
- From 850 gpm to 1,460 gpm at Building 7238;
- From 940 gpm to 1,450 gpm at Building 7234; and
- From 1,530 gpm to 2,030 gpm at Building 7232.

Project 9) Decommission Central WTP and Large Diameter Mains from Service:
This project will involve decommissioning the existing Central WTP and extraneous large mains in the area. Taking these facilities out of service should only be done after improvements to the Muldraugh WTP have been completed so that the Muldraugh WTP can meet the water supply needs of the post. The project is considered low priority and does not significantly affect system pressures or water quality. Taking the facilities out of service presents operations and maintenance savings, as only one WTP would require operation.

Leaving the facility in place may result in additional system resiliency should the need to restart operation of the WTP occur in the future. For the purposes of this proposal, it is assumed that this project will include the removal/decommissioning of:

- Exterior tankage, including dewatering and backfill;
- Generator and generator building;
- Exterior electrical facilities and minor appurtenances; and
- Ancillary buildings (not including main plant building).

The main plant building at the Central WTP will not be decommissioned, other than to remove specific water treatment equipment such as pumps, chemical feed equipment, SCADA, and instrumentation. Fort Knox will retain ownership and responsibility for the building and its internal structures and systems.

Project 10) Installation of Check Valves near New Education Center Tank:
This project involves installing three check valves on lines exiting the proposed Education Center Tank. The check valves will be placed on existing 12-, 8-, and 6-inch water lines. The check valves provide a minor improvement to water quality for low demand, or less than 1 MGD, conditions. The check valves direct water away from the proposed Education Center Tank which prevents water from "recycling" in the tank. The check valves decrease water age in the southern part of the Post by up to one day for low demand conditions.

Projects 11, 12, 13, 16, and 17) Remove Elevated Storage Tanks:
These projects include removal of existing tanks no longer in service (due to the construction of the two proposed tanks) and can be performed independent of the remaining CIP projects. Removal of these tanks may be cost-neutral depending upon current scrap metal prices. Removal of these tanks also presents long-term operations and maintenance savings, especially with respect to painting costs. It is assumed that the existing Education Center Tanks and Old Ironsides Tank will be removed during construction of the new tanks at or near those sites. The remaining tank removal projects include:

- Project 11 – Frazier Tank: Remove 500,000 gallon elevated storage tank at 2797 Frazier Road; tank height is about 100 feet;

- Project 12 – Van Voorhis Tank: Remove 500,000 gallon elevated storage tank at 5899 Jamison Street; tank height is about 103 feet;
- Project 13 – Prichard Tank: Remove 500,000 gallon elevated storage tank at 4773 8th Armored Division Drive; tank height is about 145 feet;
- Project 16 – HRC Tank (also known as WWTP Tank): Remove 500,000 gallon elevated storage tank at 7101 9th Cavalry Regiment Avenue; tank height is about 183 feet; and
- Project 17 – Fort Knox High School Tank: Remove 500,000 gallon elevated storage tank at 7561 Dixie Street; tank height is about 141 feet.

6.4. Proposed CIP Implementation

Upon approval of their CIP, HCWD1 anticipates completing all 17 CIP projects within a three year design and construction period. Due to the raised hydraulic grade line across post, many projects are required to be implemented in parallel. **Table 7** on the following page identifies these specific parallel or predecessor projects along with the proposed CIP implementation schedule. Table cells shaded in red indicate the duration of engineering/design services and those shaded in blue indicate the construction/installation services associated with each project.

Table 7. Proposed CIP Schedule and Sequencing

Project Nos.	Project Name	Year 1		Year 2		Year 3		Sequencing Comments
1	Muldraugh WTP Improvements	Design	Design	Construction	Construction	Construction	Construction	High-service pumps must be complete prior to new tanks (Projects 2 &3); Remaining upgrades prior to Decommissioning of Central WTP
2, 3	Two New 1.5 Million Gallon Tanks		Des.	Constr.	Constr.			In parallel with Muldraugh WTP upgrades
4	Park Road 14" Main Extension		Des.	Constr.	Constr.			Completed in parallel with new tank (Project 3) to promote desired circulation
5, 14, & 15	Installation of Three Automatic Flushers					Constr.	Constr.	Near end of CIP to assess and validate low-demand water quality concerns
6, 7, & 8	Isolated Fire Flow Line Improvements		Design	Constr.	Constr.			Not dependent upon other projects, but should be completed early to meet fire flow requirements
9	Decommission Central WTP				Des.	Con.	Con.	After primary reliability upgrades are complete at Muldraugh WTP (Proj. 1)
10	Installation of Check Valves near New Education Center Tank		Design	Constr.	Constr.			Completed in parallel with new tank (Project 3) to promote desired circulation
11, 12, 13, 16, & 17	Remove Elevated Storage Tanks				Design	Constr.	Constr.	Must remain until new tanks are constructed (Projects 2 &3)

6.5. Proposed CIP Benefits (Before vs. After Figures)

The water quality, fire flow, and pressure benefits attributed to the proposed CIP presented in Section 6.3. are depicted on **Figures 12 through 14** on the following pages. Each figure includes the existing conditions, or "before CIP", results on the left of the page and the proposed conditions, or "after CIP", results on the right.

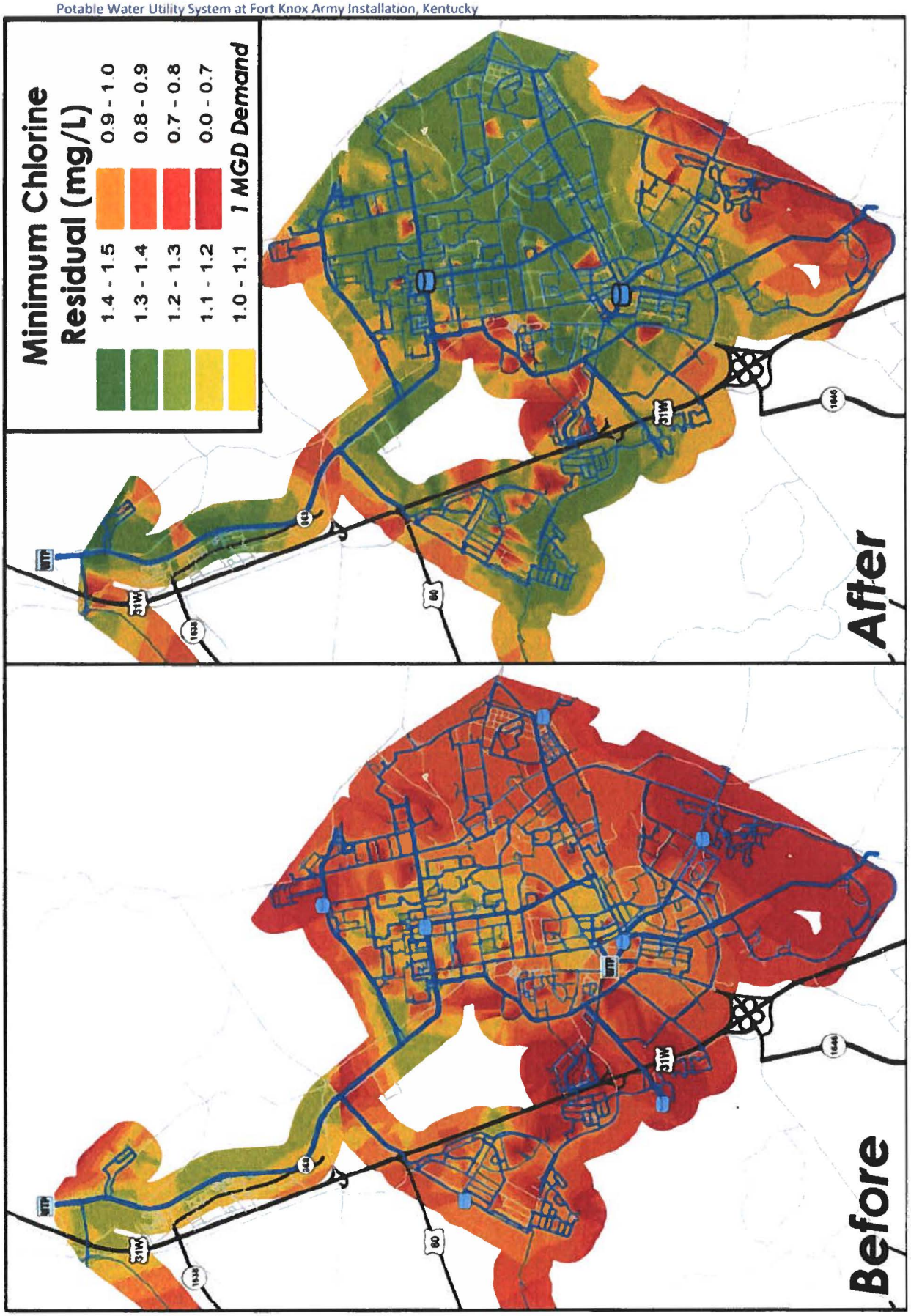

Figure 12. Water Quality Improvements with Proposed CIP

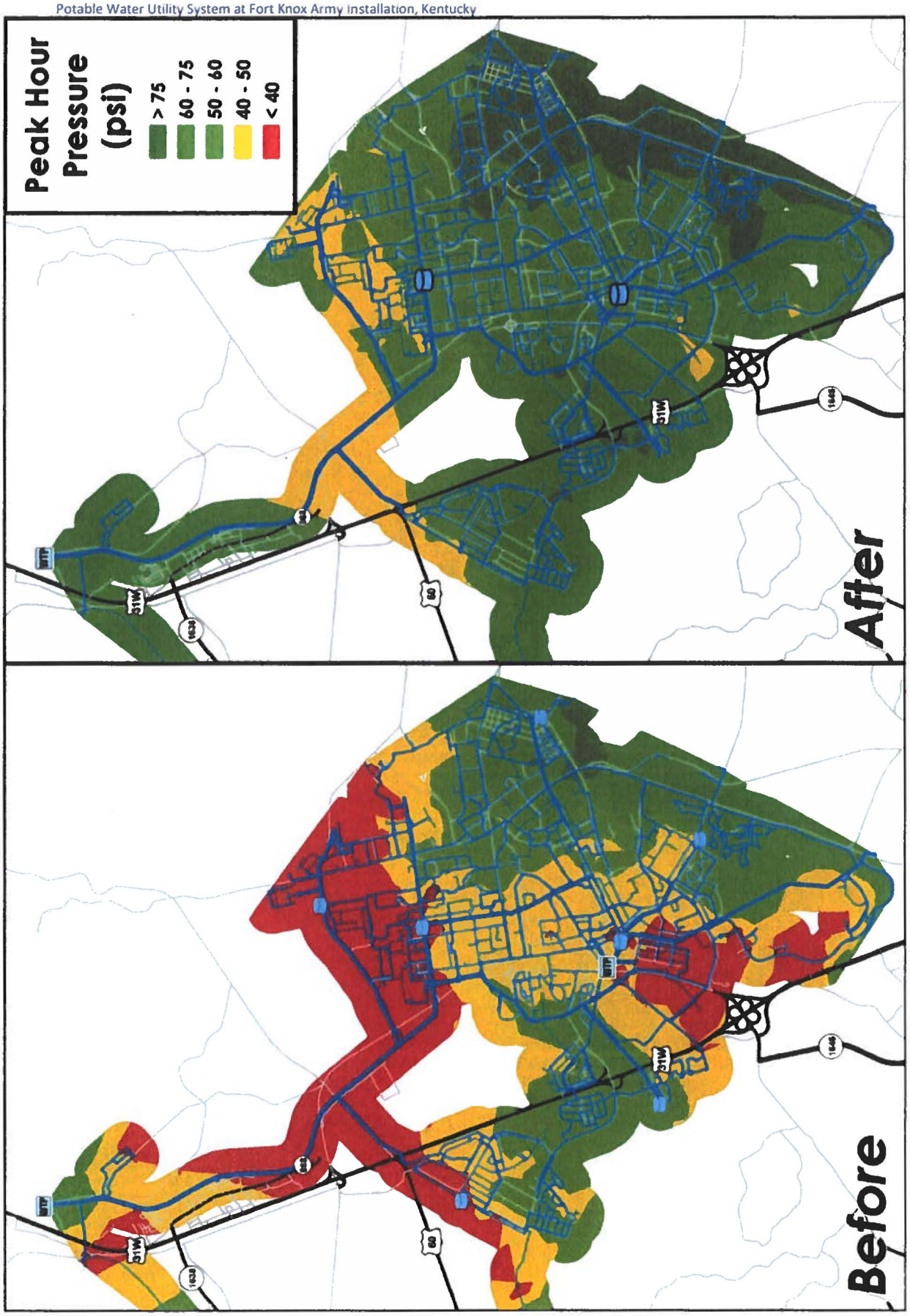

Figure 13. Pressure Improvements with Proposed CIP

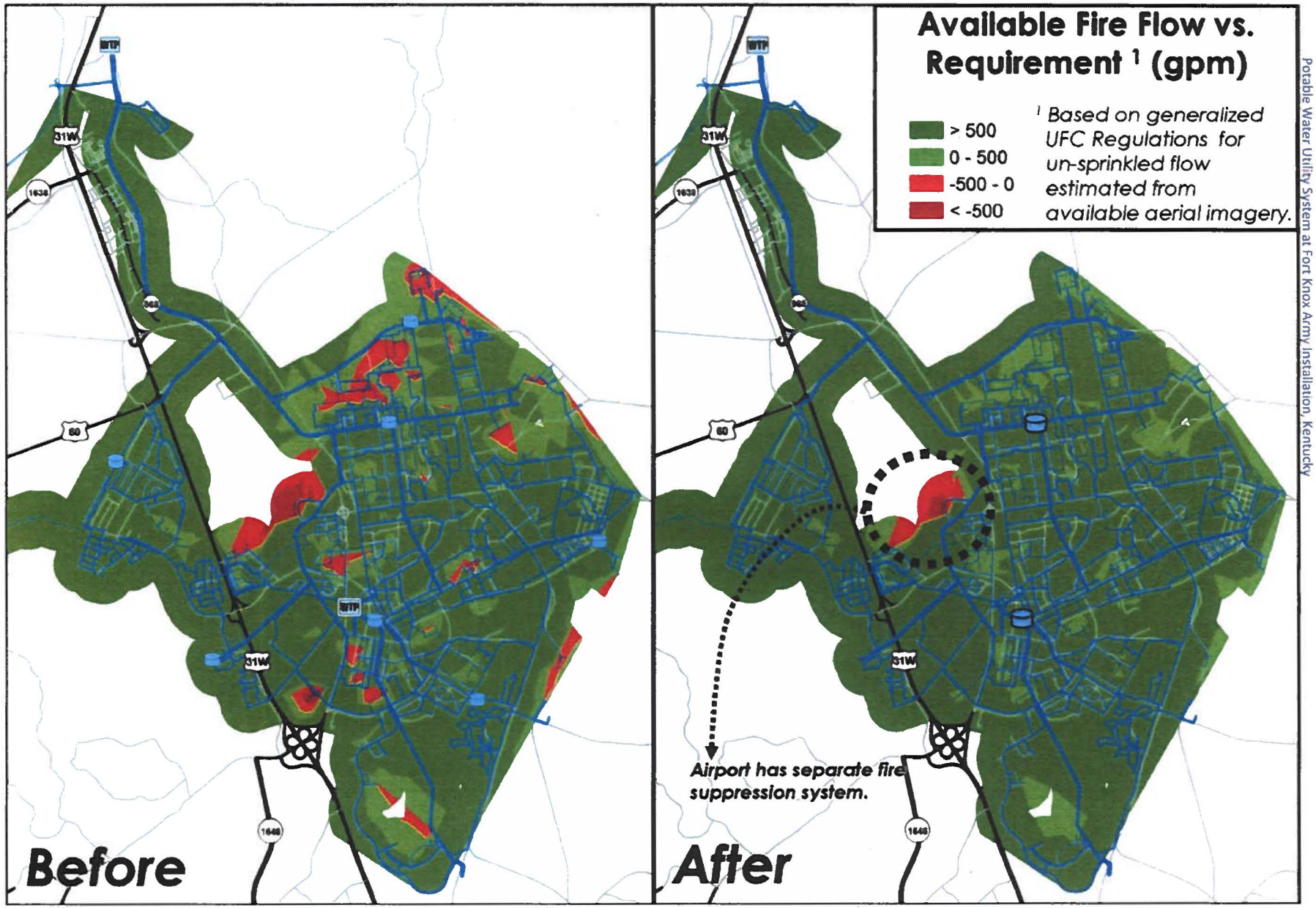

Figure 14. Fire Flow Improvements with Proposed CIP

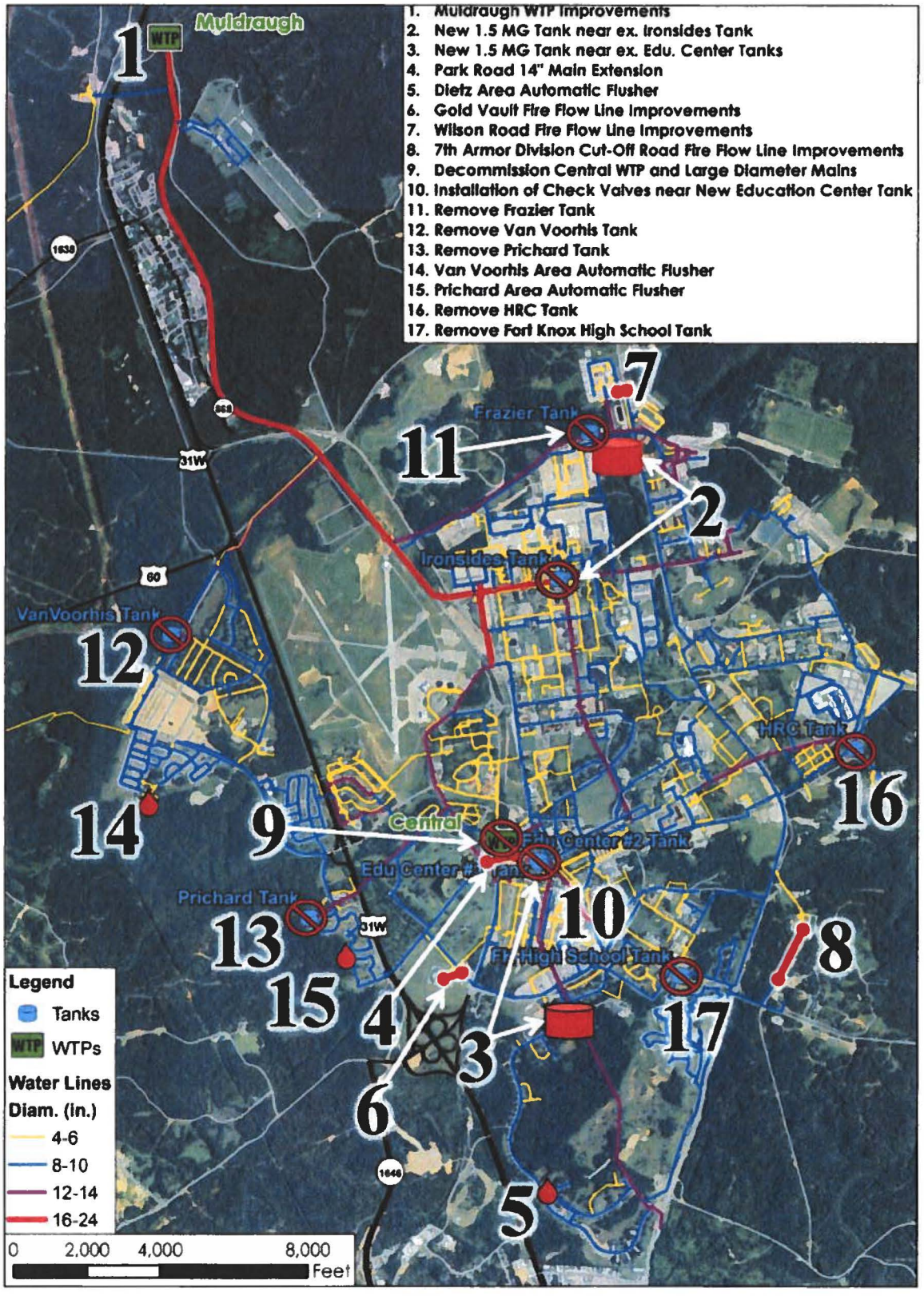

Figure 15. Proposed CIP Overview Plan

Hardin County Water District No. 1

Serving Radcliff and Hardin County for Over 60 Years

1400 Rogersville Road
Radcliff, KY. 40160

June 3, 2016

Mr. Carl Silverstone
Contracting Officer
Defense Logistics Agency Energy
8725 John J. Kingman Road
Fort Belvoir, VA 22060-6222

SUBJECT: Firm Fixed Price Proposal Submittal - UP Contract No.: SP0600-11-C-8270
Fourth Revision - June, 2016
Potable Water Utility System at Fort Knox Army Installation, Kentucky

Mr. Silverstone;

As we discussed on our phone call on 26-May, we have revised our price proposal. Attached is the new revision. As you requested on our 18-May monthly status call, we did an analysis of our current Ft. Knox Water reserves and calculated the current, and future funds available from the current ISDC surcharge.

Based on this calculation, we believe that our proposed ISDC Capital Improvement Plan project list can be funded within the current surcharge and our available reserves. Part of this is also possible due to the savings on our completed ISDC projects. The actual bid and installed cost of several of these projects was less than our original ISDC project estimates.

We have modified the price proposal to reflect the funding or financing change. This Proposal remains a valid offer until August 1, 2016. As you proceed with your final assessment and review of our revised Price Proposal, I invite you to contact me should you have any questions or need any additional information.

Thank You

Jim Bruce, General Manager

Encl.

Phone 1-270-351-3222 FAX: 1-270-352-3055

www.HCWD.com

Firm Fixed Price Proposal Submittal

UP Contract No.: SP0600-11-C-8270

Revised ISDC Projects and Revised Capital Improvement Program Potable Water Utility System at Fort Knox Army Installation, Kentucky

Revised submittal to reflect initial negotiations presented in the Initial Negotiation Message dated February 3, 2016.

All revisions to the document are highlighted in red text.

Second Revision per the negotiation letter received on 16 February 2016.

Changes in this second revision are highlighted in blue text.

Third Revision per negotiation e-mail received on 24 March 2016.

Changes are highlighted in green text.

Fourth Revision per funding availability discussion in May 2016.

Changes are highlighted in orange text.

Prepared for:

Defense Logistics Agency Energy

~~17 February 2016~~ ~~25 March 2017~~
~~10 February 2016~~ 1 June 2016
~~4 September 2015~~

Hardin County 1 Water District
"Serving Hardin County Since 1952"

Stantec

Stantec Consulting Services Inc.
Design with community in mind
www.stantec.com

Preamble:

Hardin County Water District No. 1 (HCWD1) submits this proposal to the Defense Logistics Agency Energy (DLA) in response to DLA's request for proposal (RFP) issued by electronic mail on 14-August-2015. The original RFP required a submittal deadline of 28-August-2015. An extension date was approved by DLA by electronic mail on 24-August-2015, with new deadline of 4-September-2015. Further clarification to the proposal requirements was provided to HCWD1 by DLA on 21-August-2015.

HCWD1 proposes to partially modify the list of current approved and funded Initial System Deficiency Corrections (ISDC) in accordance with section C.11.2.5 of its Utility Privatization (UP) contract with the Government. Since HCWD1 obtained the Ft. Knox Water System (FKWS) in 2012, it has completed extensive study of the system, and has obtained a significant amount of knowledge about the current deficiencies of the FKWS since beginning operations.

HCWD1's operating partner, the Louisville Water Company (LWC) have also found significant differences between the two water treatment plants (WTP) and raw water sources on Ft. Knox. Along with the completion of the recent Water Quality Modeling & CIP Development project by Stantec Consulting Services, HCWD1 believes its proposed projects will significantly improve water quality, water pressure, fire flows and WTP capacity and WTP reliability and resiliency, if the proposed CIP (Capital Improvement Plan) changes are approved by DLA.

As requested in the RFP, HCWD1 has also calculated a reduction to its current Utility Service Charge. This revision is provided for in section G.4 of the UP contract, as well as under FAR 52.241-7. HCWD1 also believes that by implementing its proposal, several of the currently planned ISDC projects will no longer be needed and those funds can be re-directed to the proposed ISDC projects.

By implementing this proposal, HCWD1 believes this will provide more value and wiser spending of DoD budget dollars. The proposed projects would also provide a noticeable and measurable improvement to the FKWS which will benefit the soldiers, military families, Government employees and contractors which work and live on post daily.

Firm Fixed Price Proposal Submittal – UP Contract No.: SP0600-11-C-8270

Revised ISDC Projects and Revised Capital Improvement Program
Potable Water Utility System at Fort Knox Army Installation, Kentucky

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1. Price Proposal

1.1. Introduction

Hardin County Water District No. 1 (HCWD1), under a partnership agreement with Louisville Water Company (LWC), was granted a 50-year privatization contract to operate the Fort Knox Water System (FKWS) under Contract SP0600-11-C-8270. This agreement establishes the methodology for recouping costs associated with both required capital improvements and ongoing maintenance and replacement costs.

The original price proposal submitted by HCWD1 was based upon a pre-determined list of capital projects known as the Initial System Deficiency Correction (ISDC) projects. Pricing models were developed based upon these projects, with an associated fixed 60-month equal payment schedule to cover the capital expenditures. These funds would then be used by HCWD1 to pay for the improvements as they were constructed over the initial 5-year period of the agreement.

HCWD1 retained Stantec Consulting Services Inc. (Stantec) in 2014 to review and update the FKWS hydraulic distribution system model with a focus on system water quality. The results of that modeling process have led to a revision of the proposed ISDC projects to further enhance system water quality, pressure, and fire flow capabilities. A complete listing and discussion of these proposed project revisions can be found in the accompanying Technical Proposal.

The revised set of proposed projects will require a modification of the pricing models and reallocation of funds for both the capital costs and monthly service charge components of the agreement. This Pricing Proposal sets forth the proposed changes and describes the methodologies used to determine the associated costs.

1.2. Methodologies

The Price Proposal submitted as part of the original solicitation described in detail the various methodologies used to determine costs and to distribute those costs across the 50-year agreement horizon. The general approach uses experience gained from multiple sources in managing similar capital construction projects in this geographic area.

Most of those same methodologies are still being followed in this Price Proposal, with a few notable clarifications:

1. The construction cost estimates for the two proposed 1.5 million gallon (MG) elevated water storage tanks were developed through conversations with multiple tank contractors who perform this type of work in Kentucky.
2. Capital construction projects were estimated assuming that they would be competitively bid on an individual basis.
3. Potential reduction in cost for the two proposed 1.5 MG elevated water storage tanks, if packaged together into a single bid offering, was not considered. HCWD1 will solicit bid proposals from qualified tank contractors that will include multiple pricing options.
4. Recent bid prices in the Kentucky area on projects managed by Stantec were included in the cost evaluation for comparison purposes.
5. Construction cost estimates are based upon the year that project bidding is anticipated to occur.

1.3. Pricing Approach

HCWD1 proposes that various projects from the original ISDC list be replaced with those projects identified in the accompanying Technical Proposal, as summarized in **Table 1**. Funding for the replaced projects in the amount of $12,208,104 would be reallocated for use on the projects identified in the Technical Proposal. The additional unfunded capital cost for the proposed projects, in the amount of ~~$4,367,896, would be added to the agreement and repaid over a mutually agreeable period.~~ $4,247,896 is available for the completion of the CIPs in their entirety utilizing HCWD1's Fort Knox Water Fund reserves. These funds are available through savings on prior ISDCs and other Fort Knox Water projects previously completed. This available budget includes the remaining ISDC payments to HCWD1 through January 2017.

Table 1. List of Current and Proposed Re-Use of ISDC Projects

ISDC Number	ISDC Budget $	Project Description	Initial Purpose	Reason for Proposed Re-Use of Funding
6	$1,912,680	Add 16" Raw Main from MWTP to CWTP	Since was assumed MWTP could be closing as a treatment point, would need to be able to transport well field raw water from the current MWTP site (high service pumps) to the CWTP	HCWD1 proposes to keep MWTP in service and close CWTP. This provides several benefits to Ft. Knox. By keeping MWTP as the primary treatment source / location, there is no reason to transport well field water from MWTP to CWTP, since CWTP would no longer be a treatment location
8	$106,920	Muldraugh High Svc Pump Station Improvements	Was intended to replace doors, windows and roof on the HSLP building at MWTP	HCWD1 proposal to upgrade and improve MWTP could include these improvements. The planned funding was not for essential components and could be better used for other more critical upgrades at the WTP
11-3	$557,336	Fire Hydrants Year 3 - 2015	Govt required ISDC to replace approx 600 hydrants (of 1,100 total hydrants)	HCWD1 has replaced all the non-functioning hydrants on post. Industry standards would use existing hydrants as long as parts are available, are still functional and provide useable fire protection. HCWD1 will still be responsible to maintain, repair or replace all hydrants as needed throughout UP contract period
11-4	$654,329	Fire Hydrants Year 4 - 2016		
11-5	$477,377	Fire Hydrants Year 5 - 2017		
15	$1,743,268	Repl 16" Raw Main from Otter Creek PS to CWTP	Replace the 16" CI main with DIP that brings raw water from McCracken Spring / Otter Creek Pump Station to the CWTP	HCWD1 believes the well field source is more than adequate for future source needs for Ft. Knox. The McCracken Spring source has a very low safe yield during a severe drought, and in some years, has had zero yield. If the CWTP is closed, there is also no need for this main in the future as it only transports the spring source to the CWTP. Also, the existing main has no history of breakage or failures and the internal pressures are very low so the existing pipe is still reliable and dependable
20	$1,094,155	Replace 23,642-LF of ACP - North Dietz	Replace existing AC / Transite mains in North Dietz housing area with DIP	AC pipe continues to be reliable, failure free. Standard industry practice would be to extend life of AC pipe, as is durable and reliable. Special precautions will be taken when repairing or disposing of sections of AC pipe. HCWD1 will still be responsible to maintain, repair or replace this pipe throughout UP contract period
21-2	$1,490,921	Replace 36,500-LF - Van Voorhis	Replace all DIP water mains within Van Voorhis housing neighborhood	There have been almost no breaks or failures in this area. Also, about 42% of the old pipe has already been replaced as part of a new housing project since 2012. Industry standards would use existing DIP pipe as long as it is not having frequent breaks or service interruptions. HCWD1 will still be responsible to maintain, repair or replace all mains as needed throughout UP contract period
23-1	$1,490,921	Replace 36,500-LF - Van Voorhis	Replace all CI water mains within Van Voorhis housing neighborhood	
23-5	$1,828,256	Replace 136,000 LF CI Pipe	Replace existing CI pipe with DIP throughout post	HCWD1 believes this portion of ISDC 23 would be better spent on the new CIP plan and proposed projects. The funding available with 23-3 and 23-4 ($4,736,512) should be enough to fund future pipe replacements where needed throughout post

Table 1. List of Current and Proposed Re-Use of ISDC Projects

ISDC Number	ISDC Budget $	Project Description	Initial Purpose	Reason for Proposed Re-Use of Funding
18	$196,535	Water Storage Tank No. 7 (High School)	Partially repaint this storage tank	The proposed CIP creates a higher pressure zone, requiring new tanks. Also, the current demand on post does not require as much stored water, and the current excess stored water is degrading water quality. The proposed new tanks at higher elevation will still meet or exceed all DoD fire protection regulations. The money to continue to paint and service numerous older tanks would be better spent on newer, fewer tanks which will improve water pressure, water quality and save the Government money over time
24	$23,978	Water Storage Tank No. 1 (Education, small)	Inspect, clean & minor repairs as needed to this tank	
25	$23,978	Water Storage Tank No. 2 (Education, large)		
26	$44,850	Water Storage Tank No. 4 (Brave Rifles)		
9	$487,600	Decommission MWTP	The cost to demolish / scrap MWTP after being decommissioned	This funding could be re-directed to decommission the CWTP facility after closure, or, if the Government wanted to keep the CWTP (for historic reasons) some of this funding could be used to "mothball" the existing CWTP and the balance to upgrade and improve the MWTP
35	$75,000	Chemical Feed Improvements (MWTP)	Add redundancy and remove single point vulnerabilities from MWTP chemical feed systems	HCWD1 proposal plan to upgrade and improve MWTP would include these improvements.
$12,208,104		<<< TOTAL		

~~HCWD1 is willing to be flexible on the schedule for repayment of the costs associated with the proposed capital projects. The existing agreement calls for repayment of the original ISDC project costs over a 5 year period from the initial date of execution. One possible approach would be to continue with that repayment schedule for the amount associated with the original ISDC projects, with an additional adjusted amount reflecting the unfunded project costs noted above to be repaid either within the current 5-year window or over a separate 3 to 5-year period. Various repayment alternatives are summarized in **Table 4** in Section 2.2 of this Proposal.~~

Due to the fact that several elevated storage tanks will no longer be part of the water system, associated future maintenance costs such as repainting will be eliminated from the original monthly charge calculations. Alternately, several projects identified as part of the original ISDC, but eliminated as described in the Technical Proposal, will now have a Renewals and Replacements (R&R) component that must be factored into the monthly service charge. The spreadsheets used to develop the proposed monthly charge have been updated to reflect these changes. Similarly, the monthly charge calculations have also been revised to reflect the fact that the Muldraugh WTP will now be used in lieu of the Central WTP going forward.

1.4. Assumptions and Qualifiers

Since the realignment of capital projects will result in certain reuse or demolition of existing facilities, a number of assumptions and qualifiers have been made, and are included in this Price Proposal:

1. Decommissioning of the existing Central WTP and elevated storage tanks will be coordinated with Fort Knox leadership. Line items for these decommissioning projects have been

included in the Price Proposal based upon customary costs for similar projects, but may need to be adjusted based upon final disposition of the assets as directed by post leadership.

2. This Price Proposal includes the following costs for decommissioning the Central WTP:
   a. Exterior tankage, including dewatering and backfill;
   b. Generator and building;
   c. Exterior electrical facilities;
   d. Minor appurtenances; and
   e. Ancillary buildings (not including main plant building).
3. The main plant building at the Central WTP will not be decommissioned, other than to remove specific water treatment equipment such as pumps, chemical feed equipment, SCADA, and instrumentation. Fort Knox will retain ownership and responsibility for the building and its internal structures and systems.
4. Demolition of the existing elevated storage tanks includes the following:
   a. Dewatering;
   b. Removal of all appurtenances such as cell phone equipment, ladders, hatches, and lighting;
   c. Abandonment of valve vaults and overflow structures; and
   d. Complete removal and disposal of the tank from the site.
5. If Fort Knox wishes to retain one or more tanks in place for historical purposes, they will assume all ownership and responsibility for future maintenance. Similarly, HCWD1 will not be responsible for any historical evaluation or mitigation associated with the decommissioning of either the Central WTP or the elevated storage tanks.
6. Projects that were originally identified in the ISDC list, but were subsequently removed as part of the reallocation of funds, may still be done at some future date, if necessary, for the proper functioning of the water system.
7. It is assumed that Fort Knox officials will be provided a 30-day review and comment period for the proposed projects following final design and prior to bidding. Any requested changes by Fort Knox after this period that affect the construction cost may necessitate additional funding from Fort Knox.

2. Capital Improvements Plan

HCWD1 retained Stantec in 2014 to review and update the FKWS hydraulic distribution system model with a focus on system water quality. The results of that modeling process have led to a revision of the proposed ISDC projects to further enhance system water quality, pressure, and fire flow capabilities. The capital improvement projects identified by the study are listed in **Table 2**, with additional detail shown in **Table 3** and **Figures 1 through ~~17~~ 18** at the end of Section 2.

Table 2. Summary of Recommended Capital Improvements

No.	Project Name	Total Project Cost	
1	Muldraugh WTP Improvements	$4,845,000	
2	1.5 MG Old Ironsides Tank	~~$5,130,000~~	$5,054,000
3	1.5 MG Education Center Tank	~~$5,180,000~~	$5,060,000
4	Park Road 14" Main Extension	$290,000	

Table 2. Summary of Recommended Capital Improvements

No.	Project Name	Total Project Cost
5	Automatic Flusher Installed in Dietz Area	$13,000
6	Line Improvements – Gold Vault Area	$163,000
7	Line Improvements – North Frazier Area	$30,000
8	Line Improvements – 7th Armor Division Cut-off Road	$143,000
9	Decommission Central WTP and Large Diameter Mains	$322,000
10	Installation of Check Valves Near Education Center Tank	$70,000
11	Remove Frazier Tank	$76,000
12	Remove Van Voorhis Tank	$60,000
13	Remove Prichard Tank	$76,000
14	Automatic Flusher Installed in Van Voorhis Area	$13,000
15	Automatic Flusher Installed in Prichard Area	$13,000
16	Remove HRC Tank	$76,000
17	Remove Fort Knox High School Tank	$76,000
	Total CIP Cost	~~$16,576,000~~ $16,456,000
18	Remove Old Ironsides Tank	$76,000

2.1. Cost Estimating

All projects in the capital improvements plan include engineering, design, permitting, construction and inspection. The estimates for construction costs for the projects were based on similar projects in the Fort Knox, Kentucky region (including Louisville Water Company projects in Louisville, Kentucky and HCWD1 projects in Radcliff, Kentucky).

Engineering basic design and inspection services were estimated using cost curves from the US Rural Development Utility Program. General and Administrative (G&A) costs were set at 4.4% of construction cost to match previous submittals. Prevailing wages will be in effect when applicable.

The construction cost estimates assume that projects will be competitively bid, with reasonable times to prepare the bids and to perform the actual construction, and that contractors, their sub-contractors, and their suppliers will have access to job sites with no undue delays or unreasonable restrictions.

Replacement materials will be equal to, or better than, existing materials and will follow HCWD1's design standards. For example, ductile iron pipe is used for lines that are replaced on post.

The number of existing hydrants and mainline valves will be appropriate for fire protection and line isolation, and pipe installations will predominantly occur in soil adjacent to roadways.

There are no allowances for easements, land acquisition, legal fees, cultural or environmental remediation, electricity, energy or other utilities.

2.2. Project Descriptions and Costs

Table 3 below provides additional information for each project, along with a breakdown of the cost components. For further detail on individual projects, please refer to the factsheets in **Figures 1 through 17**.

Table 3. Cost Details of Recommended Capital Improvements

No.	Project Name	G&A ($)	Engineering ($)	Inspection ($)	Construction ($)	Total Project Cost ($)
1	**Muldraugh WTP Improvements** New HS pumps, SCADA, conversion to chloramines, improved softening abilities, filter piping rehab, expanded capacity, and additional security measures.	$183,887	$287,114	$194,753	$4,179,246	$4,845,000
2	**1.5 MG Old Ironsides Tank** New 1.5 MG composite concrete elevated tank. Includes ~~demolition of existing 0.5 MG tank,~~ about 500 linear feet of 16" water mains, electrical work, telemetry, fittings, valves, site restoration, roadway patching, etc.	$194,024 ~~$196,569~~	$297,031 ~~$305,128~~	$153,310 ~~$160,829~~	$4,409,635 ~~$4,467,474~~	$5,054,000 ~~$5,130,000~~
3	**1.5 MG Education Center Tank** New 1.5 MG composite concrete elevated tank. Includes ~~demolition of existing 0.25 MG tank and existing 0.5 MG tank,~~ about 800 linear feet of 16" water mains, electrical work, telemetry, fittings, valves, site restoration, roadway patching, etc.	~~$198,485~~ $195,340	~~$308,102~~ $300,875	~~$162,397~~ $158,587	~~$4,511,016~~ $4,405,198	~~$5,180,000~~ $5,060,000
4	**Park Road 14" Main Extension** 1,200 LF of 14" water main, 80 LF of steel encasement pipe bored under railroad, fittings, valves, and connections to existing 14" and 16" water mains.	$10,103	$27,140	$23,145	$229,612	$290,000

Table 3. Cost Details of Recommended Capital Improvements

No.	Project Name	G&A ($)	Engineering ($)	Inspection ($)	Construction ($)	Total Project Cost ($)
5	**Automatic Flusher Installed in Dietz Area**	$548	$0	$0	$12,452	$13,000
6	**Line Improvements – Gold Vault Area** 600 LF of 8" water main, connections to existing 10" and 6" water mains.	$5,505	$16,941	$15,439	$125,115	$163,000
7	**Line Improvements – North Frazier Area** 200 LF of 6" water main, connections to existing 8" and 6" water mains.	$1,005	$3,196	$2,968	$22,831	$30,000
8	**Line Improvements – 7th Armor Division Cut-off Road** 1,500 LF of 6" water main, connections to existing 8" and 6" water mains.	$4,806	$15,074	$13,884	$109,235	$143,000
9	**Decommission Central WTP and Large Diameter Mains** Remove exterior tankage, including dewatering and backfill, generator and building, exterior electrical facilities, minor appurtenances, and ancillary buildings (not including main plant building).	$11,407	$28,518	$22,815	$259,259	$322,000
10	**Installation of Check Valves Near Education Center Tank** 12", 8" and 6" check valves and fittings	$2,344	$7,458	$6,925	$53,273	$70,000
11	**Remove Frazier Tank** Demolition of existing 0.5 MG tank and site restoration	$2,545	$8,097	$7,519	$57,839	$76,000
12	**Remove Van Voorhis Tank** Demolition of existing 0.3 MG tank and site restoration	$2,009	$6,393	$5,936	$45,662	$60,000
13	**Remove Prichard Tank** Demolition of existing 0.5 MG tank and site restoration	$2,545	$8,097	$7,519	$57,839	$76,000
14	**Automatic Flusher Installed in Van Voorhis Area**	$548	$0	$0	$12,452	$13,000

18	**Remove Old Ironsides Tank** Demolition of existing 0.5 MG tank and site restoration.	$2,545	$8,097	$7,519	$57,839	$76,000

Table 3. Cost Details of Recommended Capital Improvements

No.	Project Name	G&A ($)	Engineering ($)	Inspection ($)	Construction ($)	Total Project Cost ($)
15	**Automatic Flusher Installed in Prichard Area**	$548	$0	$0	$12,452	$13,000
16	**Remove HRC Tank** Demolition of existing 0.5 MG tank and site restoration	$2,545	$8,097	$7,519	$57,839	$76,000
17	**Remove ~~HRC Tank~~ Ft Knox HS Tank** Demolition of existing 0.5 MG tank and site restoration	$2,545	$8,097	$7,519	$57,839	$76,000
	Total CIP Cost					~~$16,576,000~~

~~$4,247,896~~ $16,456,000

~~As discussed in Section 1.3, HCWD1 is flexible with respect to potential payment terms for the unfunded portion of the CIP, $4,367,896. The entire CIP is anticipated to be complete in about three to four years following acceptance and approval of the CIP. Three potential repayment options are presented in Table 4 below. Because of the short duration of the CIP and because most or all of the CIP projects are expected to be bid in year one of the CIP (year five or six of the Privatization contract), inflation rates and interest income or debt service was not factored into the monthly rates. Instead, the total unfunded capital cost was divided evenly amongst the proposed durations.~~

~~**Table 4. CIP Repayment Options**~~

Option No.	Option Description	Duration for Proposed Rates	New CIP Surcharge Monthly Rate	Updated ISDC Surcharge Rate
1	Include the unfunded portion of the CIP in the ISDC surcharge (CLIN 0002) for the final year of the ISDC term	12 months *(contract year 5)*	$0.00	~~$837,832~~ $827,832.33
2	Create a new surcharge monthly rate spread over three years following the expiration of the ISDC surcharge	36 months *(contract years 6 to 8)*	$117,997.11 ~~$121,330~~ ~~$119,997~~	$473,841.00
3	Create a new surcharge monthly rate spread over five years following the expiration of the ISDC surcharge	60 months *(contract years 6 to 10)*	~~$72,798~~ $70,798.27	$473,841.00

Project 1: Muldraugh WTP Improvements

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

Opinion of Probable Costs:		
Construction	$	4,179,246
Chemical Feed System	$	*764,797*
Rehabilitate Filter Piping & Valves	$	*740,126*
Softener Mixing & Influent Piping	$	*345,392*
Install Air Scour Surface Wash	$	*345,392*
Install Grid-Based BW Supply	$	*246,709*
Rehab/Upgrade Main Building	$	*518,088*
Paint Highlift Piping	$	*98,683*
SCADA Improvements	$	*34,539*
Replace High-Service Pumps	$	*345,392*
Chloramie Conversion	$	*350,326*
Concrete Rehabilitation	$	*98,683*
Fencing & Security Enhancements	$	*256,577*
Sitework/Paving	$	*34,539*
General & Administrative (G&A)	$	183,887
Engineering/Design	$	287,114
Construction Inspection	$	194,753
Total Capital Cost:	$	**4,845,000**

Location Map

** This page was replaced as part of the 25 March 2017 revision.*

Project 2: New 1.5 Million Gallon Tank (Old Ironsides)

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

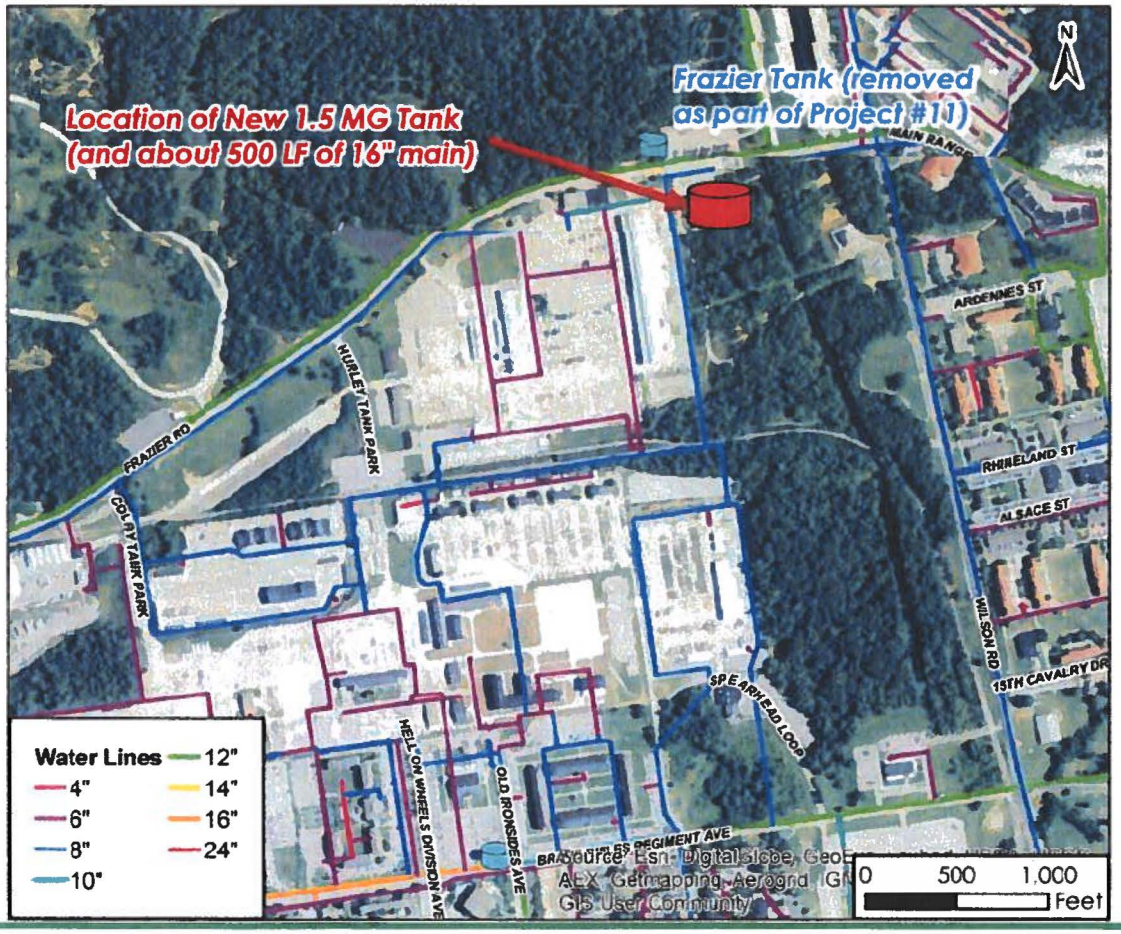
Opinion of Probable Costs:

Construction	$	4,409,635
Mobilization/Demolition	$	*102,302*
New Tank	$	*3,847,119*
Hydrant, Fittings, Valves, 16" line	$	*218,051*
Electrical/Telemetry	$	*192,356*
Other Site Work	$	*49,806*
General & Administrative (G&A)	$	194,024
Engineering/Design	$	297,031
Construction Inspection	$	153,310
Total Capital Cost:	**$**	**5,054,000**

Location Map

Project Description:

New 1.5 MG composite concrete elevated tank. Includes 16" connection to existing water main, electrical work, telemetry, fittings, valves, site restoration, roadway patching, etc.



** This page was replaced as part of the 10 February 2016 Revised submittal.*

Project 3: New 1.5 Million Gallon Tank (Education Center)

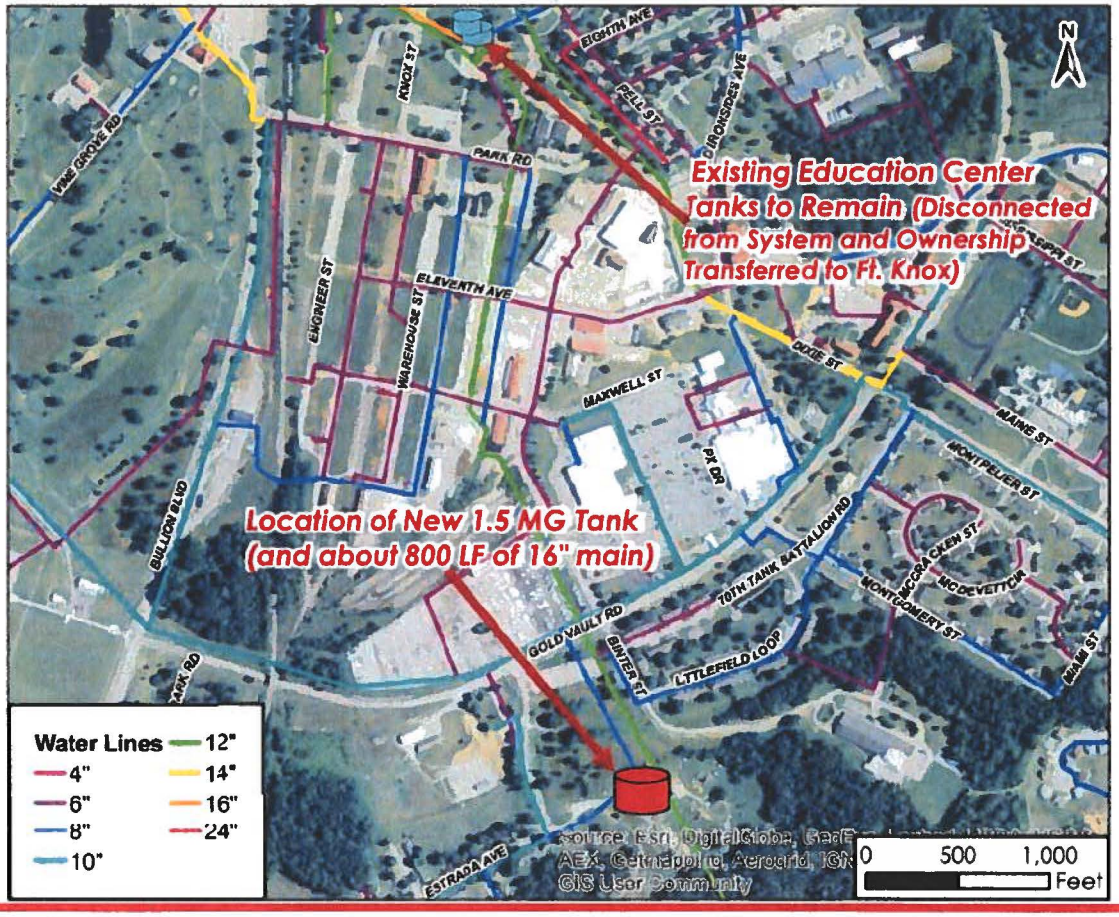
Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

Opinion of Probable Costs:	$	4,405,198
Construction	$	4,405,198
Mobilization/Demolition	$	*103,698.06*
New Tank	$	*3,784,806*
Hydrant, Fittings, Valves, 16" line	$	*278,454*
Electrical/Telemetry	$	*189,240*
Other Site Work	$	*49,000*
General & Administrative (G&A)	$	195,340
Engineering/Design	$	300,875
Construction Inspection	$	158,587
Total Capital Cost:	**$**	**5,060,000**

Location Map

Project Description:

New 1.5 MG composite concrete elevated tank. Includes about 800 linear feet of 16" water main, electrical work, telemetry, fittings, valves, site restoration, roadway patching, etc.



Project 4: Park Road 14" Main Extension

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

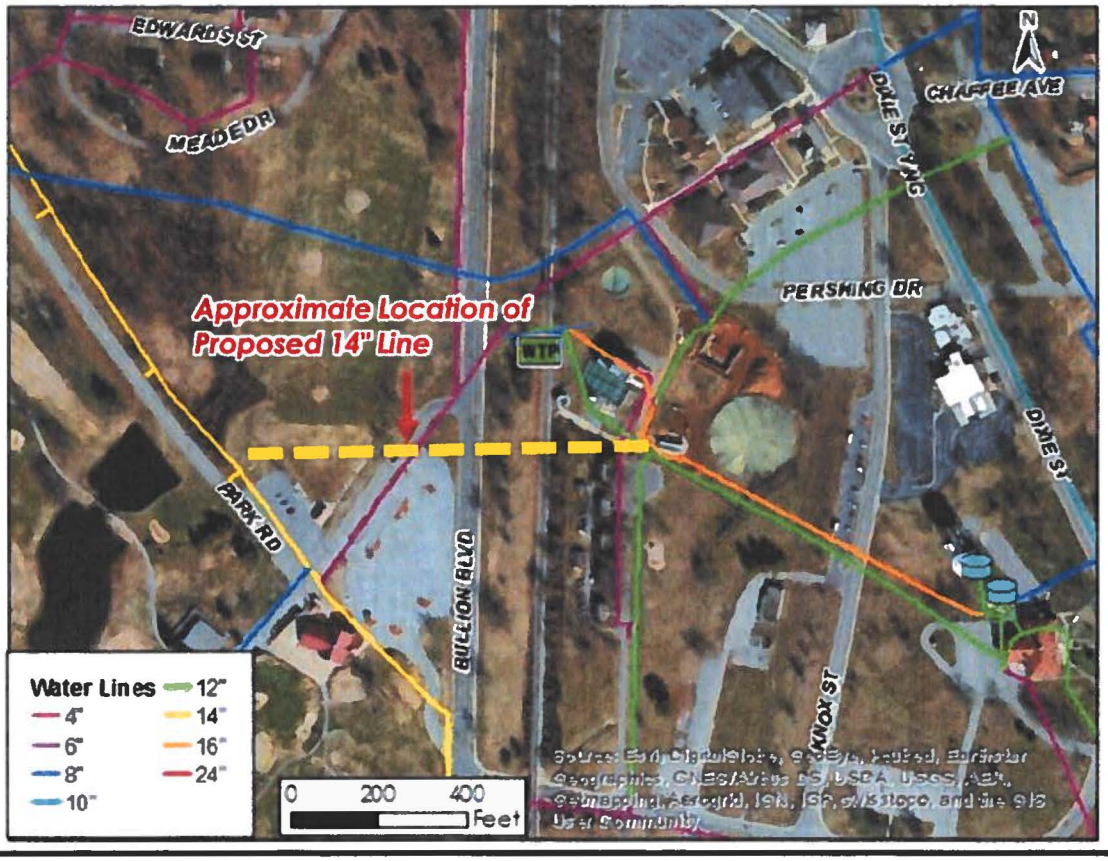
Opinion of Probable Costs:

Construction	$	229,612
Mobilization	$	*14,128*
14" Main + Connections	$	*146,086*
Fittings, Valves	$	*28,256*
Encasement Pipe	$	*27,013*
Other Site Work	$	*14,128*
General & Administrative (G&A)	$	10,103
Engineering/Design	$	27,140
Construction Inspection	$	23,145
Total Capital Cost:	**$**	**290,000**

Location Map

Project Description:

Project includes extending approximately 1,200 linear feet of an existing 14" main along Park Road and connecting to an existing 16" inch main which runs to the new tank at the Education Center.



Project 5: Automatic Flusher Installed in Dietz Area

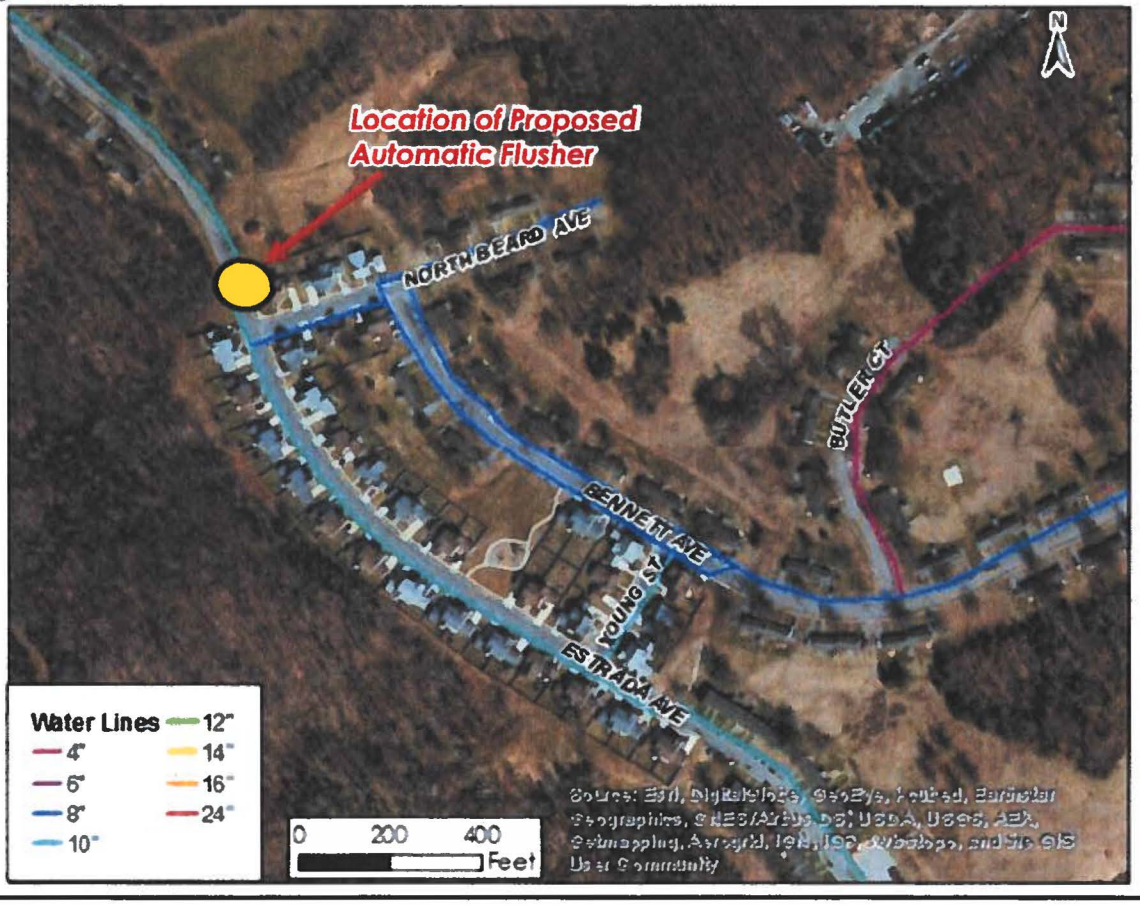
Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

Opinion of Probable Costs:

Construction	$	12,452
Mobilization	$	*5,534*
Installation of Automatic Flusher	$	*6,918*
General & Administrative (G&A)	$	548
Engineering/Design	$	-
Construction Inspection	$	-
Total Capital Cost:	**$**	**13,000**

Location Map

Project Description:
Project includes installing an automatic flusher on a hydrant located at the end of the Dietz Neighborhood.



Project 6: Line Improvements to Gold Vault

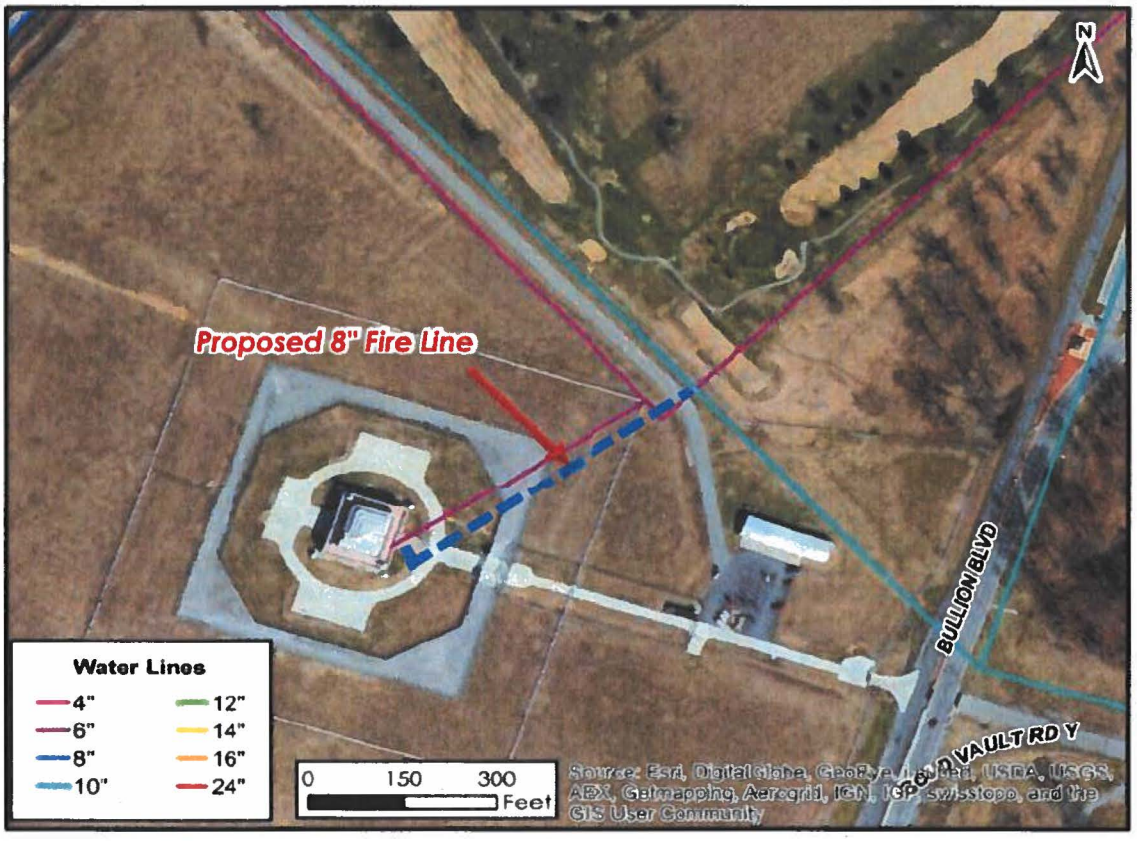
Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

Opinion of Probable Costs:

Construction	$	125,115
Mobilization	$	*13,719*
8" Main	$	*63,381*
Connections	$	*6,859*
Other Site Work	$	*41,156*
General & Administrative (G&A)	$	5,505
Engineering/Design	$	16,941
Construction Inspection	$	15,439
Total Capital Cost:	**$**	**163,000**

Location Map

Project Description:
Project includes running an additional 600 linear feet of 8" main to the Gold Vault Area parallel to the existing 6" main.

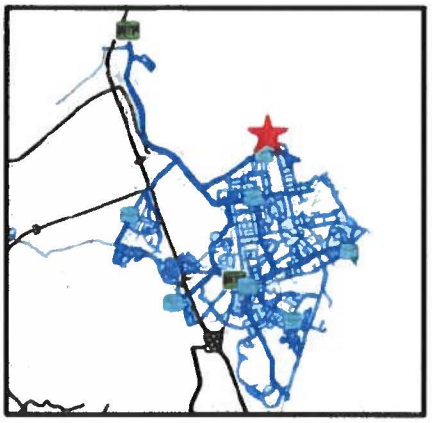


Project 7: Line Improvements to Area North of Frazier Tank

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

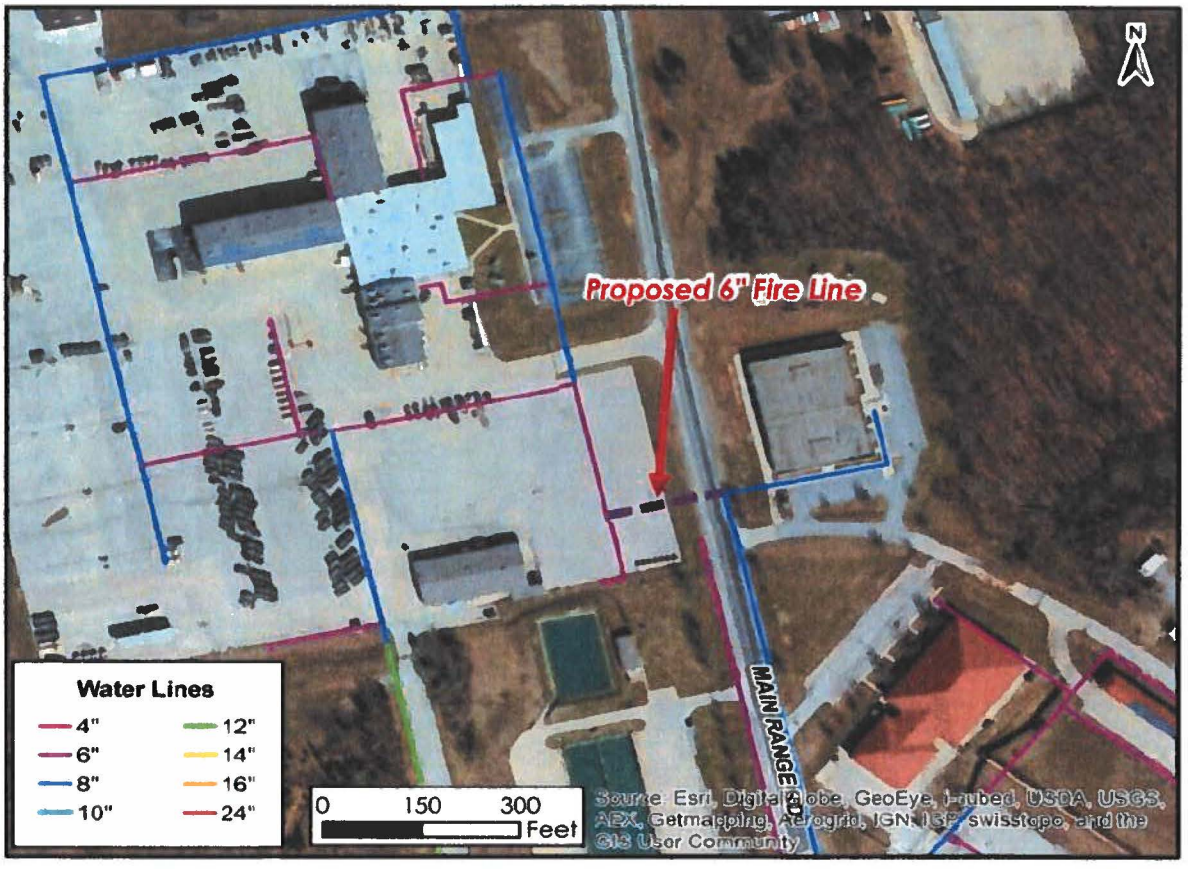
Opinion of Probable Costs:

Construction	$	22,831
Mobilization	$	*3,024*
6" Main	$	*9,979*
Connections	$	*4,536*
Other Site Work	$	*5,292*
General & Administrative (G&A)	$	1,005
Engineering/Design	$	3,196
Construction Inspection	$	2,968
Total Capital Cost:	**$**	**30,000**



Location Map

Project Description:
Project includes installing about 200 linear feet of 6" main to provide a loop in the area north of Frazier Tank.

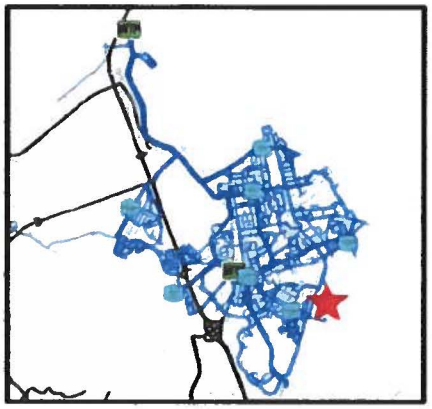


Project 8: Line Improvements Along 7th Armor Division Cutoff Road

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

Opinion of Probable Costs:

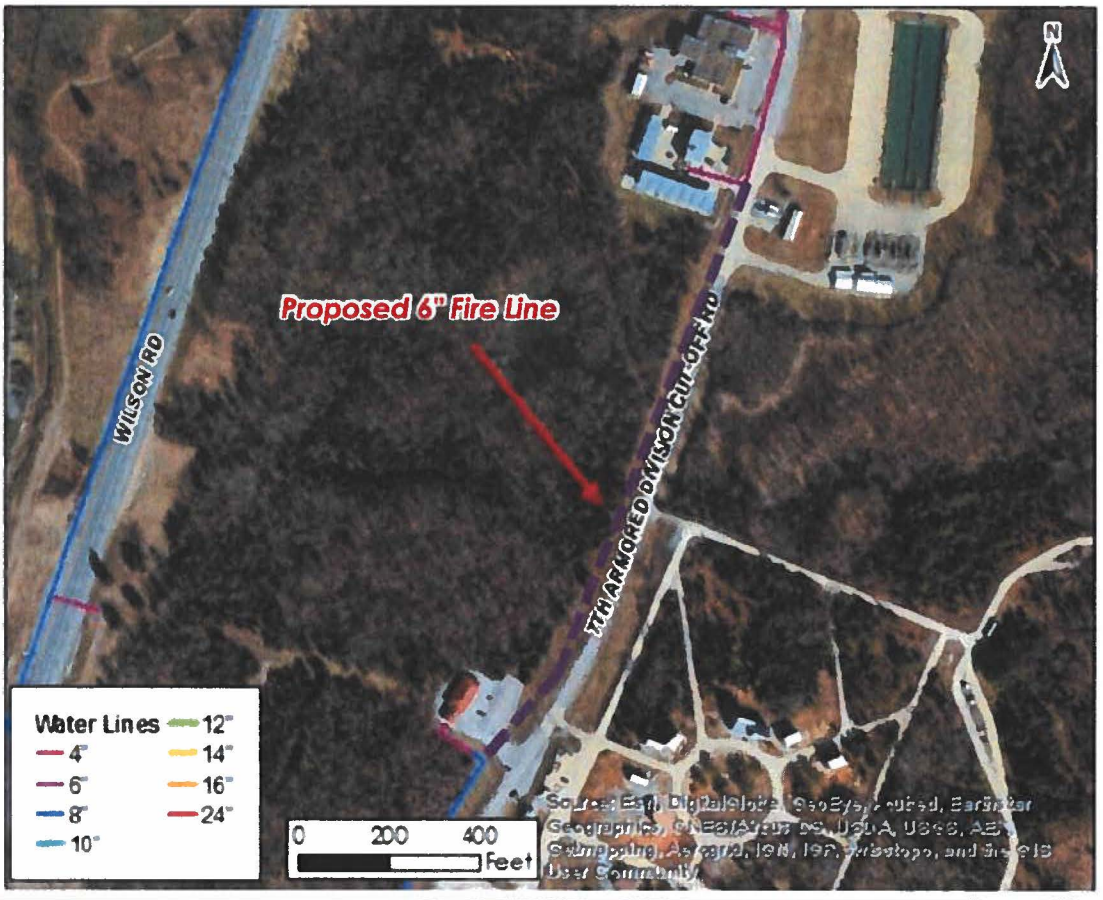
Construction	$	109,235
Mobilization	$	*13,740*
6" Main	$	*68,015*
Connections/Valves/Fittings	$	*13,740*
Other Site Work	$	*13,740*
General & Administrative (G&A)	$	4,806
Engineering/Design	$	15,074
Construction Inspection	$	13,884
Total Capital Cost:	**$**	**143,000**



Location Map

Project Description:

Project includes installing about 1,500 linear feet of 6" main to provide a loop along 7th Armor Division Road.



Project 9: Demolition and Removal of Central WTP and Extraneous Large Diameter Mains

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

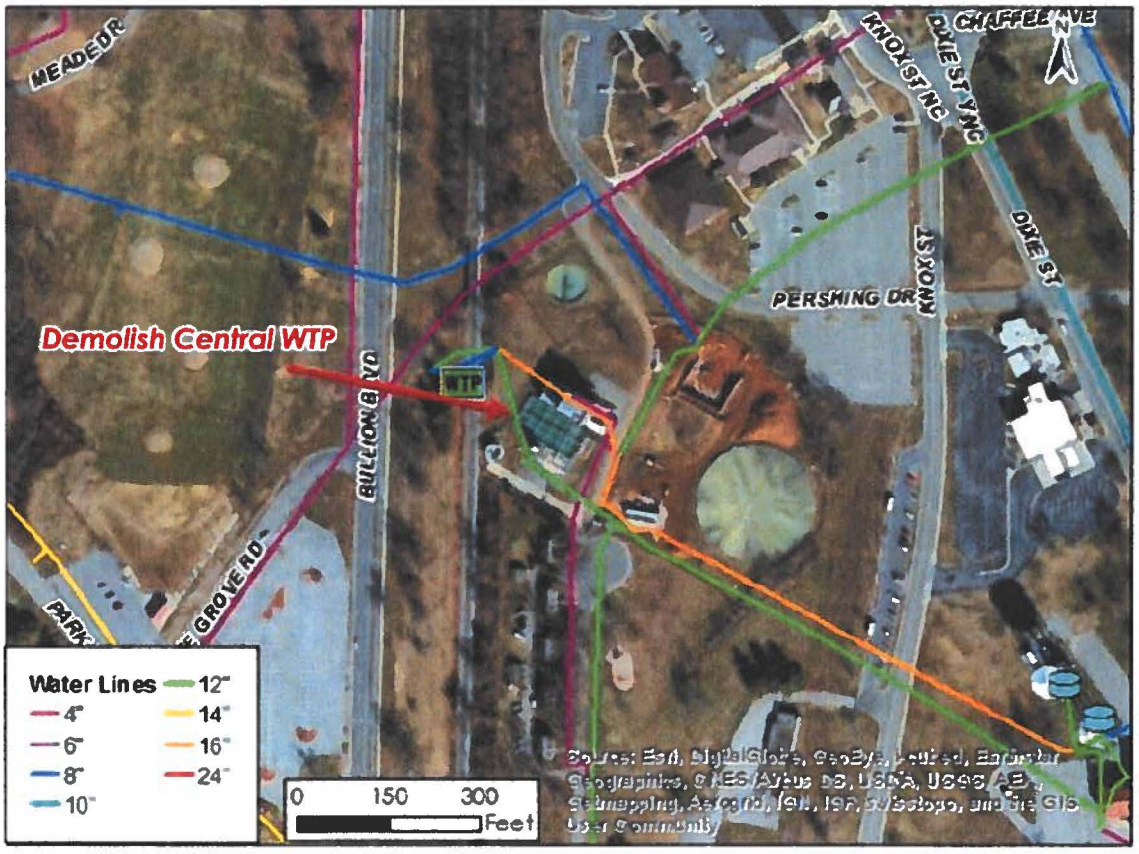
Opinion of Probable Costs:

Construction	$	259,259
Mobilization	$	*12,346*
Demolition (Leave Building)	$	*246,913*
General & Administrative (G&A)	$	11,407
Engineering/Design	$	28,518
Construction Inspection	$	22,815
Total Capital Cost:	**$**	**322,000**

Location Map

Project Description:

Remove exterior tankage, including dewatering and backfill, generator and building, exterior electrical facilities, minor appurtenances, and ancillary buildings (not including main plant building).



Project 10: Installation of Check Valves near New Education Center Tank

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

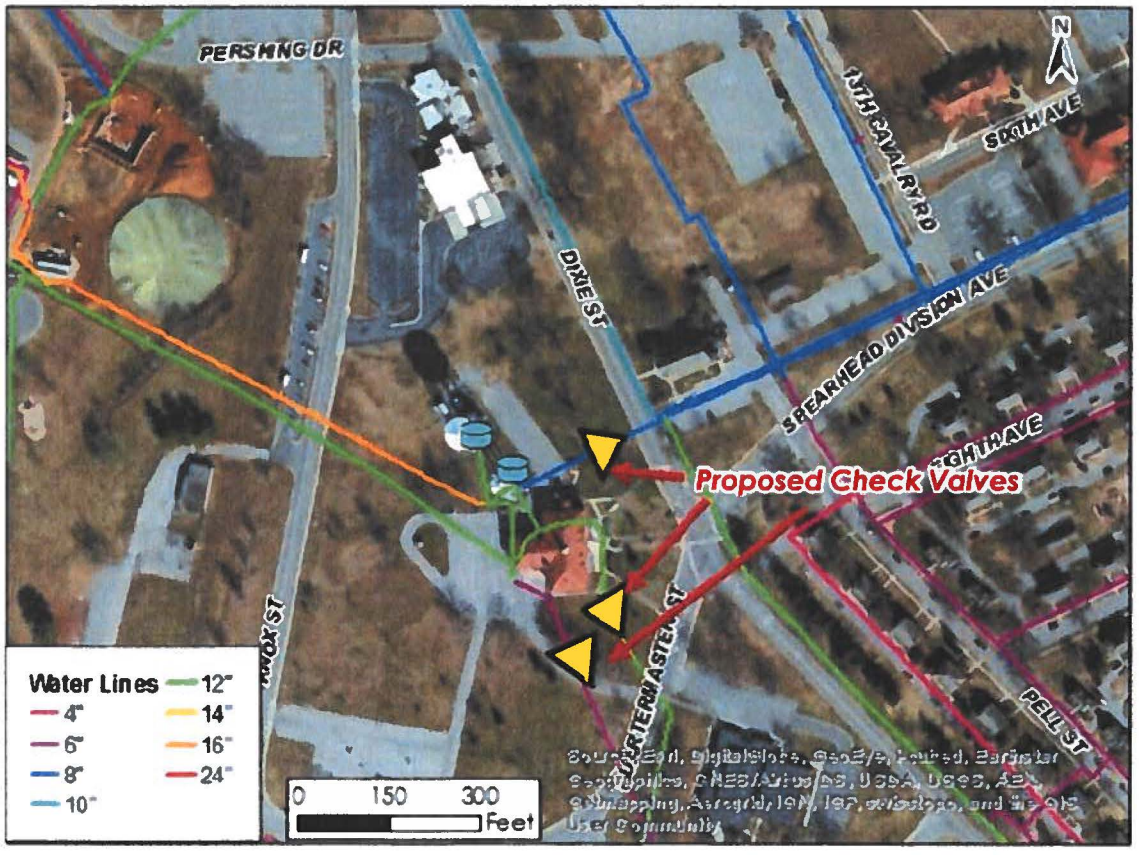
Opinion of Probable Costs:

Construction	$	53,273
Mobilization	$	*7,477*
Check Valves	$	*15,888*
Fittings	$	*14,954*
Sitework	$	*14,954*
General & Administrative (G&A)	$	2,344
Engineering/Design	$	7,458
Construction Inspection	$	6,925
Total Capital Cost:	**$**	**70,000**

Location Map

Project Description:

Project includes installation of 3 check valves on existing 12", 8" and 6" mains leaving the proposed new tank at the Education Center (locations may vary depending upon final tank location).



Project 11: Demolition of Frazier Tank

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

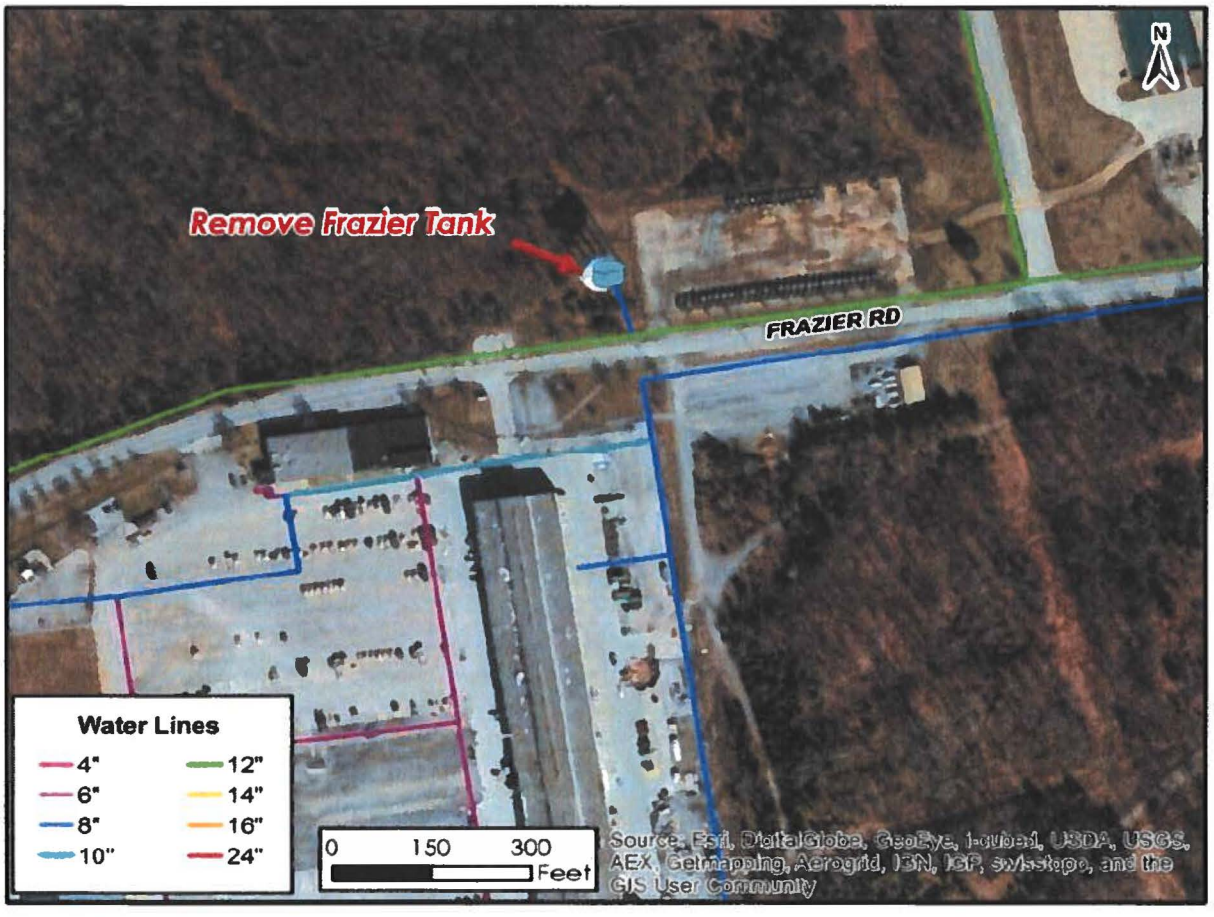
Opinion of Probable Costs:

Construction	$	57,839
Mobilization/Demobilization	$	*13,347*
Demolition & Sitework	$	*44,492*
General & Administrative (G&A)	$	2,545
Engineering/Design	$	8,097
Construction Inspection	$	7,519
Total Capital Cost:	**$**	**76,000**

Location Map

Project Description:

Remove 0.3 MG steel tank.



Project 12: Demolition of Van Voorhis Tank

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

Opinion of Probable Costs:

Construction	$	45,662
Mobilization/Demobilization	$	*13,506*
Demolition & Sitework	$	*32,156*
General & Administrative (G&A)	$	2,009
Engineering/Design	$	6,393
Construction Inspection	$	5,936
Total Capital Cost:	**$**	**60,000**

Location Map

Project Description:

Remove 0.3 MG steel tank.

Project 13: Demolition of Prichard Tank

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

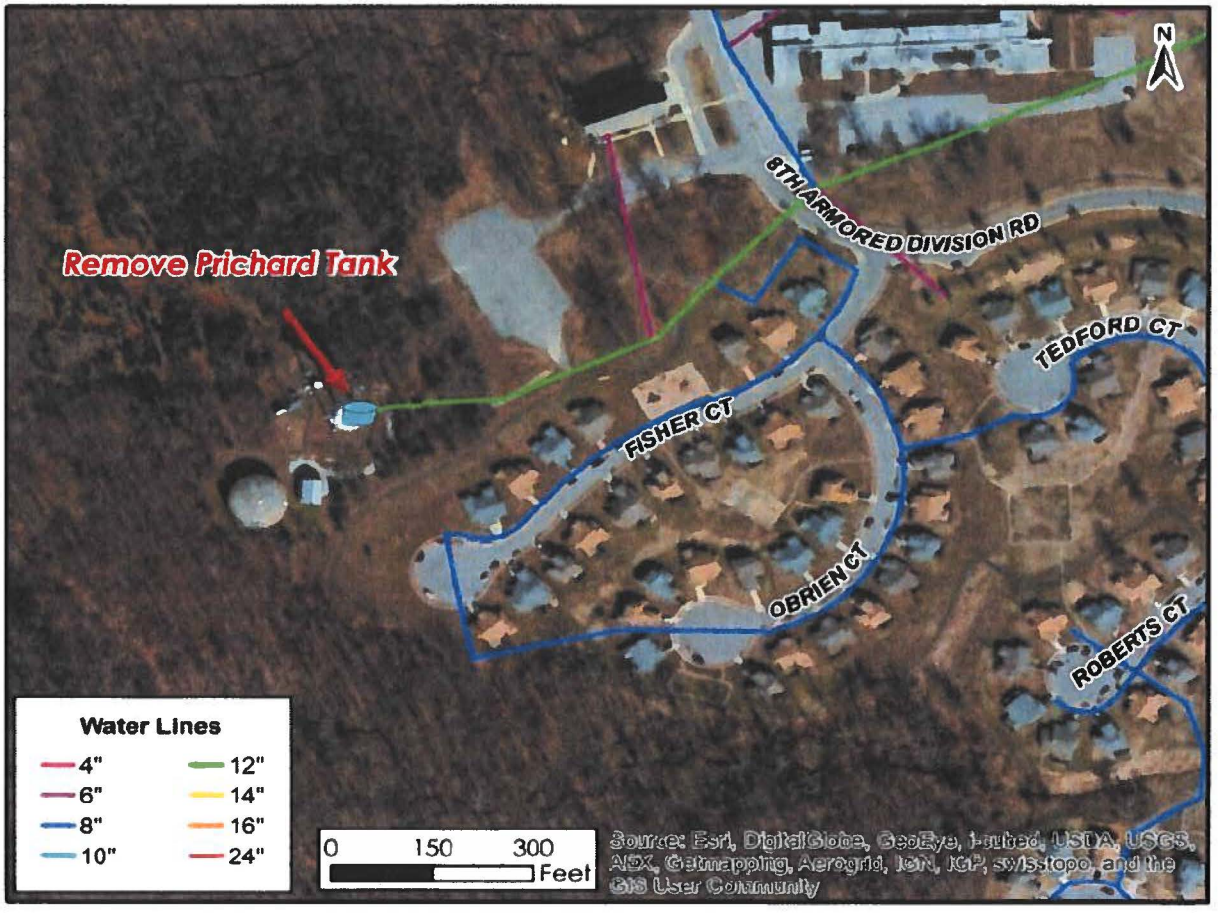
Opinion of Probable Costs:

Construction	$	57,839
Mobilization/Demobilization	$	*13,347*
Demolition & Sitework	$	*44,492*
General & Administrative (G&A)	$	2,545
Engineering/Design	$	8,097
Construction Inspection	$	7,519
Total Capital Cost:	**$**	**76,000**

Location Map

Project Description:

Remove 0.5 MG steel tank.



Project 14: Automatic Flusher Installed in Van Voorhis Area

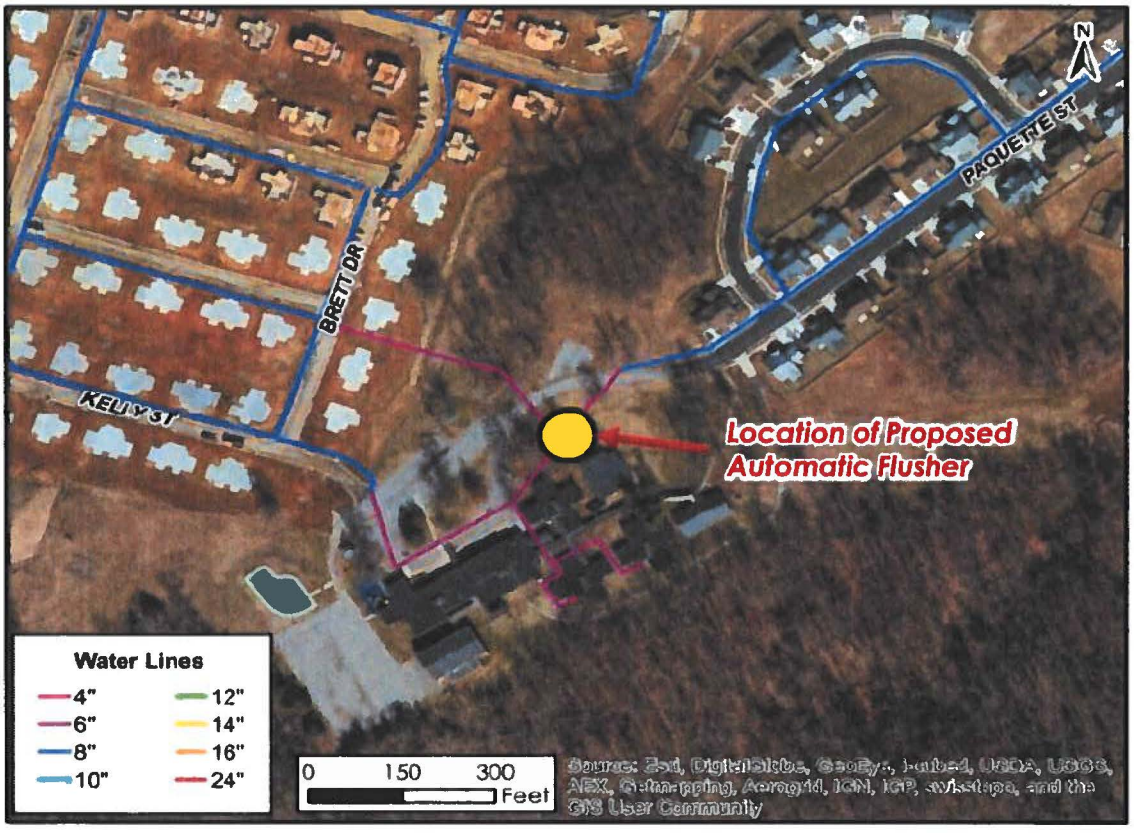
Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

Opinion of Probable Costs:

Construction	$	12,452
Mobilization	$	*5,534*
Installation of Automatic Flusher	$	*6,918*
General & Administrative (G&A)	$	548
Engineering/Design	$	-
Construction Inspection	$	-
Total Capital Cost:	**$**	**13,000**

Location Map

Project Description:
Project includes installation of an automatic flusher on a hydrant located at the end of the Van Voorhis Neighborhood.



Project 15: Automatic Flusher Installed in Prichard Area

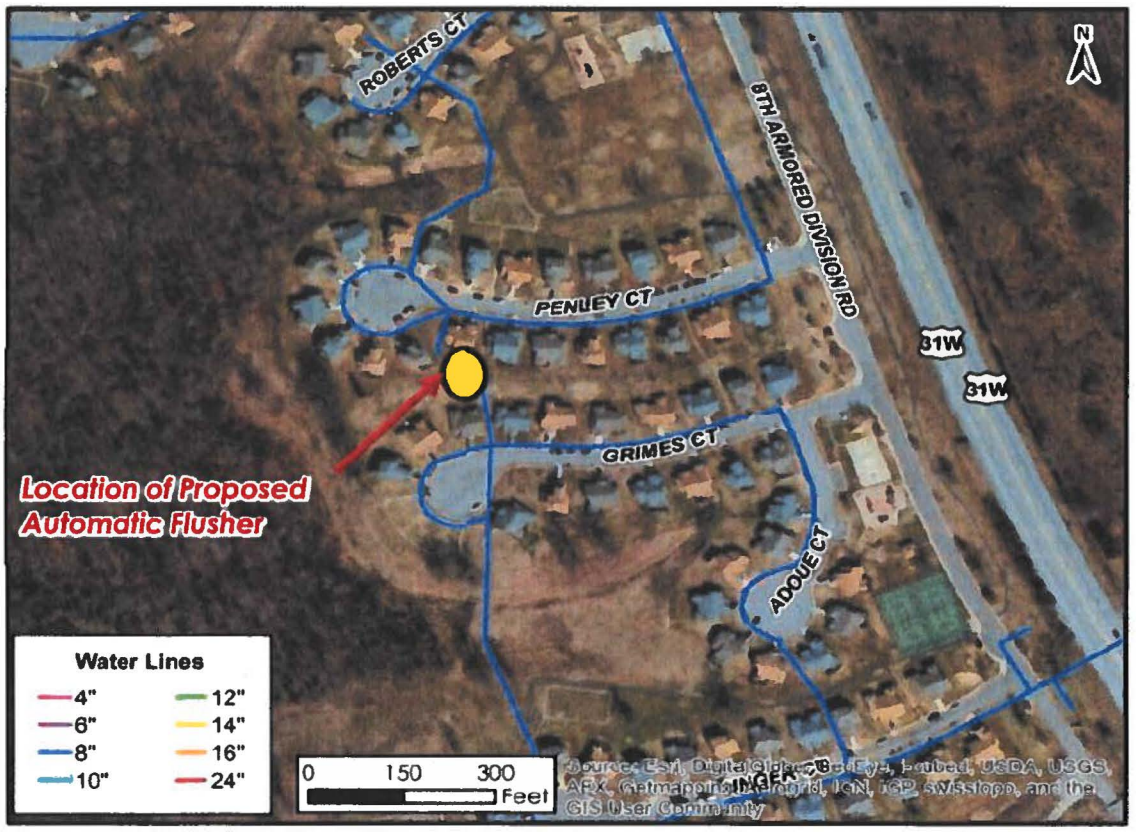
Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

Opinion of Probable Costs:

Construction	$	12,452
Mobilization	$	*5,534*
Installation of Automatic Flusher	$	*6,918*
General & Administrative (G&A)	$	548
Engineering/Design	$	-
Construction Inspection	$	-
Total Capital Cost:	**$**	**13,000**

Location Map

Project Description:
Project includes installation of an automatic flusher on a hydrant located at the end of the Prichard Neighborhood.



Project 16: Demolition of HRC Tank

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

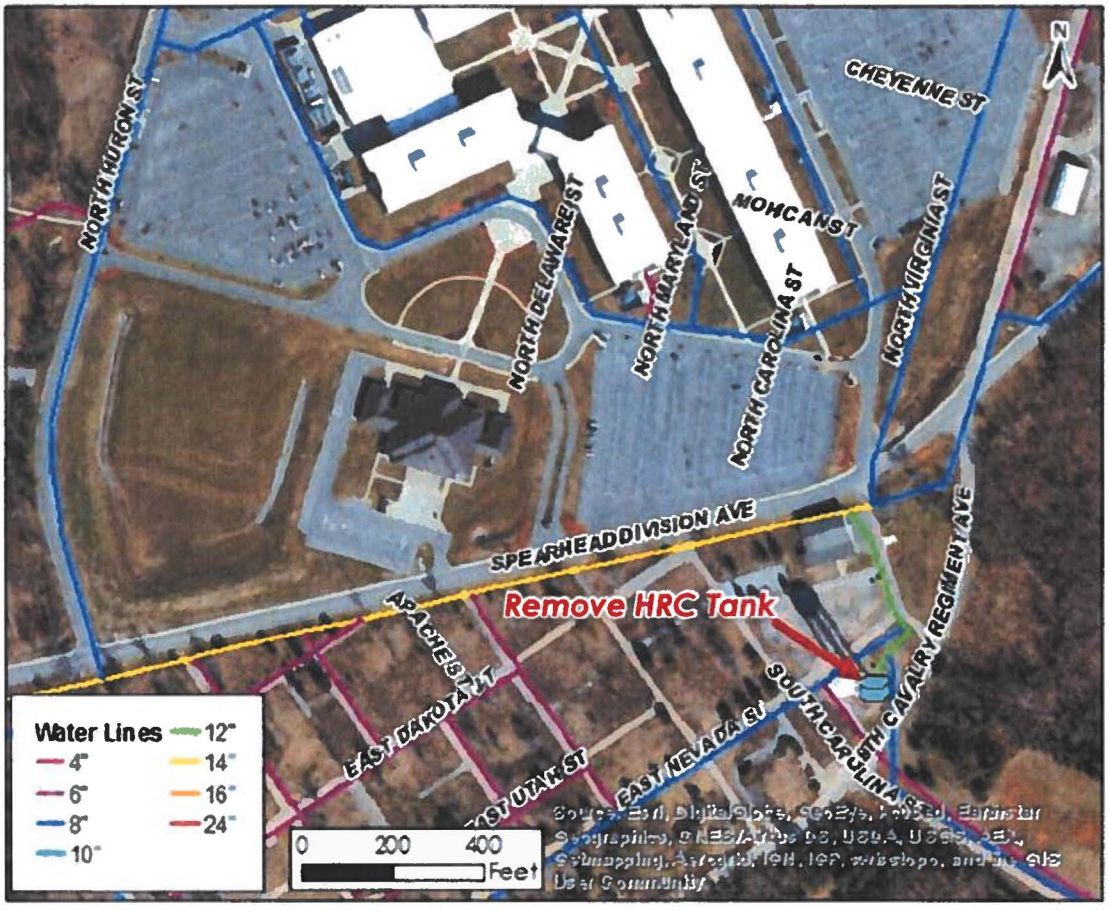
Opinion of Probable Costs:

Construction	$	57,839
Mobilization/Demobilization	$	*13,347*
Demolition & Sitework	$	*44,492*
General & Administrative (G&A)	$	2,545
Engineering/Design	$	8,097
Construction Inspection	$	7,519
Total Capital Cost:	**$**	**76,000**

Location Map

Project Description:

Remove 0.5 MG steel tank.



Project 17: Demolition of Fort Knox High School Tank

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

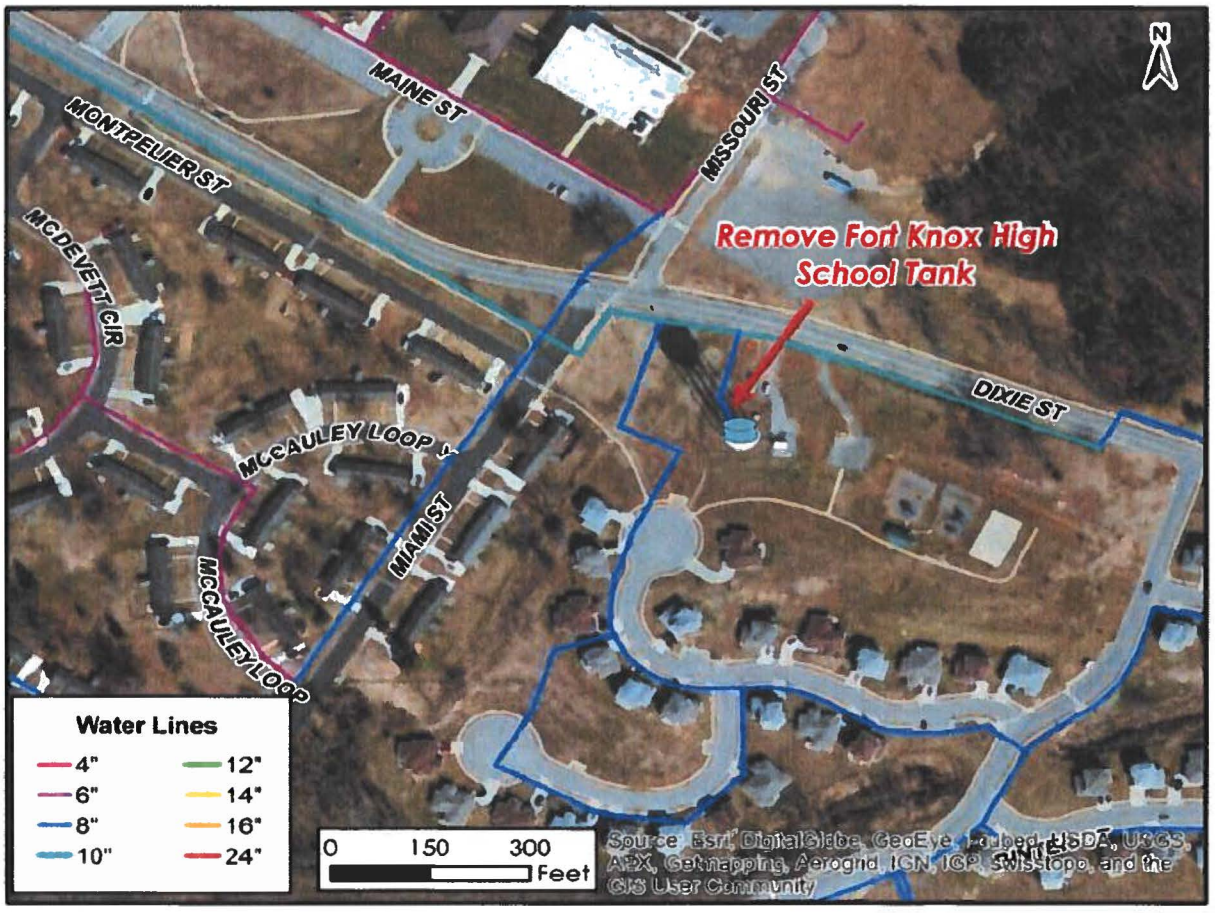
Opinion of Probable Costs:

Construction	$	57,839
Mobilization/Demobilization	$	*13,347*
Demolition & Sitework	$	*44,492*
General & Administrative (G&A)	$	2,545
Engineering/Design	$	8,097
Construction Inspection	$	7,519
Total Capital Cost:	$	**76,000**

Location Map

Project Description:

Remove 0.5 MG steel tank.



** This page was added as part of the 25 March 2017 revision.*

Project 18: Demolition of Old Ironsides Tank

Water Quality Model and Capital Improvements Plan
Fort Knox Water Distribution System

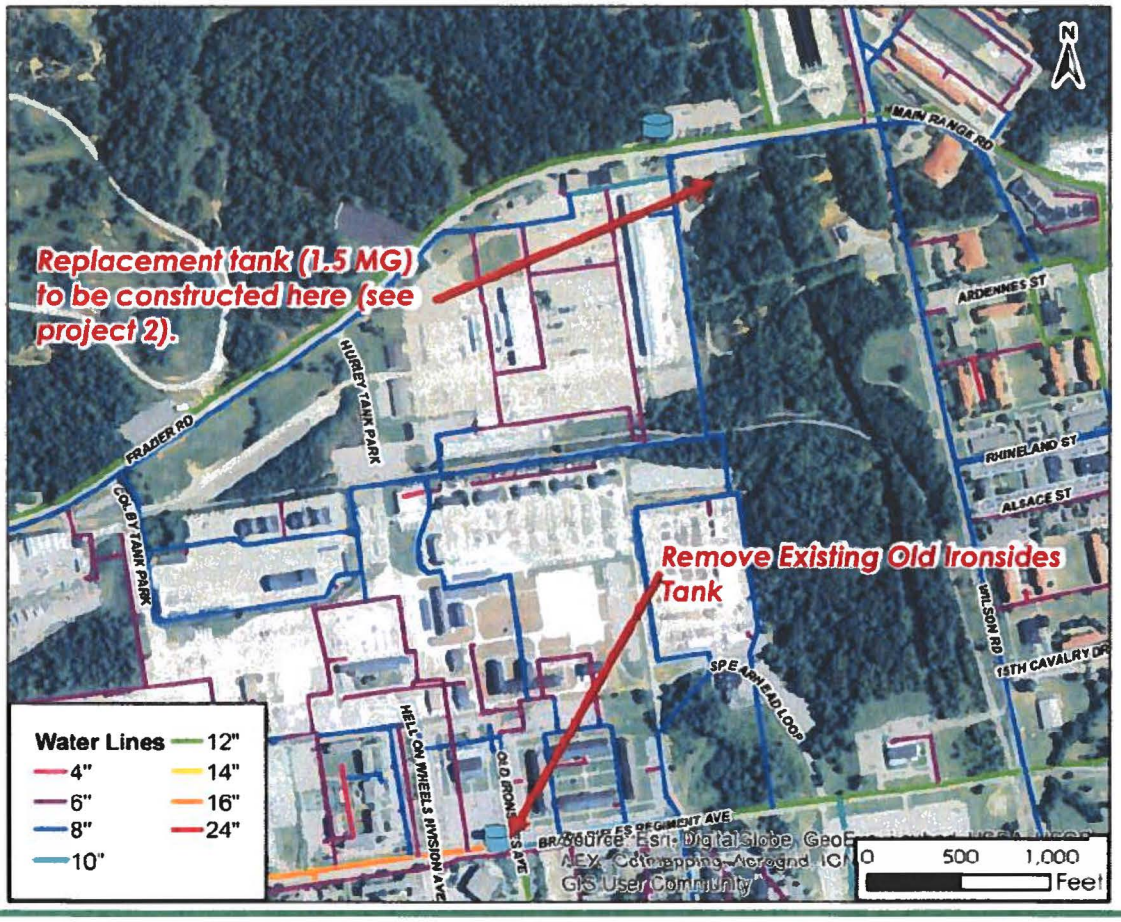
Opinion of Probable Costs:

Construction	$	57,839
Mobilization/Demobilization	$	*13,347*
Demolition & Sitework	$	*44,492*
General & Administrative (G&A)	$	2,545
Engineering/Design	$	8,097
Construction Inspection	$	7,519
Total Capital Cost:	**$**	**76,000**

Location Map

Project Description:

Remove 0.5 MG steel tank.



3. Monthly Service Charge Update

3.1. Summary of Changes

HCWD1 anticipates an updated Monthly Service Charge as a result of the proposed CIP and partial reallocation of funding for some of the ISDC projects. This price proposal reflects the changes to the Final Proposal Revision (FPR) submittal for the Privatization of the Potable Water Utility System at Fort Knox Army Installation, dated June 1, 2011.

The monthly service charge is depicted in Schedule B-1 of the FPR, identified as CLIN 0001, or Tariff Rate. The service charge is comprised of:

1) Operations and Maintenance (O&M) and General and Administrative (G&A) Expenses.
    a. O&M includes labor and benefits, purchased water costs ($0 for the FPR and this proposal), and other operating expenses;
    b. G&A is assumed to be 4.4% of the O&M costs per the methodology in the FPR;
    c. O&M/G&A costs remain constant through the first five years of the contract (without annual inflation increases); and
    d. O&M/G&A costs are depicted on **Table 8** and remain unchanged from the FPR for this proposal.
2) Capital Costs, which consist of the renewals and replacement (R&R) costs.
    a. R&R costs are provided by asset on **Table 9**, by asset and 50-year schedule/residual value on **Table 10**, and as a 50-year cash flow on **Table 11**. These tables follow the same format as Tables IV-2 through IV-4 in the FPR and have been updated to reflect the proposed CIP; specific assumptions/updates are included below.
3) Federal Income Taxes.
    a. Assumed to be $0 for the FPR and this proposal.

The monthly service charge for CLIN 0001 for years one and two of the contract was $246,172.00. Beginning in year three, the service charge was predicted to escalate by an inflationary rate of 1.752678% for contract years three through fifty; however, HCWD1 has elected to not increase rates to date (through year four of the contract).

The assumptions, methodologies, and spreadsheet calculations from the FPR were utilized for this proposal. Specific changes to and/or assumptions within the spreadsheets as a result of the new CIP are provided below.

- The first four years of the contract were locked into the current monthly service charge of $246,172 per month, of which $117,687 is for Capital Costs.
- There appears to be a formula error in the FPR's 50-year R&R schedule for 2" transite distribution pipe resulting in -$5 in residual value; this value was corrected for this proposal.
- Updated Table IV-2, R&R Inventory, which updates the 50-year R&R schedule. Updates include:
    - Decommissioning of Central Water Treatment Plant (WTP) and the associated raw water source assets (e.g. McCracken Spring Intake and Otter Creek Pump Station);

- Additional Muldraugh WTP elements that were previously proposed to be decommissioned in the FPR. Existing service life was estimated based on similar system assets in the FPR;
- Decommissioning of ~~eight~~ six elevated storage tanks, four of which were estimated for replacement and all were estimated for rehabilitation during the 50-year contract term (prior to 2061). The two proposed tanks were not added to the R&R because their service life is anticipated to exceed the contract term; however, painting costs (rehabilitation) for two tanks in year 2036 are included in the R&R at an estimated cost of $250,000; and and transferring ownership of the two Education Center Tanks back to Fort Knox
- Updated the distribution (by percentage) of capital costs for fire hydrants and distribution mains to be performed through R&R versus Initial System Deficiency Corrections (ISDC) to reflect the proposed reallocation of ISDC funds per our Price Proposal. **Table 5** below indicates this new distribution that is reflected in **Table 9**.

Table 5. ISDC Reallocation Summary

Project Name	ISDC Reference Number	ISDC Cost from Table IV-5 in FPR	Proposed Reallocation Budget	% ISDC Funded	% R&R Funded
Fire Hydrants [1]	11	$1,923,900	$1,689,042	26% [1]	74% [1]
Distribution Pipe & Valves – Transite [2]	20	$1,094,155	$1,094,155	0%	0% [2]
Distribution Pipe & Valves – DIP [3]	21	$2,981,841	$1,490,921	50%	8% [3]
Distribution Pipe & Valves - CIP	23	$6,504,769	$3,319,177	49%	51%

[1] *Of the 600 hydrants in the ISDC, the actual number of fire hydrants replaced to date is 156 since 2012, or 26%.*
[2] *Water mains in the North Dietz area have been replaced by others as part of housing project.*
[3] *About 42% of ductile iron pipe has already been replaced by others as part of housing project (in areas of projects 21-2 and 23-1).*

3.2. Revised Cost Tables

No update to the pricing model spreadsheets is required to address the requested changes per the 2016-02-01 Initial Neg Letter. Monthly Service Charge and other rates/surcharges remain the same as those in the 2015-09-03 Price Proposal. **Table 6** includes a summary of the updated rates and surcharges as a result of this proposal. The revised CLIN 0001 for Schedule B-1 is provided in **Table 7** and reflects the proposed update to the Monthly Service Charge, $245,094 for the first year, or year five of the contract (the prior anticipated FPR charge for year five was $260,422).

The following pages include **Tables 8 through 11** (updates to Tables IV-1 through IV-4 in the FPR) to support the revised monthly service charge calculation. Items highlighted in yellow in **Tables 8 through 11** reflect items that have been revised for this proposal.

Table 6. Rates, Surcharges, and Monthly Charges

No.	Rate or Surcharge	Existing Monthly Rate	Proposed Monthly Rate	Duration of Monthly Rate[1]
1	Monthly Service Charge (CLIN 0001)	$246,172	$245,094	50 years
2	ISDC Surcharge (CLIN 0002)~~[2]~~	$473,841	$473,841	60 months
3	Transition Surcharge (CLIN 0004)	$592,518	$592,518	1 month
4	Purchase Price Recovery Surcharge (CLIN 0003)	$85,968	$85,968	120 months
5	Credit as Payment of Purchase Price (reduces net charge)	$85,968	$85,968	120 months
6	Proposed CIP Surcharge~~[2]~~	$0	$0.00 ~~$121,330~~ ~~$117,997.11~~	~~36 months (contract years 6 to 8)~~ N/A

[1] *Durations begin at contract onset in 2011 unless otherwise noted.*

[2] ~~*The proposed ISDC Surcharge or a new surcharge may vary due to various CIP payment options, see Table 4.*~~

SCHEDULE B-1 REGULATED TARIFF[a]
Payment by the Government for Utility Service
(Nominal Dollars)

Table 7. Schedule B-1 Regulated Tariff

Fort Knox, Kentucky

Utility System[a]: Ft. Knox Water Utility

CLINs	Supplies/Services										Tariff/Schedule/Rate	
0001	Applicable Tariff(s)[a] (See B.5.1)–Monthly Service Charge Component ***Detailed, Year by Year Charges:***											
	Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
	O&M/G&A Expenses	$ 128,484	$ 128,484	$ 128,484	$ 128,484	$ 128,484	$ 132,182	$ 134,499	$ 136,856	$ 139,255	$ 141,695	
	Capital Costs	$ 117,687	$ 117,687	$ 117,687	$ 117,687	$ 116,610	$ 118,653	$ 120,733	$ 122,849	$ 125,002	$ 127,193	
	Federal Income Taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Tariff Rate	**$ 246,172**	**$ 246,172**	**$ 246,172**	**$ 246,172**	**$ 245,094**	**$ 250,835**	**$ 255,232**	**$ 259,705**	**$ 264,257**	**$ 268,888**	
	Year	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	
	O&M/G&A Expenses	$ 144,179	$ 146,706	$ 149,277	$ 151,893	$ 154,556	$ 157,265	$ 160,021	$ 162,826	$ 165,679	$ 168,583	
	Capital Costs	$ 129,422	$ 131,691	$ 133,999	$ 136,347	$ 138,737	$ 141,169	$ 143,643	$ 146,161	$ 148,722	$ 151,329	
	Federal Income Taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Tariff Rate	**$ 273,601**	**$ 278,397**	**$ 283,276**	**$ 288,241**	**$ 293,293**	**$ 298,433**	**$ 303,664**	**$ 308,986**	**$ 314,402**	**$ 319,912**	
	Year	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	
	O&M/G&A Expenses	$ 171,538	$ 174,544	$ 177,604	$ 180,716	$ 183,884	$ 187,107	$ 190,386	$ 193,723	$ 197,118	$ 200,573	
	Capital Costs	$ 153,981	$ 156,680	$ 159,426	$ 162,220	$ 165,064	$ 167,957	$ 170,900	$ 173,896	$ 176,944	$ 180,045	
	Federal Income Taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Tariff Rate	**$ 325,519**	**$ 331,224**	**$ 337,030**	**$ 342,937**	**$ 348,947**	**$ 355,063**	**$ 361,286**	**$ 367,619**	**$ 374,062**	**$ 380,618**	
	Year	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	
	O&M/G&A Expenses	$ 204,088	$ 207,665	$ 211,305	$ 215,009	$ 218,777	$ 222,612	$ 226,513	$ 230,483	$ 234,523	$ 238,633	
	Capital Costs	$ 183,200	$ 186,411	$ 189,678	$ 193,003	$ 196,386	$ 199,828	$ 203,330	$ 206,894	$ 210,520	$ 214,210	
	Federal Income Taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Tariff Rate	**$ 387,289**	**$ 394,077**	**$ 400,984**	**$ 408,012**	**$ 415,163**	**$ 422,439**	**$ 429,843**	**$ 437,377**	**$ 445,043**	**$ 452,843**	
	Year	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	
	O&M/G&A Expenses	$ 242,816	$ 247,072	$ 251,402	$ 255,808	$ 260,292	$ 264,854	$ 269,496	$ 274,219	$ 279,025	$ 283,916	
	Capital Costs	$ 217,964	$ 221,784	$ 225,671	$ 229,627	$ 233,651	$ 237,746	$ 241,913	$ 246,153	$ 250,468	$ 254,858	
	Federal Income Taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Tariff Rate	**$ 460,780**	**$ 468,856**	**$ 477,073**	**$ 485,435**	**$ 493,943**	**$ 502,600**	**$ 511,409**	**$ 520,373**	**$ 529,493**	**$ 538,773**	
	Monthly Credit as Payment for Purchase Price (See B.5.2) $ 85,968 Monthly Credit 120 # months 3.0% Interest Rate									Purchase Price	$ 8,903,000	
0002	Initial System Deficiency Corrections / Connection Charges [ ] (See B.7.3 and B.7.4 (Schedule 3) This amount should not be included in the price offered for CLIN 1)									(First 60 Months Only)	$ 473,841	
0003	Recoverable Portion of Purchase Price [b] (see B.5.4 and B.7.5 (Schedule) This amount should not be included in the price offered CLIN 1)									(First 1 Months Only)	$ 85,968 - See Schedule 4	
0004	Transition Period									(First Month Only)	$ 592,518 - See Schedule 3	

[a] Utility system to be filled in by Offeror. A B-1 must be completed for each utility system offered. Utility systems shown in Schedule A paragraph B.3, *Systems to be Privatized*. Offerors shall provide a comprehensive description of proposed tariffs in their Price Proposals. See B.5.1.

[b] CLINs 0002 and 0003 are required only if tariff provides for separate identification of connection charges and the recoverable portion of the purchase price. If separate identification is not provided, it will be assumed the tariff rate includes these costs.

NOTES:
1. The Purchase Price, Recoverable Portion of the Purchase Price, interest rate and amortization period are proposed by the Offeror.
2. Tariff rates presented in CLIN 0001 are nominal dollar values. Both Nominal and Constant 2011$ tariffs are presented in the applicable J45 schedule.

Table 8. O M Costs (Table IV-1 in FPR)

Table IV-1

Annual O&M Costs for Planned Operational Phases for Water Utility Service at Ft. Knox

Dollar Basis, Cost Components	Transition Period	Year 1	Years 2-5	Years 6-50
Constant 2011 Dollars				
Labor and Benefits	$ 80,296	$1,054,993	$1,054,993	$ 974,152
Purchased Water	-	-	-	-
Other Operating Expenses	487,250	384,767	382,927	382,927
Total Direct Costs	$ 567,546	$1,439,760	$1,437,920	$1,357,079
General and Administrative Cost	24,972	63,349	63,268	59,711
Total (Annual)	$ 592,518	$1,503,109	$1,501,188	$1,416,790
Total (Monthly)	$ 49,377	$ 125,259	$ 125,099	$ 118,066
Constant 2009 Dollars (for Input to RFP Schedule 5)				
Labor and Benefits	$ 77,554	$ 1,018,961	$ 1,018,961	$ 940,881
Purchased Water	$ -	$ -	$ -	$ -
Other Operating Expenses	$ 470,609	$ 371,626	$ 369,849	$ 369,849
Total Direct Costs	$ 548,163	$1,390,587	$1,388,810	$1,310,730
General and Administrative Cost	24,119	61,186	61,108	57,672
Total (Annual)	$ 572,282	$1,451,773	$1,449,918	$1,368,402
Total (Monthly)	$ 47,690	$ 120,981	$ 120,826	$ 114,034
Constant 2012-13 Dollars*				
Labor and Benefits	$ 80,296	$ 1,082,850	$ 1,082,850	$ 999,874
Purchased Water	$ -	$ -	$ -	$ -
Other Operating Expenses	$ 487,250	$ 394,927	$ 393,038	$ 393,038
Total Direct Costs	$ 567,546	$1,477,776	$1,475,888	$1,392,912
General and Administrative Cost	24,972	65,022	64,939	61,288
Total (Annual)	$ 592,518	$1,542,799	$1,540,827	$1,454,200
Total (Monthly)		$ 128,567	$ 128,402	$ 121,183

Table 9. R R Inventory (Table IV-2 in FPR)

Table IV-2

Renewal and Replacement Schedule

(2011$)

This table generally follows the format included in RFP Schedule 2--Renewals and Replacements--50 YEAR SCHEDULE

Notes: For each inventory component/item listed in the applicable J-section inventory, clearly show the $value of the planned R&R (if any) for each year 1-50

Item and Size	Quant	Unit	Approx Year Installed	Existing Item Service Life	First Expected Replacement Date	Number of Years to Replace if >1	% ISDC	% R&R	New Item	New Item Service Life	New Unit Cost RCN	New Item RCN	Rehab Cost	Rehab Year	Expected Subsequent Replacement Dates		
															Second R&R	Third R&R	Fourth R&R
RAW WATER SOURCES																	
McCracken Spring Intake	1	Each	1937	77	Decommission				Same as existing	75	$23,000	$23,000					
CI Line to Otter Creek PS - 16"	2500	LF	1937	77	Decommission				Ductile Iron Pipe	75	$105	$262,500					
Otter Creek PS (Facility No. 9213) - Structure	1701	SF	1936	79	Decommission				Same as existing	75	$46	$78,246					
Intake /Mechanical Screen	1	Each	1953	61	Decommission				Same as existing	75	$23,000	$23,000					
Pump Controls	3	Each	1995	25	Decommission				Same as existing	25	$34,500	$103,500					
Pump No. 4 - 1,200 gpm, 150 HP	1	Each	1983	34	Decommission				Same as existing	25	$34,500	$34,500		Decommission			
Pump No. 9 - 2,100 gpm, 230 HP	1	Each	1983	34	Decommission				Same as existing	25	$52,900	$52,900		Decommission			
Pump No. 10 - 2,100 gpm, 250 HP	1	Each	2008	25	Decommission				Same as existing	25	$57,500	$57,500		Decommission			
Emergency Generator - 350 KW	1	Each	1981	35	Decommission				Same as existing	35	$104,545	$104,545		Decommission			
CI Line to Central WTP - 16-inch	11963	LF	1937	80	Decommission				Ductile Iron Pipe	50	$105	$1,256,115					
Central WTP (Facility No 1205) - 3.5 MGD																	
Central WTP (Facility No. 1205) - Structure	6799	SF	1937	75	Decommission				Same as existing	75	$80	$543,920					
Chemical Feed Systems																	
Clarifier - 3.5 MG	1	Each	1937	83	Decommission				Same as existing	75	$3,450,000	$3,450,000					
Multi-Media Filters - 1 MG	3	Each	1937	83	Decommission				Same as existing	75	$376,050	$1,128,150					
Filter Back Wash Tank - 150,000 gallons	1	Each	1978	75	Decommission				Same as existing	75	$747,500	$747,500					
Clear Well No. 1 - 0.5 MG	1	Each	1937	83	Decommission				Same as existing	75	$287,500	$287,500					
Clear Well No. 2 - 2 MG - 1945	1	Each	1945	75	Decommission				Same as existing	75	$1,150,000	$1,150,000					
Central WTP High Lift																	
Pump No. 1 & Controls - 4,850 gpm, 250 HP	1	Each	1970	43	Decommission				Same as existing	25	$57,500	$57,500		Decommission			
Pump No. 2 & Controls - 1,000 gpm, 70 HP	1	Each	1984	29	Decommission				Same as existing	25	$16,100	$16,100		Decommission			
Pump No. 3 & Controls - 1,400 gpm, 60 HP	1	Each	1984	29	Decommission				Same as existing	25	$13,800	$13,800		Decommission			
Filter Back Wash Pump & Controls - 5,400 gpm	1	Each	1994	25	Decommission				Same as existing	25	$72,300	$72,300		Decommission			
Emergency Generator - 280 KW	1	Each	2010	30	Decommission				Same as existing	35	$100,000	$100,000					
West Point Well Field																	
Well No. 1. Pump/Controls - 750 gpm, 125 HP	1	Each	1998	25	2023				Same as existing	25	$66,125	$66,125			2048		
Well No. 2. Pump/Controls - 750 gpm, 125 HP	1	Each	2004	25	2029				Same as existing	25	$66,125	$66,125			2054		
Well No. 3. Pump/Controls - 750 gpm, 125 HP	1	Each	2004	25	2029				Same as existing	25	$66,125	$66,125			2054		
Well No. 5. Pump/Controls - 750 gpm, 125 HP	1	Each	2002	25	2027				Same as existing	25	$66,125	$66,125			2052		
Well No. 6. Pump/Controls - 500 gpm, 75 HP	1	Each	2000	25	2025				Same as existing	25	$46,575	$46,575			2050		
Well No. 7. Pump/Controls - 750 gpm, 125 HP	1	Each	1985	27	2012				Same as existing	25	$66,125	$66,125			2037		
Well No. 8. Pump/Controls - 750 gpm, 125 HP	1	Each	1998	25	2023				Same as existing	25	$66,125	$66,125			2048		
Well No. 9. Pump/Controls - 750 gpm, 125 HP	1	Each	1998	25	2023				Same as existing	25	$66,125	$66,125			2048		
Well No. 10. Pump/Controls - 750 gpm, 125 HP	1	Each	1999	25	2024				Same as existing	25	$66,125	$66,125			2049		
Well No. 11. Pump/Controls - 750 gpm, 125 HP	1	Each	2000	25	2025				Same as existing	25	$66,125	$66,125			2050		
Well No. 12A. Pump/Controls - 750 gpm, 125 HP	1	Each	1985	27	2012				Same as existing	25	$66,125	$66,125			2037		
Well No. 12B. Pump/Controls - 750 gpm, 125 HP	1	Each	2003	25	2028				Same as existing	25	$66,125	$66,125			2053		
Well No. 13. Pump/Controls - 750 gpm, 125 HP	1	Each	1992	25	2017				Same as existing	25	$66,125	$66,125			2042		
Well Field Header - 16-inch	3960	LF	1937	78	2015				Ductile Iron Pipe	75	$105	$415,800					
CI Line to Muldraugh WTP - 24 inch	15840	LF	1937	82	2019				Ductile Iron Pipe	50	$181	$2,867,040					
Muldraugh WTP (Facility No. 3009) - 7.0 MGD	1	Each	1941	75						75	$4,923,380	$4,923,380					
Muldraugh WTP (Facility No. 3009) - Structure	14860	SF	1941	75	2016					75	$92	$1,367,120					
Chemical Feed Systems (value included in WTP cost)										25							
Clarifier No. 1 - 5.0 MG	1	Each	1998	83	2081					75	$5,750,000	$5,750,000					
Clarifier No. 2 - 2.0 MG	1	Each	1998	83	2081					75	$2,300,000	$2,300,000					
Multi-Media Filters - 1 MGD	7	Each	1997	75	2072					75	$376,050	$2,632,350					
Filter Back Wash Tank - 150,000 gallons	1	Each	1978	75	2053					75	$747,500	$747,500					
Clear Well - 1.0 MG	1	Each	1989	75	2064				Same as existing	75	$1,150,000	$1,150,000					

Table 9. R R Inventory (Table IV-2 in FPR)

Table IV-2

Renewal and Replacement Schedule

(2011$)

This table generally follows the format included in RFP Schedule 2–Renewals and Replacements--50 YEAR SCHEDULE

Notes: For each inventory component/item listed in the applicable J-section inventory, clearly show the $value of the planned R&R (if any) for each year 1-50

Item and Size	Quant	Unit	Approx Year Installed	Existing Item Service Life	First Expected Replacement Date	Number of Years to Replace if >1	% ISDC	% R&R	New Item	New Item Service Life	New Unit Cost RCN	New Item RCN	Rehab Cost	Rehab Year	Expected Subsequent Replacement Dates		
															Second R&R	Third R&R	Fourth R&R
Sludge Lagoons	4	Each	1978	40	2018					20	$17,250	$69,000			2038	2058	
Muldraugh High Lift (Facility No. 3008) - Structure	1840	SF	1977	75	2052				Same as existing	75	$173	$317,400					
Pump A & Controls - 3,500 gpm, 250 HP	1	Each	1984	30	2014				Same as existing	25	$115,000	$115,000			2039		
Pump B & Controls - 4,850 gpm, 350 HP	1	Each	1970	44	2014				Same as existing	25	$154,100	$154,100			2039		
Pump C & Controls - 2,200 gpm, 150 HP	1	Each	1984	30	2014				Same as existing	25	$75,900	$75,900			2039		
Filter Backwash Pump & Controls - 5,400 gpm	1	Each	2008	25	2033					25	$120,750	$120,750			2058		
Emergency Generator - 600 KW	1	Each	1990	35	2025					35	$184,000	$184,000					
CI Line to Cantonment Area - 24 inch	10449	LF	1941	82	2023					50	$381	$3,977,412					
Valves																	
0.75"	3	Each	1935						Included with pipe								
1"	28	Each	1935						Included with pipe								
1.25"	13	Each	1935						Included with pipe								
1.25"	3	Each	1958						Included with pipe								
1.5"	51	Each	1935						Included with pipe								
1.5"	65	Each	2005						Included with pipe								
2"	137	Each	1935						Included with pipe								
2"	33	Each	1958						Included with pipe								
2"	1	Each	2007						Included with pipe								
2"	13	Each	2008						Included with pipe								
2.5"	15	Each	1935						Included with pipe								
3"	81	Each	1935						Included with pipe								
3"	2	Each	2007						Included with pipe								
4"	76	Each	1935						Included with pipe								
4"	2	Each	1994						Included with pipe								
4"	2	Each	2007						Included with pipe								
4"	15	Each	2008						Included with pipe								
5"	2	Each	1935						Included with pipe								
6"	592	Each	1935						Included with pipe								
6"	63	Each	1958						Included with pipe								
6"	5	Each	2003						Included with pipe								
6"	3	Each	2007						Included with pipe								
6"	13	Each	2008						Included with pipe								
8"	381	Each	1935						Included with pipe								
8"	39	Each	1958						Included with pipe								
8"	4	Each	1994						Included with pipe								
8"	32	Each	1997						Included with pipe								
8"	9	Each	2008						Included with pipe								
10"	108	Each	1935						Included with pipe								
10"	10	Each	1958						Included with pipe								
10"	1	Each	2007						Included with pipe								
12"	52	Each	1935						Included with pipe								
12"	6	Each	1958						Included with pipe								
12"	2	Each	1994						Included with pipe								
14"	21	Each	1935						Included with pipe								
16"	15	Each	1935						Included with pipe								
20"	6	Each	1996						Included with pipe								
24"	1	Each	1935						Included with pipe								
Zussman Range (Mt Eden) - Valves																	

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Notes: For each inventory component/item listed in the applicable J-section inventory, clearly show the $value of the planned R&R (if any) for each year 1-50

Item and Size	Quant	Unit	Approx Year Installed	Existing Item Service Life	First Expected Replacement Date	Number of Years to Replace if >1	% ISDC	% R&R	New Item	New Item Service Life	New Unit Cost RCN	New Item RCN	Rehab Cost	Rehab Year	Expected Subsequent Replacement Dates: Second R&R	Third R&R	Fourth R&R
1"	4	Each	1997						Included with pipe								
1"	2	Each	2002						Included with pipe								
1.5"	1	Each	2002						Included with pipe								
4"	2	Each	1997						Included with pipe								
4"	13	Each	2002						Included with pipe								
Yano Range - Valves																	
2"	2	Each	1990						Included with pipe								
Pressure Reducing Valves	2	Each	1990						Included with pipe								
Meters																	
Meters	50	ea	1998	25	2023				Same as existing	25	$2,620	$131,000			2048		
Basham's Corner - Meters																	
Meters	2	ea	2004	25	2029				Same as existing	25	$2,620	$5,240			2054		
Basham's Corner - Back Flow Preventers																	
Basham's Corner - Back Flow Preventers	2	ea	2004	20	2024				Same as existing	20	$4,500	$9,000			2044		
Pressure Reducing Station																	
Pressure Reducing Station	1	ea	2003	25	2028				Same as existing	25	$4,500	$4,500			2053		
SCADA																	
SCADA (Pump Controls)	3	ea	1995	--	In New Scada				Same as existing	--				-			
New SCADA System	1	ea	ISDC	--	2037		100%		Same as existing	25	$330,000	$330,000					
Automatic Transfer Switches																	
Install switches at Otter creek PS, Central WTP and Muldraugh HLPS	1		2011	25	2036				Same as existing	25	$22,500	$22,500					
Well Control System																	
Well Control System	1	ea	1995	25	2020				Same as existing	25					2045		
Van Voorhis BPS (Facility No. 5898)																	
Van Voorhis BPS - Structure	1500	SF	1995	75	2070				Same as existing	75	$80	$120,000					
Pump No. 1 & Pressure Tank - 175 gpm, 10 HP	1	ea	1995	25	2020				Same as existing	25	$3,943	$3,943			2045		
Pump No. 2 & Pressure Tank - 175 gpm, 10 HP	1	ea	1995	25	2020				Same as existing	25	$3,949	$3,949			2045		
Pump No. 3 & Pressure Tank - 175 gpm, 10 HP	1	ea	1995	25	2020				Same as existing	25	$3,949	$3,949			2045		
Fire Protection (Diesel Fueled) - 2,000 gpm, 125 HP	1	ea	1995	30	2025				Same as existing	30	$7,550	$7,550			2055		
Elevated Storage Tanks (Steel) Repairs																	
Tank No. 1 & cathodic protection - 250,000 gallons	250000	Gal	1935	94	Decommission				Same as existing	75	$2	$517,500	$195,000	Decommission			
Tank No. 2 & cathodic protection - 500,000 gallons - 1937	500000	Gal	1937	92	Decommission				Same as existing	75	$2	$1,035,000	$390,000	Decommission			
Tank No. 3 & cathodic protection - 500,000 gallons -1941	500000	Gal	2009	75	Decommission				Same as existing	75	$2	$1,035,000	$390,000	Decommission			
Tank No. 4 & cathodic protection - 500,000 gallons - 1941	500000	Gal	1941	88	Decommission				Same as existing	75	$2	$1,035,000	$390,000	Decommission			
Tank No. 5 & cathodic protection - 300,000 gallons - 1958	300000	Gal	1958	77	Decommission				Same as existing	75	$2	$621,000	$390,000	Decommission			
Tank No. 6 & cathodic protection - 500,000 gallons	500000	Gal	1995	75	Decommission				Same as existing	75	$2	$1,035,000	$390,000	Decommission			
Tank No. 7 & cathodic protection - 500,000 gallons	500000	Gal	1997	75	Decommission				Same as existing	75	$2	$1,035,000	$250,000	2037			
Tank No. 8 & cathodic protection - 500,000 gallons	500000	Gal	1997	75	Decommission				Same as existing	75	$2	$1,035,000	$250,000	2037			
DISTRIBUTION PIPE - CAST IRON (12" and Over Replaced with DIP)																	
Unknown Diameter (assume 6")	1420	LF	1935	79	2014	15	0%	100%	PVC	50	$37	$52,540					
0.75" (NA - DIP starts at 4" Diameter)	1155	LF	1935	79	2014	15	0%	100%	PVC	50	$20	$23,100					
1 " (NA - DIP starts at 4" Diameter)	4463	LF	1935	79	2014	15	11%	89%	PVC	50	$21	$93,723					
1.25" (NA - DIP starts at 4" Diameter)	4207	LF	1935	79	2014	15	1%	99%	PVC	50	$22	$92,554					
1.5" (NA - DIP starts at 4" Diameter)	12470	LF	1935	79	2014	15	3%	97%	PVC	50	$22	$274,340					
2" (NA - DIP starts at 4" Diameter)	28836	LF	1935	79	2014	15	6%	94%	PVC	50	$24	$692,064					
2.5" (NA - DIP starts at 4" Diameter)	4785	LF	1935	79	2014	15	5%	95%	PVC	50	$25	$119,625					

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(2011$)

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Notes: For each inventory component/item listed in the applicable J-section inventory, clearly show the $value of the planned R&R (if any) for each year 1-50

Item and Size	Quant	Unit	Approx Year Installed	Existing Item Service Life	First Expected Replacement Date	Number of Years to Replace if >1	% ISDC	% R&R	New Item	New Item Service Life	New Unit Cost RCN	New Item RCN	Rehab Cost	Rehab Year	Expected Subsequent Replacement Dates		
															Second R&R	Third R&R	Fourth R&R
3" (NA - DIP starts at 4" Diameter)	9504	LF	1935	79	2014	15	22%	78%	PVC	50	$25	$237,600					
4"	13331	LF	1935	79	2014	15	14%	86%	PVC	50	$28	$366,603					
5" (NA Pipe diameters even numbers - use 6")	410	LF	1935	79	2014	15	0%	100%	PVC	50	$37	$15,170					
6"	216645	LF	1935	79	2014	15	14%	86%	PVC	50	$37	$8,015,865					
8"	158064	LF	1935	79	2014	15	12%	88%	PVC	50	$38	$6,006,432					
8" - HR Center	4237	LF	1935	78	2013	15	100%	0%	PVC	50	$38	$161,006					
10"	46690	LF	1935	79	2014	15	18%	82%	PVC	50	$66	$3,081,540					
12"	30122	LF	1935	79	2014	15	7%	93%	Ductile Iron	50	$74	$2,229,028					
14"	16393	LF	1935	79	2014	15	5%	95%	Ductile Iron	50	$84	$1,377,012					
16"	3920	LF	1935	79	2014	15	0%	100%	Ductile Iron	50	$92	$360,640					
24"	10560	LF	1935	79	2014	15	0%	100%	Ductile Iron	50	$181	$1,911,360					
DISTRIBUTION PIPE - DUCTILE IRON																	
1" (NA - DIP starts at 4" Diameter)	180	LF	1958	55	2013	15	50%	8%	PVC	50	$21	$3,780					
1.25" (NA - DIP starts at 4" Diameter)	7076	LF	1958	55	2013	15	50%	8%	PVC	50	$22	$156,672					
1.5" (NA - DIP starts at 4" Diameter)	4293	LF	1958	55	2013	15	50%	8%	PVC	50	$23	$98,739					
2" (NA - DIP starts at 4" Diameter)	11436	LF	1958	55	2013	15	50%	8%	PVC	50	$24	$274,464					
3" (NA - DIP starts at 4" Diameter)	1115	LF	1958	55	2013	15	50%	8%	PVC	50	$25	$27,875					
6"	25835	LF	1958	55	2013	15	50%	8%	PVC	50	$37	$955,895					
8"	18035	LF	1958	55	2013	15	50%	8%	PVC	50	$38	$685,330					
8"	4118	LF	2007	50	2057	15	0%	100%	PVC	50	$38	$156,484					
10"	4677	LF	1958	55	2013	15	50%	8%	PVC	50	$66	$308,682					
12"	897	LF	1958	55	2013	15	50%	8%	Ductile Iron	50	$74	$66,378					
12"	9183	LF	1994	50	2044	15	0%	100%	Ductile Iron	50	$74	$679,542					
14"	192	LF	1958	55	2013	15	50%	8%	Ductile Iron	50	$84	$16,128					
DISTRIBUTION PIPE - TRANSITE (Replaced with C-900/PVC sch 50)																	
1"	834	LF	1935	78	2013	15	0%	0%	PVC	50	$21	$17,514					
1.5"	1958	LF	1935	78	2013	15	0%	0%	PVC	50	$22	$43,736					
2"	3726	LF	1935	78	2013	15	0%	0%	PVC	50	$24	$89,424					
3"	284	LF	1935	78	2013	15	0%	0%	PVC	50	$25	$7,100					
6"	4231	LF	1935	78	2013	15	0%	0%	PVC	50	$37	$156,547					
8"	6472	LF	1935	78	2013	15	0%	0%	PVC	50	$38	$245,936					
10"	5927	LF	1935	78	2013	15	0%	0%	PVC	50	$66	$391,182					
DISTRIBUTION PIPE - PVC (Replaced with C-900/PVC sch 50)																	
1.5"	16608	LF	2005	50	2055	15	0%	100%	PVC	50	$23	$381,984					
2"	10698	LF	2006	50	2056	15	0%	100%	PVC	50	$24	$256,752					
3"	473	LF	2007	50	2057	15	0%	100%	PVC	50	$25	$11,825					
3"	603	LF	2008	50	2058	15	0%	100%	PVC	50	$25	$15,075					
4"	24	LF	1997	50	2047	15	0%	100%	PVC	50	$28	$660					
4"	334	LF	2005	50	2055	15	0%	100%	PVC	50	$28	$9,185					
4"	443	LF	2007	50	2057	15	0%	100%	PVC	50	$28	$12,183					
4"	6368	LF	2008	50	2058	15	0%	100%	PVC	50	$28	$175,120					
6"	9224	LF	1994	50	2044	15	0%	100%	PVC	50	$37	$341,288					
6"	7640	LF	2003	50	2053	15	0%	100%	PVC	50	$37	$282,680					
6"	2912	LF	2005	50	2055	15	0%	100%	PVC	50	$37	$107,744					
6"	6372	LF	2007	50	2057	15	0%	100%	PVC	50	$37	$235,764					
6"	5033	LF	2008	50	2058	15	0%	100%	PVC	50	$37	$186,221					
8"	10211	LF	1994	50	2044	15	0%	100%	PVC	50	$38	$388,018					
8"	14522	LF	1997	50	2047	15	0%	100%	PVC	50	$38	$551,836					
8"	18915	LF	2005	50	2055	15	0%	100%	PVC	50	$38	$718,770					

Table 9. R R Inventory (Table IV-2 in FPR)

Table IV-2

Renewal and Replacement Schedule

(2011$)

This table generally follows the format included in RFP Schedule 2--Renewals and Replacements--50 YEAR SCHEDULE

Notes: For each inventory component/item listed in the applicable J-section inventory, clearly show the $value of the planned R&R (if any) for each year 1-50

Item and Size	Quant	Unit	Approx Year Installed	Existing Item Service Life	First Expected Replacement Date	Number of Years to Replace if >1	% ISDC	% R&R	New Item	New Item Service Life	New Unit Cost RCN	New Item RCN	Rehab Cost	Rehab Year	Expected Subsequent Replacement Dates		
															Second R&R	Third R&R	Fourth R&R
8"	2223	LF	2007	50	2057	15	0%	100%	PVC	50	$38	$84,474					
8"	4644	LF	2008	50	2058	15	0%	100%	PVC	50	$38	$176,472					
10"	1555	LF	1994	50	2044	15	0%	100%	PVC	50	$66	$102,630					
10"	106	LF	2005	50	2055	15	0%	100%	PVC	50	$66	$6,996					
12"	1996	LF	1994	50	2044	15	0%	100%	Ductile Iron	50	$75	$149,700					
Zussman Range (Mt.Eden) - Pipe Material - PVC																	
1"	110	LF	1997	50	2047	15	0%	100%	PVC	50	$24	$2,657					
1"	383	LF	2002	50	2052	15	0%	100%	PVC	50	$24	$9,249					
1.5"	60	LF	2002	50	2052	15	0%	100%	PVC	50	$26	$1,587					
4"	30177	LF	1997	50	2047	15	0%	100%	PVC	50	$28	$829,868					
Zussman Range (Mt.Eden) - Pipe Material - PE																	
1"	1111	LF	2002	50	2052	15	0%	100%	PVC	50	$24	$26,831					
4"	13668	LF	2002	50	2052	15	0%	100%	PVC	50	$28	$375,870					
Yano Range - Pipe Material - PVC																	
2"	2500	LF	1990	50	2040	15	0%	100%	PVC	50	$28	$69,000					
Basham's Corner - Pipe Material - PVC																	
1.25"	72	LF	2004	50	2054	15	0%	100%	PVC	50	$25	$1,822					
2"	60	LF	2004	50	2054	15	0%	100%	PVC	50	$28	$1,656					
6"	256	LF	2004	50	2054	15	0%	100%	PVC	50	$37	$9,472					
FIRE HYDRANTS																	
Fire Hydrants	600	Each	1935	40	2015	10	26%	74%	Same as existing	25	$3,207	$1,923,900			2040		
Fire Hydrants	122	Each	1935	40	2014	10	0%	100%	Same as existing	25	$2,915	$355,630			2039		
Fire Hydrants	83	Each	1958	40	2014	10	0%	100%	Same as existing	25	$2,915	$241,945			2039		
Fire Hydrants	14	Each	1997	40	2022	10	0%	100%	Same as existing	25	$2,915	$40,810			2047		
Fire Hydrants	1	Each	1990	40	2015	10	0%	100%	Same as existing	25	$2,915	$2,915			2040		
Fire Hydrants	2	Each	2004	40	2029	10	0%	100%	Same as existing	25	$2,915	$5,830			2054		
Fire Hydrants	54	Each	2005	40	2030	10	0%	100%	Same as existing	25	$2,915	$157,410			2055		
Operation & Maintenance Building	1	ea		75	2012		0%	100%	Same as existing	75	$425,000	$425,000					
Vehicles/Equipment					2012				Same as existing	7		$180,000			2019	2026	2033
Water Lab Equipment + Backhoe					2012				Same as existing	10		$117,300			2022	2032	2042
Tools, and Furniture					2012				Same as existing	15		$85,600			2027	2042	2057
Admin Equipment, Power Equipment					2012				Same as existing	5		$58,350			2017	2022	2027

Table 10. RR 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2012 1	2013 2	2014 3	2015 4	2016 5	2017 6	2018 7	2019 8	2020 9	2021 10	2022 11	2023 12	2024 13	2025 14
RAW WATER SOURCES														
McCracken Spring Intake	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Otter Creek PS - 16"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Otter Creek PS (Facility No. 9213) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Intake /Mechanical Screen	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump Controls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 4 - 1,200 gpm, 150 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 9 - 2,100 gpm, 230 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 10 - 2,100 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Emergency Generator - 350 KW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Central WTP - 16-inch	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Central WTP (Facility No 1205) - 3.5 MGD	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Central WTP (Facility No. 1205) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Chemical Feed Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clarifier - 3.5 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Multi-Media Filters - 1 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Filter Back Wash Tank - 150,000 gallons	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clear Well No. 1 - 0.5 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clear Well No. 2 - 2 MG - 1945	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Central WTP High Lift														
Pump No. 1 & Controls - 4,850 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 2 & Controls - 1,000 gpm, 70 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 3 & Controls - 1,400 gpm, 60 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Filter Back Wash Pump & Controls - 5,400 gpm	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Emergency Generator - 280 KW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
West Point Well Field														
Well No. 1, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0	$0
Well No. 2, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 3, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 5, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 6, Pump/Controls - 500 gpm, 75 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$46,575
Well No. 7, Pump/Controls - 750 gpm, 125 HP	$66,125	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 8, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0	$0
Well No. 9, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0	$0
Well No. 10, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0
Well No. 11, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125
Well No. 12A, Pump/Controls - 750 gpm, 125 H	$66,125	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 12B, Pump/Controls - 750 gpm, 125 H	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 13, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$66,125	$0	$0	$0	$0	$0	$0	$0	$0
Well Field Header - 16-inch	$0	$0	$0	$415,800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Muldraugh WTP - 24 inch	$0	$0	$0	$0	$0	$0	$0	$2,867,040	$0	$0	$0	$0	$0	$0
Muldraugh WTP (Facility No. 3009) - 7.0 MGD	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Muldraugh WTP (Facility No. 3009) - Structure	$0	$0	$0	$0	$1,387,120	$0	$0	$0	$0	$0	$0	$0	$0	$0
Chemical Feed Systems (value included in WTF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clarifier No. 1 - 5.0 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clarifier No. 2 - 2.0 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Multi-Media Filters - 1 MGD	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2026 15	2027 16	2028 17	2029 18	2030 19	2031 20	2032 21	2033 22	2034 23	2035 24	2036 25	2037 26	2038 27	2039 28
RAW WATER SOURCES														
McCracken Spring Intake	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Otter Creek PS - 16"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Otter Creek PS (Facility No. 9213) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Intake /Mechanical Screen	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump Controls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 4 - 1,200 gpm, 150 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 9 - 2,100 gpm, 230 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 10 - 2,100 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Emergency Generator - 350 KW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Central WTP - 16-inch	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Central WTP (Facility No 1205) - 3.5 MGD	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Central WTP (Facility No. 1205) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Chemical Feed Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clarifier - 3.5 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Multi-Media Filters - 1 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Filter Back Wash Tank - 150,000 gallons	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clear Well No. 1 - 0.5 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clear Well No. 2 - 2 MG - 1945	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Central WTP High Lift														
Pump No. 1 & Controls - 4,850 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 2 & Controls - 1,000 gpm, 70 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 3 & Controls - 1,400 gpm, 60 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Filter Back Wash Pump & Controls - 5,400 gpm	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Emergency Generator - 280 KW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
West Point Well Field														
Well No. 1, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 2, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$66,125	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 3, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$66,125	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 5, Pump/Controls - 750 gpm, 125 HP	$0	$66,125	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 6, Pump/Controls - 500 gpm, 75 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 7, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0	$0
Well No. 8, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 9, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 10, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 11, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 12A, Pump/Controls - 750 gpm, 125 H	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0	$0
Well No. 12B, Pump/Controls - 750 gpm, 125 H	$0	$0	$66,125	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 13, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well Field Header - 16-inch	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Muldraugh WTP - 24 inch	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Muldraugh WTP (Facility No. 3009) - 7.0 MGD	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Muldraugh WTP (Facility No. 3009) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Chemical Feed Systems (value included in WTF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clarifier No. 1 - 5.0 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clarifier No. 2 - 2.0 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Multi-Media Filters - 1 MGD	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2040 29	2041 30	2042 31	2043 32	2044 33	2045 34	2046 35	2047 36	2048 37	2049 38	2050 39	2051 40	2052 41	2053 42
RAW WATER SOURCES														
McCracken Spring Intake	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Otter Creek PS - 16"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Otter Creek PS (Facility No. 9213) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Intake /Mechanical Screen	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump Controls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 4 - 1,200 gpm, 150 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 9 - 2,100 gpm, 230 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 10 - 2,100 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Emergency Generator - 350 KW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Central WTP - 16-inch	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Central WTP (Facility No 1205) - 3.5 MGD	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Central WTP (Facility No. 1205) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Chemical Feed Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clarifier - 3.5 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Multi-Media Filters - 1 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Filter Back Wash Tank - 150,000 gallons	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clear Well No. 1 - 0.5 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clear Well No. 2 - 2 MG - 1945	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Central WTP High Lift														
Pump No. 1 & Controls - 4,850 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 2 & Controls - 1,000 gpm, 70 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 3 & Controls - 1,400 gpm, 60 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Filter Back Wash Pump & Controls - 5,400 gpm	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Emergency Generator - 280 KW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
West Point Well Field														
Well No. 1, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0	$0	$0	$0	$0
Well No. 2, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 3, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 5, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0
Well No. 6, Pump/Controls - 500 gpm, 75 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$46,575	$0	$0	$0
Well No. 7, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 8, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0	$0	$0	$0	$0
Well No. 9, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0	$0	$0	$0	$0
Well No. 10, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0	$0	$0	$0
Well No. 11, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125	$0	$0	$0
Well No. 12A, Pump/Controls - 750 gpm, 125 H	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well No. 12B, Pump/Controls - 750 gpm, 125 H	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,125
Well No. 13, Pump/Controls - 750 gpm, 125 HP	$0	$0	$66,125	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Well Field Header - 16-inch	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Muldraugh WTP - 24 inch	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Muldraugh WTP (Facility No. 3009) - 7.0 MGD	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Muldraugh WTP (Facility No. 3009) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Chemical Feed Systems (value included in WTF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clarifier No. 1 - 5.0 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clarifier No. 2 - 2.0 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Multi-Media Filters - 1 MGD	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2054 43	2055 44	2056 45	2057 46	2058 47	2059 48	2060 49	2061 50	Residual Value of R&R in 2011 $	Residual Value of R&R in Nominal $
RAW WATER SOURCES										
McCracken Spring Intake	$0	$0	$0	$0	$0	$0	$0	$0		
CI Line to Otter Creek PS - 16"	$0	$0	$0	$0	$0	$0	$0	$0		
Otter Creek PS (Facility No. 9213) - Structure	$0	$0	$0	$0	$0	$0	$0	$0		
Intake /Mechanical Screen	$0	$0	$0	$0	$0	$0	$0	$0		
Pump Controls	$0	$0	$0	$0	$0	$0	$0	$0		
Pump No. 4 - 1,200 gpm, 150 HP	$0	$0	$0	$0	$0	$0	$0	$0		
Pump No. 9 - 2,100 gpm, 230 HP	$0	$0	$0	$0	$0	$0	$0	$0		
Pump No. 10 - 2,100 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0		
Emergency Generator - 350 KW	$0	$0	$0	$0	$0	$0	$0	$0		
CI Line to Central WTP - 16-inch	$0	$0	$0	$0	$0	$0	$0	$0		
Central WTP (Facility No 1205) - 3.5 MGD	$0	$0	$0	$0	$0	$0	$0	$0		
Central WTP (Facility No. 1205) - Structure	$0	$0	$0	$0	$0	$0	$0	$0		
Chemical Feed Systems	$0	$0	$0	$0	$0	$0	$0	$0		
Clarifier - 3.5 MG	$0	$0	$0	$0	$0	$0	$0	$0		
Multi-Media Filters - 1 MG	$0	$0	$0	$0	$0	$0	$0	$0		
Filter Back Wash Tank - 150,000 gallons	$0	$0	$0	$0	$0	$0	$0	$0		
Clear Well No. 1 - 0.5 MG	$0	$0	$0	$0	$0	$0	$0	$0		
Clear Well No. 2 - 2 MG - 1945	$0	$0	$0	$0	$0	$0	$0	$0		
Central WTP High Lift										
Pump No. 1 & Controls - 4,850 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0		
Pump No. 2 & Controls - 1,000 gpm, 70 HP	$0	$0	$0	$0	$0	$0	$0	$0		
Pump No. 3 & Controls - 1,400 gpm, 60 HP	$0	$0	$0	$0	$0	$0	$0	$0		
Filter Back Wash Pump & Controls - 5,400 gpm	$0	$0	$0	$0	$0	$0	$0	$0		
Emergency Generator - 280 KW	$0	$0	$0	$0	$0	$0	$0	$0		
West Point Well Field										
Well No. 1, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$31,740	$59,328
Well No. 2, Pump/Controls - 750 gpm, 125 HP	$66,125	$0	$0	$0	$0	$0	$0	$0	$47,610	$98,770
Well No. 3, Pump/Controls - 750 gpm, 125 HP	$66,125	$0	$0	$0	$0	$0	$0	$0	$47,610	$98,770
Well No. 5, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$42,320	$84,797
Well No. 6, Pump/Controls - 500 gpm, 75 HP	$0	$0	$0	$0	$0	$0	$0	$0	$26,082	$50,476
Well No. 7, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$2,645	$4,084
Well No. 8, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$31,740	$59,328
Well No. 9, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$31,740	$59,328
Well No. 10, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$34,385	$65,398
Well No. 11, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$37,030	$71,663
Well No. 12A, Pump/Controls - 750 gpm, 125 H	$0	$0	$0	$0	$0	$0	$0	$0	$2,645	$4,084
Well No. 12B, Pump/Controls - 750 gpm, 125 H	$0	$0	$0	$0	$0	$0	$0	$0	$44,965	$91,676
Well No. 13, Pump/Controls - 750 gpm, 125 HP	$0	$0	$0	$0	$0	$0	$0	$0	$15,870	$26,727
Well Field Header - 16-inch	$0	$0	$0	$0	$0	$0	$0	$0	$160,776	$169,379
CI Line to Muldraugh WTP - 24 inch	$0	$0	$0	$0	$0	$0	$0	$0	$458,726	$518,054
Muldraugh WTP (Facility No. 3009) - 7.0 MGD	$0	$0	$0	$0	$0	$0	$0	$0		
Muldraugh WTP (Facility No. 3009) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$546,848	$586,206
Chemical Feed Systems (value included in WTF	$0	$0	$0	$0	$0	$0	$0	$0		
Clarifier No. 1 - 5.0 MG	$0	$0	$0	$0	$0	$0	$0	$0		
Clarifier No. 2 - 2.0 MG	$0	$0	$0	$0	$0	$0	$0	$0		
Multi-Media Filters - 1 MGD	$0	$0	$0	$0	$0	$0	$0	$0		

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3
Renewals and Replacement Costs and Residual Values
(2011 Dollars except where noted)

Item and Size	2012 1	2013 2	2014 3	2015 4	2016 5	2017 6	2018 7	2019 8	2020 9	2021 10	2022 11	2023 12	2024 13	2025 14
Filter Back Wash Tank - 150,000 gallons	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clear Well - 1.0 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sludge Lagoons	$0	$0	$0	$0	$0	$0	$69,000	$0	$0	$0	$0	$0	$0	$0
Muldraugh High Lift (Facility No. 3008) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump A & Controls - 3,500 gpm, 250 HP	$0	$0	$115,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump B & Controls - 4,850 gpm, 350 HP	$0	$0	$154,100	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump C & Controls - 2,200 gpm, 150 HP	$0	$0	$75,900	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Filter Backwash Pump & Controls - 5,400 gpm	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Emergency Generator - 600 KW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$184,000
CI Line to Cantonment Area - 24 inch	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,977,412	$0	$0
Valves														
0.75"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.25"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.25"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
14"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3
Renewals and Replacement Costs and Residual Values
(2011 Dollars except where noted)

Item and Size	2026 15	2027 16	2028 17	2029 18	2030 19	2031 20	2032 21	2033 22	2034 23	2035 24	2036 25	2037 26	2038 27	2039 28
Filter Back Wash Tank - 150,000 gallons	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Clear Well - 1.0 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sludge Lagoons	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$69,000	$0
Muldraugh High Lift (Facility No. 3008) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump A & Controls - 3,500 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$115,000
Pump B & Controls - 4,850 gpm, 350 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$154,100
Pump C & Controls - 2,200 gpm, 150 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$75,900
Filter Backwash Pump & Controls - 5,400 gpm	$0	$0	$0	$0	$0	$0	$0	$120,750	$0	$0	$0	$0	$0	$0
Emergency Generator - 600 KW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Cantonment Area - 24 inch	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Valves														
0.75"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.25"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.25"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
14"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3
Renewals and Replacement Costs and Residual Values
(2011 Dollars except where noted)

Item and Size	2040 29	2041 30	2042 31	2043 32	2044 33	2045 34	2046 35	2047 36	2048 37	2049 38	2050 39	2051 40	2052 41	2053 42
Filter Back Wash Tank - 150,000 gallons	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$747,500
Clear Well - 1.0 MG	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sludge Lagoons	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Muldraugh High Lift (Facility No. 3008) - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$317,400	$0
Pump A & Controls - 3,500 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump B & Controls - 4,850 gpm, 350 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump C & Controls - 2,200 gpm, 150 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Filter Backwash Pump & Controls - 5,400 gpm	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Emergency Generator - 600 KW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CI Line to Cantonment Area - 24 inch	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Valves														
0.75"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.25"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.25"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
14"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2054 43	2055 44	2056 45	2057 46	2058 47	2059 48	2060 49	2061 50	Residual Value of R&R in 2011 $	Residual Value of R&R in Nominal $
Filter Back Wash Tank - 150,000 gallons	$0	$0	$0	$0	$0	$0	$0	$0	$667,767	$1,361,459
Clear Well - 1.0 MG	$0	$0	$0	$0	$0	$0	$0	$0		
Sludge Lagoons	$0	$0	$0	$0	$69,000	$0	$0	$0	$58,650	$130,430
Muldraugh High Lift (Facility No. 3008) -										
Structure	$0	$0	$0	$0	$0	$0	$0	$0	$279,312	$559,659
Pump A & Controls - 3,500 gpm, 250 HP	$0	$0	$0	$0	$0	$0	$0	$0	$13,800	$22,061
Pump B & Controls - 4,850 gpm, 350 HP	$0	$0	$0	$0	$0	$0	$0	$0	$18,492	$29,561
Pump C & Controls - 2,200 gpm, 150 HP	$0	$0	$0	$0	$0	$0	$0	$0	$9,108	$14,560
Filter Backwash Pump & Controls - 5,400 gpm	$0	$0	$0	$0	$120,750	$0	$0	$0	$106,260	$236,308
Emergency Generator - 600 KW	$0	$0	$0	$0	$0	$0	$0	$0	-$5,257	-$6,589
CI Line to Cantonment Area - 24 inch	$0	$0	$0	$0	$0	$0	$0	$0	$954,579	$1,155,623
Valves										
0.75"	$0	$0	$0	$0	$0	$0	$0	$0		
1"	$0	$0	$0	$0	$0	$0	$0	$0		
1.25"	$0	$0	$0	$0	$0	$0	$0	$0		
1.25"	$0	$0	$0	$0	$0	$0	$0	$0		
1.5"	$0	$0	$0	$0	$0	$0	$0	$0		
1.5"	$0	$0	$0	$0	$0	$0	$0	$0		
2"	$0	$0	$0	$0	$0	$0	$0	$0		
2"	$0	$0	$0	$0	$0	$0	$0	$0		
2"	$0	$0	$0	$0	$0	$0	$0	$0		
2"	$0	$0	$0	$0	$0	$0	$0	$0		
2.5"	$0	$0	$0	$0	$0	$0	$0	$0		
3"	$0	$0	$0	$0	$0	$0	$0	$0		
3"	$0	$0	$0	$0	$0	$0	$0	$0		
4"	$0	$0	$0	$0	$0	$0	$0	$0		
4"	$0	$0	$0	$0	$0	$0	$0	$0		
4"	$0	$0	$0	$0	$0	$0	$0	$0		
4"	$0	$0	$0	$0	$0	$0	$0	$0		
5"	$0	$0	$0	$0	$0	$0	$0	$0		
6"	$0	$0	$0	$0	$0	$0	$0	$0		
6"	$0	$0	$0	$0	$0	$0	$0	$0		
6"	$0	$0	$0	$0	$0	$0	$0	$0		
6"	$0	$0	$0	$0	$0	$0	$0	$0		
6"	$0	$0	$0	$0	$0	$0	$0	$0		
8"	$0	$0	$0	$0	$0	$0	$0	$0		
8"	$0	$0	$0	$0	$0	$0	$0	$0		
8"	$0	$0	$0	$0	$0	$0	$0	$0		
8"	$0	$0	$0	$0	$0	$0	$0	$0		
8"	$0	$0	$0	$0	$0	$0	$0	$0		
10"	$0	$0	$0	$0	$0	$0	$0	$0		
10"	$0	$0	$0	$0	$0	$0	$0	$0		
10"	$0	$0	$0	$0	$0	$0	$0	$0		
12"	$0	$0	$0	$0	$0	$0	$0	$0		
12"	$0	$0	$0	$0	$0	$0	$0	$0		
12"	$0	$0	$0	$0	$0	$0	$0	$0		
14"	$0	$0	$0	$0	$0	$0	$0	$0		

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2012 1	2013 2	2014 3	2015 4	2016 5	2017 6	2018 7	2019 8	2020 9	2021 10	2022 11	2023 12	2024 13	2025 14
16"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
24"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Zussman Range (Mt.Eden) - Valves														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Yano Range - Valves														
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pressure Reducing Valves	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Meters														
Meters	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$131,000	$0	$0
Basham's Corner - Meters														
Meters	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Basham's Corner - Back Flow Preventers														
Basham's Corner - Back Flow Preventers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$9,000	$0
Pressure Reducing Station														
Pressure Reducing Station	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0														
SCADA														
SCADA (Pump Controls)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New SCADA System	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0														
Automatic Transfer Switches														
Install switches at Otter creek PS, Central WTP an	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0														
Well Control System														
Well Control System	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Van Voorhis BPS (Facility No. 5898)														
Van Voorhis BPS - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 1 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$0	$0	$0	$3,943	$0	$0	$0	$0	$0
Pump No. 2 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$0	$0	$0	$3,949	$0	$0	$0	$0	$0
Pump No. 3 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$0	$0	$0	$3,949	$0	$0	$0	$0	$0
Fire Protection (Diesel Fueled) - 2,000 gpm, 12	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,550
Elevated Storage Tanks (Steel) Repairs														
Tank No. 1 & cathodic protection - 250,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 2 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 3 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 4 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 5 & cathodic protection - 300,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 6 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 7 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 8 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISTRIBUTION PIPE - CAST IRON (12" and Over Replaced with DIP)														
Unknown Diameter (assume 6")	$0	$0	$3,503	$3,503	$3,503	$3,503	$3,503	$3,503	$3,503	$3,503	$3,503	$3,503	$3,503	$3,503

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2026 15	2027 16	2028 17	2029 18	2030 19	2031 20	2032 21	2033 22	2034 23	2035 24	2036 25	2037 26	2038 27	2039 28
16"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
24"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Zussman Range (Mt.Eden) - Valves														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Yano Range - Valves														
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pressure Reducing Valves	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Meters														
Meters	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Basham's Corner - Meters														
Meters	$0	$0	$0	$5,240	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Basham's Corner - Back Flow Preventers														
Basham's Corner - Back Flow Preventers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pressure Reducing Station														
Pressure Reducing Station 0	$0	$0	$4,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SCADA														
SCADA (Pump Controls)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New SCADA System 0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$330,000	$0	$0
Automatic Transfer Switches														
Install switches at Otter creek PS, Central WTP an 0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$22,500	$0	$0	$0
Well Control System														
Well Control System	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Van Voorhis BPS (Facility No. 5898)														
Van Voorhis BPS - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 1 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 2 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 3 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Fire Protection (Diesel Fueled) - 2,000 gpm, 12	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Elevated Storage Tanks (Steel) Repairs														
Tank No. 1 & cathodic protection - 250,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 2 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 3 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 4 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 5 & cathodic protection - 300,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 6 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 7 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$250,000	$0	$0
Tank No. 8 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$250,000	$0	$0
DISTRIBUTION PIPE - CAST IRON (12" and Ove														
Unknown Diameter (assume 6")	$3,503	$3,503	$3,503	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2040 29	2041 30	2042 31	2043 32	2044 33	2045 34	2046 35	2047 36	2048 37	2049 38	2050 39	2051 40	2052 41	2053 42
16"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
24"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Zussman Range (Mt.Eden) - Valves														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Yano Range - Valves														
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pressure Reducing Valves	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Meters														
Meters	$0	$0	$0	$0	$0	$0	$0	$0	$131,000	$0	$0	$0	$0	$0
Basham's Corner - Meters														
Meters	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Basham's Corner - Back Flow Preventers														
Basham's Corner - Back Flow Preventers	$0	$0	$0	$0	$9,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pressure Reducing Station														
Pressure Reducing Station	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,500
0														
SCADA														
SCADA (Pump Controls)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New SCADA System	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0														
Automatic Transfer Switches														
Install switches at Otter creek PS, Central WTP an	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0														
Well Control System														
Well Control System	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Van Voorhis BPS (Facility No. 5898)														
Van Voorhis BPS - Structure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 1 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$3,943	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 2 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$3,943	$0	$0	$0	$0	$0	$0	$0	$0
Pump No. 3 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$3,943	$0	$0	$0	$0	$0	$0	$0	$0
Fire Protection (Diesel Fueled) - 2,000 gpm, 12	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Elevated Storage Tanks (Steel) Repairs														
Tank No. 1 & cathodic protection - 250,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 2 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 3 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 4 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 5 & cathodic protection - 300,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 6 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 7 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tank No. 8 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISTRIBUTION PIPE - CAST IRON (12" and Ove														
Unknown Diameter (assume 6")	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2054 43	2055 44	2056 45	2057 46	2058 47	2059 48	2060 49	2061 50	Residual Value of R&R in 2011 $	Residual Value of R&R in Nominal $
16"	$0	$0	$0	$0	$0	$0	$0	$0		
20"	$0	$0	$0	$0	$0	$0	$0	$0		
24"	$0	$0	$0	$0	$0	$0	$0	$0		
Zusaman Range (Mt.Eden) - Valves										
1"	$0	$0	$0	$0	$0	$0	$0	$0		
1"	$0	$0	$0	$0	$0	$0	$0	$0		
1.5"	$0	$0	$0	$0	$0	$0	$0	$0		
4"	$0	$0	$0	$0	$0	$0	$0	$0		
4"	$0	$0	$0	$0	$0	$0	$0	$0		
Yano Range - Valves										
2"	$0	$0	$0	$0	$0	$0	$0	$0		
Pressure Reducing Valves	$0	$0	$0	$0	$0	$0	$0	$0		
Meters										
Meters	$0	$0	$0	$0	$0	$0	$0	$0	$62,880	$117,534
Basham's Corner - Meters										
Meters	$5,240	$0	$0	$0	$0	$0	$0	$0	$3,773	$7,827
Basham's Corner - Back Flow Preventers										
Basham's Corner - Back Flow Preventers	$0	$0	$0	$0	$0	$0	$0	$0	$1,350	$2,354
Pressure Reducing Station										
Pressure Reducing Station	$0	$0	$0	$0	$0	$0	$0	$0	$3,060	$6,239
0										
SCADA										
SCADA (Pump Controls)	$0	$0	$0	$0	$0	$0	$0	$0		
New SCADA System	$0	$0	$0	$0	$0	$0	$0	$0	$13,200	$20,381
0										
Automatic Transfer Switches										
Install switches at Otter creek PS, Contral WTP an	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0										
Well Control System										
Well Control System	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Van Voorhis BPS (Facility No. 5898)										
Van Voorhis BPS - Structure	$0	$0	$0	$0	$0	$0	$0	$0		
Pump No. 1 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$0	$0	$0	$1,419	$2,519
Pump No. 2 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$0	$0	$0	$1,422	$2,522
Pump No. 3 & Pressure Tank - 175 gpm, 10 HP	$0	$0	$0	$0	$0	$0	$0	$0	$1,422	$2,522
Fire Protection (Diesel Fueled) - 2,000 gpm, 12	$0	$7,650	$0	$0	$0	$0	$0	$0	$6,040	$12,750
Elevated Storage Tanks (Steel) Repairs										
Tank No. 1 & cathodic protection - 250,000 gall	$0	$0	$0	$0	$0	$0	$0	$0		
Tank No. 2 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0		
Tank No. 3 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0		
Tank No. 4 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0		
Tank No. 5 & cathodic protection - 300,000 gall	$0	$0	$0	$0	$0	$0	$0	$0		
Tank No. 6 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0		
Tank No. 7 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0		
Tank No. 8 & cathodic protection - 500,000 gall	$0	$0	$0	$0	$0	$0	$0	$0		
DISTRIBUTION PIPE - CAST IRON (12" and Ove										
Unknown Diameter (assume 6")	$0	$0	$0	$0	$0	$0	$0	$0	$10,508	$12,287

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2012 1	2013 2	2014 3	2015 4	2016 5	2017 6	2018 7	2019 8	2020 9	2021 10	2022 11	2023 12	2024 13	2025 14
0.75" (NA - DIP starts at 4" Diameter)	$0	$0	$1,540	$1,540	$1,540	$1,540	$1,540	$1,540	$1,540	$1,540	$1,540	$1,540	$1,540	$1,540
1 " (NA - DIP starts at 4" Diameter)	$0	$0	$5,561	$5,561	$5,561	$5,561	$5,561	$5,561	$5,561	$5,561	$5,561	$5,561	$5,561	$5,561
1.25" (NA - DIP starts at 4" Diameter)	$0	$0	$6,128	$6,128	$6,128	$6,128	$6,128	$6,128	$6,128	$6,128	$6,128	$6,128	$6,128	$6,128
1.5" (NA - DIP starts at 4" Diameter)	$0	$0	$17,741	$17,741	$17,741	$17,741	$17,741	$17,741	$17,741	$17,741	$17,741	$17,741	$17,741	$17,741
2" (NA - DIP starts at 4" Diameter)	$0	$0	$43,369	$43,369	$43,369	$43,369	$43,369	$43,369	$43,369	$43,369	$43,369	$43,369	$43,369	$43,369
2.5" (NA - DIP starts at 4" Diameter)	$0	$0	$7,576	$7,576	$7,576	$7,576	$7,576	$7,576	$7,576	$7,576	$7,576	$7,576	$7,576	$7,576
3" (NA - DIP starts at 4" Diameter)	$0	$0	$12,355	$12,355	$12,355	$12,355	$12,355	$12,355	$12,355	$12,355	$12,355	$12,355	$12,355	$12,355
4"	$0	$0	$21,019	$21,019	$21,019	$21,019	$21,019	$21,019	$21,019	$21,019	$21,019	$21,019	$21,019	$21,019
5" (NA Pipe diameters even numbers - use 6")	$0	$0	$1,011	$1,011	$1,011	$1,011	$1,011	$1,011	$1,011	$1,011	$1,011	$1,011	$1,011	$1,011
6"	$0	$0	$459,576	$459,576	$459,576	$459,576	$459,576	$459,576	$459,576	$459,576	$459,576	$459,576	$459,576	$459,576
8"	$0	$0	$352,377	$352,377	$352,377	$352,377	$352,377	$352,377	$352,377	$352,377	$352,377	$352,377	$352,377	$352,377
8" - HR Center	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$168,458	$168,458	$168,458	$168,458	$168,458	$168,458	$168,458	$168,458	$168,458	$168,458	$168,458	$168,458
12"	$0	$0	$138,200	$138,200	$138,200	$138,200	$138,200	$138,200	$138,200	$138,200	$138,200	$138,200	$138,200	$138,200
14"	$0	$0	$87,211	$87,211	$87,211	$87,211	$87,211	$87,211	$87,211	$87,211	$87,211	$87,211	$87,211	$87,211
16"	$0	$0	$24,043	$24,043	$24,043	$24,043	$24,043	$24,043	$24,043	$24,043	$24,043	$24,043	$24,043	$24,043
24"	$0	$0	$127,424	$127,424	$127,424	$127,424	$127,424	$127,424	$127,424	$127,424	$127,424	$127,424	$127,424	$127,424
DISTRIBUTION PIPE - DUCTILE IRON														
1" (NA - DIP starts at 4" Diameter)	$0	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20	$20
1.25" (NA - DIP starts at 4" Diameter)	$0	$830	$830	$830	$830	$830	$830	$830	$830	$830	$830	$830	$830	$830
1.5" (NA - DIP starts at 4" Diameter)	$0	$527	$527	$527	$527	$527	$527	$527	$527	$527	$527	$527	$527	$527
2" (NA - DIP starts at 4" Diameter)	$0	$1,464	$1,464	$1,464	$1,464	$1,464	$1,464	$1,464	$1,464	$1,464	$1,464	$1,464	$1,464	$1,464
3" (NA - DIP starts at 4" Diameter)	$0	$149	$149	$149	$149	$149	$149	$149	$149	$149	$149	$149	$149	$149
6"	$0	$5,098	$5,098	$5,098	$5,098	$5,098	$5,098	$5,098	$5,098	$5,098	$5,098	$5,098	$5,098	$5,098
8"	$0	$3,655	$3,655	$3,655	$3,655	$3,655	$3,655	$3,655	$3,655	$3,655	$3,655	$3,655	$3,655	$3,655
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$1,646	$1,646	$1,646	$1,646	$1,646	$1,646	$1,646	$1,646	$1,646	$1,646	$1,646	$1,646	$1,646
12"	$0	$354	$354	$354	$354	$354	$354	$354	$354	$354	$354	$354	$354	$354
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
14"	$0	$86	$86	$86	$86	$86	$86	$86	$86	$86	$86	$86	$86	$86
DISTRIBUTION PIPE - TRANSITE (Replaced with C-900/PVC sch 80)														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISTRIBUTION PIPE - PVC (Replaced with C-900/PVC sch 80)														
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2026 15	2027 16	2028 17	2029 18	2030 19	2031 20	2032 21	2033 22	2034 23	2035 24	2036 25	2037 26	2038 27	2039 28
0.75" (NA - DIP starts at 4" Diameter)	$1,540	$1,540	$1,540	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1 " (NA - DIP starts at 4" Diameter)	$5,561	$5,561	$5,561	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.25" (NA - DIP starts at 4" Diameter)	$6,128	$6,128	$6,128	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5" (NA - DIP starts at 4" Diameter)	$17,741	$17,741	$17,741	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2" (NA - DIP starts at 4" Diameter)	$43,369	$43,369	$43,369	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.5" (NA - DIP starts at 4" Diameter)	$7,576	$7,576	$7,576	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3" (NA - DIP starts at 4" Diameter)	$12,355	$12,355	$12,355	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$21,019	$21,019	$21,019	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5" (NA Pipe diameters even numbers - use 6")	$1,011	$1,011	$1,011	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$459,576	$459,576	$459,576	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$352,377	$352,377	$352,377	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8" - HR Center	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$168,458	$168,458	$168,458	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$138,200	$138,200	$138,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
14"	$87,211	$87,211	$87,211	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16"	$24,043	$24,043	$24,043	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
24"	$127,424	$127,424	$127,424	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISTRIBUTION PIPE - DUCTILE IRON														
1" (NA - DIP starts at 4" Diameter)	$20	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.25" (NA - DIP starts at 4" Diameter)	$830	$830	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5" (NA - DIP starts at 4" Diameter)	$527	$527	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2" (NA - DIP starts at 4" Diameter)	$1,464	$1,464	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3" (NA - DIP starts at 4" Diameter)	$149	$149	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$5,098	$5,098	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$3,655	$3,655	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$1,646	$1,646	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$354	$354	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
14"	$86	$86	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISTRIBUTION PIPE - TRANSITE (Replaced wit														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISTRIBUTION PIPE - PVC (Replaced with C-90														
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2040 29	2041 30	2042 31	2043 32	2044 33	2045 34	2046 35	2047 36	2048 37	2049 38	2050 39	2051 40	2052 41	2053 42
0.75" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1 " (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.25" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.5" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5" (NA Pipe diameters even numbers - use 6")	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8" - HR Center	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
14"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
24"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISTRIBUTION PIPE - DUCTILE IRON														
1" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.25" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$45,303	$45,303	$45,303	$45,303	$45,303	$45,303	$45,303	$45,303	$45,303	$45,303
14"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISTRIBUTION PIPE - TRANSITE (Replaced wit														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISTRIBUTION PIPE - PVC (Replaced with C-90														
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$44	$44	$44	$44	$44	$44	$44
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2054 43	2055 44	2056 45	2057 46	2058 47	2059 48	2060 49	2061 50	Residual Value of R&R in 2011 $	Residual Value of R&R in Nominal $
0.75" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$4,620	$5,402
1 " (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$16,683	$19,506
1.25" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$18,383	$21,495
1.5" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$53,222	$62,231
2" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$130,108	$152,131
2.5" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$22,729	$26,576
3" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$37,066	$43,339
4"	$0	$0	$0	$0	$0	$0	$0	$0	$63,056	$73,729
5" (NA Pipe diameters even numbers - use 6")	$0	$0	$0	$0	$0	$0	$0	$0	$3,034	$3,548
6"	$0	$0	$0	$0	$0	$0	$0	$0	$1,378,729	$1,612,098
8"	$0	$0	$0	$0	$0	$0	$0	$0	$1,057,132	$1,236,067
8" - HR Center	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$505,373	$590,914
12"	$0	$0	$0	$0	$0	$0	$0	$0	$414,599	$484,776
14"	$0	$0	$0	$0	$0	$0	$0	$0	$261,632	$305,917
16"	$0	$0	$0	$0	$0	$0	$0	$0	$72,128	$84,337
24"	$0	$0	$0	$0	$0	$0	$0	$0	$382,272	$446,977
DISTRIBUTION PIPE - DUCTILE IRON										
1" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$54	$63
1.25" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$2,242	$2,576
1.5" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$1,422	$1,634
2" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$3,952	$4,542
3" (NA - DIP starts at 4" Diameter)	$0	$0	$0	$0	$0	$0	$0	$0	$401	$461
6"	$0	$0	$0	$0	$0	$0	$0	$0	$13,765	$15,818
8"	$0	$0	$0	$0	$0	$0	$0	$0	$9,869	$11,340
8"	$0	$0	$0	$10,432	$10,432	$10,432	$10,432	$10,432	$50,075	$113,312
10"	$0	$0	$0	$0	$0	$0	$0	$0	$4,445	$5,108
12"	$0	$0	$0	$0	$0	$0	$0	$0	$956	$1,098
12"	$45,303	$45,303	$45,303	$45,303	$45,303	$0	$0	$0	$543,634	$1,070,519
14"	$0	$0	$0	$0	$0	$0	$0	$0	$232	$267
DISTRIBUTION PIPE - TRANSITE (Replaced with										
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISTRIBUTION PIPE - PVC (Replaced with C-90										
1.5"	$0	$25,466	$25,466	$25,466	$25,466	$25,466	$25,466	$25,466	$167,564	$372,639
2"	$0	$0	$0	$0	$17,117	$17,117	$17,117	$17,117	$66,413	$151,694
3"	$0	$0	$0	$788	$788	$788	$788	$788	$3,784	$8,563
3"	$0	$0	$0	$0	$1,005	$1,005	$1,005	$1,005	$3,899	$8,901
4"	$44	$44	$44	$44	$44	$44	$44	$44	$568	$1,178
4"	$0	$612	$612	$612	$612	$612	$612	$612	$4,029	$8,960
4"	$0	$0	$0	$812	$812	$812	$812	$812	$3,898	$8,821
4"	$0	$0	$0	$0	$11,675	$11,675	$11,675	$11,675	$45,298	$103,396

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3
Renewals and Replacement Costs and Residual Values
(2011 Dollars except where noted)

Item and Size	2012 1	2013 2	2014 3	2015 4	2016 5	2017 6	2018 7	2019 8	2020 9	2021 10	2022 11	2023 12	2024 13	2025 14
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Zussman Range (Mt.Eden) - Pipe Material - PVC														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Zussman Range (Mt.Eden) - Pipe Material - PE														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Yano Range - Pipe Material - PVC														
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Basham's Corner - Pipe Material - PVC														
1.25"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FIRE HYDRANTS														
Fire Hydrants	$0	$0	$0	$142,369	$142,369	$142,369	$142,369	$142,369	$142,369	$142,369	$142,369	$142,369	$142,369	$0
Fire Hydrants	$0	$0	$35,563	$35,563	$35,563	$35,563	$35,563	$35,563	$35,563	$35,563	$35,563	$35,563	$0	$0
Fire Hydrants	$0	$0	$24,195	$24,195	$24,195	$24,195	$24,195	$24,195	$24,195	$24,195	$24,195	$24,195	$0	$0
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,081	$4,081	$4,081	$4,081
Fire Hydrants	$0	$0	$0	$292	$292	$292	$292	$292	$292	$292	$292	$292	$292	$0
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operation & Maintenance Building	$425,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Vehicles/Equipment	$180,000	$0	$0	$0	$0	$0	$0	$180,000	$0	$0	$0	$0	$0	$0
Water Lab Equipment + Backhoe	$117,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$117,300	$0	$0	$0
Tools, and Furniture	$85,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Admin Equipment, Power Equipment	$56,350	$0	$0	$0	$0	$56,350	$0	$0	$0	$0	$56,350	$0	$0	$0
Subtotal--2011$	$996,500	$13,829	$1,895,677	$2,109,138	$3,080,458	$1,815,813	$1,762,338	$4,740,378	$1,705,179	$1,693,338	$1,871,069	$6,004,205	$1,712,786	$1,799,251
Subtotal--2012$	$1,013,965	$14,071	$1,928,903	$2,146,104	$3,114,098	$1,847,638	$1,793,226	$4,823,461	$1,735,065	$1,723,016	$1,903,862	$6,109,440	$1,742,806	$1,830,786
General and Administrative Overhead--2012$	$44,614	$619	$84,872	$94,429	$137,020	$81,296	$78,902	$212,232	$76,343	$75,813	$83,770	$268,815	$76,683	$80,555
Total Cost--2012$	$1,058,580	$14,691	$2,013,774	$2,240,533	$3,251,118	$1,928,934	$1,872,128	$5,035,693	$1,811,408	$1,798,829	$1,987,632	$6,378,255	$1,819,489	$1,911,341

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3
Renewals and Replacement Costs and Residual Values
(2011 Dollars except where noted)

Item and Size	2026 15	2027 16	2028 17	2029 18	2030 19	2031 20	2032 21	2033 22	2034 23	2035 24	2036 25	2037 26	2038 27	2039 28
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Zussman Range (Mt.Eden) - Pipe Material - PVC														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Zussman Range (Mt.Eden) - Pipe Material - PE														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Yano Range - Pipe Material - PVC														
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Basham's Corner - Pipe Material - PVC														
1.25"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FIRE HYDRANTS														
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$35,563
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$24,195
Fire Hydrants	$4,081	$4,081	$4,081	$4,081	$4,081	$4,081	$0	$0	$0	$0	$0	$0	$0	$0
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Fire Hydrants	$0	$0	$0	$583	$583	$583	$583	$583	$583	$583	$583	$583	$583	$0
Fire Hydrants	$0	$0	$0	$0	$15,741	$15,741	$15,741	$15,741	$15,741	$15,741	$15,741	$15,741	$15,741	$15,741
Operation & Maintenance Building	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Vehicles/Equipment	$180,000	$0	$0	$0	$0	$0	$0	$180,000	$0	$0	$0	$0	$0	$0
Water Lab Equipment + Backhoe	$0	$0	$0	$0	$0	$0	$117,300	$0	$0	$0	$0	$0	$0	$0
Tools, and Furniture	$0	$85,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Admin Equipment, Power Equipment	$0	$56,350	$0	$0	$0	$0	$56,350	$0	$0	$0	$0	$56,350	$0	$0
Subtotal--2011$	$1,675,001	$1,703,076	$1,551,797	$142,154	$20,405	$20,405	$189,974	$317,074	$16,324	$16,324	$38,824	$1,034,924	$85,324	$420,499
Subtotal--2012$	$1,704,358	$1,732,925	$1,578,995	$144,646	$20,763	$20,763	$193,304	$322,631	$16,610	$16,610	$39,504	$1,053,063	$86,819	$427,868
General and Administrative Overhead--2012$	$74,992	$76,249	$69,476	$6,364	$914	$914	$8,505	$14,196	$731	$731	$1,738	$46,335	$3,820	$18,826
Total Cost--2012$	$1,779,350	$1,809,174	$1,648,471	$151,010	$21,676	$21,676	$201,809	$336,827	$17,341	$17,341	$41,243	$1,099,398	$90,640	$446,695

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3

Renewals and Replacement Costs and Residual Values

(2011 Dollars except where noted)

Item and Size	2040 29	2041 30	2042 31	2043 32	2044 33	2045 34	2046 35	2047 36	2048 37	2049 38	2050 39	2051 40	2052 41	2053 42
6"	$0	$0	$0	$0	$22,753	$22,753	$22,753	$22,753	$22,753	$22,753	$22,753	$22,753	$22,753	$22,753
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$18,845
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$25,868	$25,868	$25,868	$25,868	$25,868	$25,868	$25,868	$25,868	$25,868	$25,868
8"	$0	$0	$0	$0	$0	$0	$0	$36,789	$36,789	$36,789	$36,789	$36,789	$36,789	$36,789
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
10"	$0	$0	$0	$0	$6,842	$6,842	$6,842	$6,842	$6,842	$6,842	$6,842	$6,842	$6,842	$6,842
10"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12"	$0	$0	$0	$0	$9,980	$9,980	$9,980	$9,980	$9,980	$9,980	$9,980	$9,980	$9,980	$9,980
Zusman Range (Mt.Eden) - Pipe Material - PVC														
1"	$0	$0	$0	$0	$0	$0	$0	$177	$177	$177	$177	$177	$177	$177
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$617	$617
1.5"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$106	$106
4"	$0	$0	$0	$0	$0	$0	$0	$55,325	$55,325	$55,325	$55,325	$55,325	$55,325	$55,325
Zusman Range (Mt.Eden) - Pipe Material - PE														
1"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,789	$1,789
4"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,058	$25,058
Yano Range - Pipe Material - PVC														
2"	$4,600	$4,600	$4,600	$4,600	$4,600	$4,600	$4,600	$4,600	$4,600	$4,600	$4,600	$4,600	$4,600	$4,600
Basham's Corner - Pipe Material - PVC														
1.25"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6"	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FIRE HYDRANTS														
Fire Hydrants	$192,390	$192,390	$192,390	$192,390	$192,390	$192,390	$192,390	$192,390	$192,390	$192,390	$0	$0	$0	$0
Fire Hydrants	$35,563	$35,563	$35,563	$35,563	$35,563	$35,563	$35,563	$35,563	$35,563	$35,563	$0	$0	$0	$0
Fire Hydrants	$24,195	$24,195	$24,195	$24,195	$24,195	$24,195	$24,195	$24,195	$24,195	$24,195	$0	$0	$0	$0
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$4,081	$4,081	$4,081	$4,081	$4,081	$4,081	$4,081
Fire Hydrants	$292	$292	$292	$292	$292	$292	$292	$292	$292	$292	$0	$0	$0	$0
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operation & Maintenance Building	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Vehicles/Equipment	$180,000	$0	$0	$0	$0	$0	$0	$180,000	$0	$0	$0	$0	$0	$0
Water Lab Equipment + Backhoe	$0	$0	$117,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$117,300	$0
Tools, and Furniture	$0	$0	$85,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Admin Equipment, Power Equipment	$0	$0	$56,350	$0	$0	$0	$0	$56,350	$0	$0	$0	$0	$56,350	$0
Subtotal–2011$	$437,039	$257,039	$582,414	$257,039	$376,784	$379,625	$367,784	$700,550	$793,575	$470,567	$324,461	$211,761	$796,505	$1,076,300
Subtotal–2012$	$444,699	$261,544	$592,622	$261,544	$383,388	$386,279	$374,230	$712,828	$807,484	$478,815	$330,148	$215,472	$810,465	$1,095,164
General and Administrative Overhead--2012$	$19,567	$11,508	$26,075	$11,508	$16,869	$16,996	$16,466	$31,364	$35,529	$21,068	$14,526	$9,481	$35,660	$48,187
Total Cost–2012$	$464,266	$273,052	$618,697	$273,052	$400,257	$403,275	$390,696	$744,193	$843,013	$499,883	$344,674	$224,953	$846,126	$1,143,352

Table 10. R R 50-year Cost Schedule and Residual Values (Table IV-3 in FPR)

Table IV-3
Renewals and Replacement Costs and Residual Values
(2011 Dollars except where noted)

Item and Size	2054 43	2055 44	2056 45	2057 46	2058 47	2059 48	2060 49	2061 50	Residual Value of R&R in 2011 $	Residual Value of R&R in Nominal $
6"	$22,753	$22,753	$22,753	$22,753	$22,753	$0	$0	$0	$273,030	$537,649
6"	$18,845	$18,845	$18,845	$18,845	$18,845	$18,845	$18,845	$18,845	$156,039	$341,034
6"	$0	$7,183	$7,183	$7,183	$7,183	$7,183	$7,183	$7,183	$47,264	$105,108
6"	$0	$0	$0	$15,718	$15,718	$15,718	$15,718	$15,718	$75,444	$170,719
6"	$0	$0	$0	$0	$12,415	$12,415	$12,415	$12,415	$48,169	$109,950
8"	$25,868	$25,868	$25,868	$25,868	$25,868	$0	$0	$0	$310,414	$611,266
8"	$36,789	$36,789	$36,789	$36,789	$36,789	$36,789	$36,789	$36,789	$474,579	$984,542
8"	$0	$47,918	$47,918	$47,918	$47,918	$47,918	$47,918	$47,918	$315,300	$701,187
8"	$0	$0	$0	$5,632	$5,632	$5,632	$5,632	$5,632	$27,032	$61,169
8"	$0	$0	$0	$0	$11,765	$11,765	$11,765	$11,765	$45,647	$104,194
10"	$6,842	$6,842	$6,842	$6,842	$6,842	$0	$0	$0	$82,104	$161,679
10"	$0	$466	$466	$466	$466	$466	$466	$466	$3,069	$6,825
12"	$9,980	$9,980	$9,980	$9,980	$9,980	$0	$0	$0	$119,760	$235,830
Zussman Range (Mt.Eden) - Pipe Material - PVC										
1"	$177	$177	$177	$177	$177	$177	$177	$177	$2,285	$4,740
1"	$617	$617	$617	$617	$617	$617	$617	$617	$5,611	$12,158
1.5"	$106	$106	$106	$106	$106	$106	$106	$106	$963	$2,086
4"	$55,325	$55,325	$55,325	$55,325	$55,325	$55,325	$55,325	$55,325	$713,686	$1,480,583
Zussman Range (Mt.Eden) - Pipe Material - PE										
1"	$1,789	$1,789	$1,789	$1,789	$1,789	$1,789	$1,789	$1,789	$16,277	$35,267
4"	$25,058	$25,058	$25,058	$25,058	$25,058	$25,058	$25,058	$25,058	$228,028	$494,058
Yano Range - Pipe Material - PVC										
2"	$4,600	$0	$0	$0	$0	$0	$0	$0	$49,680	$91,261
Basham's Corner - Pipe Material - PVC										
1.25"	$121	$121	$121	$121	$121	$121	$121	$121	$904	$1,992
2"	$110	$110	$110	$110	$110	$110	$110	$110	$821	$1,811
6"	$631	$631	$631	$631	$631	$631	$631	$631	$4,698	$10,358
FIRE HYDRANTS										
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$654,126	$1,150,539
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$106,689	$184,422
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$72,584	$125,468
Fire Hydrants	$4,081	$4,081	$4,081	$0	$0	$0	$0	$0	$25,302	$50,260
Fire Hydrants	$0	$0	$0	$0	$0	$0	$0	$0	$991	$1,743
Fire Hydrants	$583	$583	$583	$583	$583	$583	$583	$583	$4,011	$8,843
Fire Hydrants	$0	$15,741	$15,741	$15,741	$15,741	$15,741	$15,741	$15,741	$96,965	$215,636
Operation & Maintenance Building	$0	$0	$0	$0	$0	$0	$0	$0	$147,333	$147,333
Vehicles/Equipment	$180,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water Lab Equipment + Backhoe	$0	$0	$0	$0	$0	$0	$0	$0	$11,730	$23,503
Tools, and Furniture	$0	$0	$0	$85,600	$0	$0	$0	$0	$62,773	$137,195
Admin Equipment, Power Equipment	$0	$0	$0	$56,350	$0	$0	$0	$0	$11,270	$24,631
Subtotal--2011$	$577,112	$359,958	$352,408	$523,659	$625,435	$324,940	$324,940	$324,940	$13,312,361	$21,132,941
Subtotal--2012$	$587,227	$366,267	$358,584	$532,837	$636,397	$330,635	$330,635	$330,635		
General and Administrative Overhead--2012$	$25,838	$16,116	$15,778	$23,445	$28,001	$14,548	$14,548	$14,548		
Total Cost--2012$	$613,065	$382,383	$374,362	$556,282	$664,398	$345,183	$345,183	$345,183		

Table 11. R R Cash Flow (Table IV-4 in FPR)

Table IV-4

Renewal and Replacement Cash Flow

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Project	Cash Flow (Current Year $)*								R&R
Contract Year	Costs 2012$	R&R Revenues	Project Costs	Net Revenues	Beginning Balance	Average Balance	Interest Income	Interest Expense	Ending Balance	Revenues 2009$
1	1,058,580	1,412,248	1,058,580	353,668	-	176,834	3,537	-	357,205	1,340,521
2	14,691	1,412,248	14,948	1,397,300	357,205	1,055,855	21,117	-	1,775,622	1,317,430
3	2,013,774	1,412,248	2,084,983	(672,735)	1,775,622	1,439,255	28,785	-	1,131,673	1,294,738
4	2,240,533	1,412,248	2,360,417	(948,169)	1,131,673	657,588	13,152	-	196,656	1,272,436
5	3,251,118	1,399,315	3,485,107	(2,085,792)	196,656	(846,240)	-	46,543	(1,935,679)	1,239,066
6	1,928,934	1,423,841	2,104,004	(680,164)	(1,935,679)	(2,275,761)	-	125,167	(2,741,010)	1,239,066
7	1,872,128	1,448,796	2,077,832	(629,036)	(2,741,010)	(3,055,528)	-	168,054	(3,538,100)	1,239,066
8	5,035,693	1,474,189	5,686,961	(4,212,772)	(3,538,100)	(5,644,486)	-	310,447	(8,061,319)	1,239,066
9	1,811,408	1,500,026	2,081,532	(581,505)	(8,061,319)	(8,352,071)	-	459,364	(9,102,188)	1,239,066
10	1,798,829	1,526,317	2,103,306	(576,989)	(9,102,188)	(9,390,682)	-	516,488	(10,195,665)	1,239,066
11	1,987,632	1,553,069	2,364,801	(811,732)	(10,195,665)	(10,601,531)	-	583,084	(11,590,481)	1,239,066
12	6,378,255	1,580,289	7,721,581	(6,141,292)	(11,590,481)	(14,661,127)	-	806,362	(18,538,135)	1,239,066
13	1,819,489	1,607,986	2,241,298	(633,312)	(18,538,135)	(18,854,791)	-	1,037,013	(20,208,460)	1,239,066
14	1,911,341	1,636,169	2,395,709	(759,540)	(20,208,460)	(20,588,230)	-	1,132,353	(22,100,353)	1,239,066
15	1,779,350	1,664,846	2,269,359	(604,514)	(22,100,353)	(22,402,610)	-	1,232,144	(23,937,010)	1,239,066
16	1,809,174	1,694,025	2,347,838	(653,813)	(23,937,010)	(24,263,916)	-	1,334,515	(25,925,338)	1,239,066
17	1,648,471	1,723,716	2,176,781	(453,065)	(25,925,338)	(26,151,871)	-	1,438,353	(27,816,756)	1,239,066
18	151,010	1,753,927	202,901	1,551,026	(27,816,756)	(27,041,243)	-	1,487,268	(27,752,999)	1,239,066
19	21,676	1,784,668	29,635	1,755,033	(27,752,999)	(26,875,482)	-	1,478,152	(27,476,118)	1,239,066
20	21,676	1,815,947	30,155	1,785,793	(27,476,118)	(26,583,221)	-	1,462,077	(27,152,402)	1,239,066
21	201,809	1,847,775	285,665	1,562,110	(27,152,402)	(26,371,347)	-	1,450,424	(27,040,716)	1,239,066
22	336,827	1,880,161	485,143	1,395,018	(27,040,716)	(26,343,208)	-	1,448,876	(27,094,575)	1,239,066
23	17,341	1,913,114	25,415	1,887,699	(27,094,575)	(26,150,726)	-	1,438,290	(26,645,166)	1,239,066
24	17,341	1,946,645	25,860	1,920,785	(26,645,166)	(25,884,773)	-	1,412,663	(26,137,044)	1,239,066
25	41,243	1,980,763	62,582	1,918,181	(26,137,044)	(25,177,953)	-	1,384,787	(25,603,650)	1,239,066
26	1,099,398	2,015,479	1,697,466	318,014	(25,603,650)	(25,444,643)	-	1,399,455	(26,685,092)	1,239,066
27	90,640	2,050,804	142,400	1,908,404	(26,685,092)	(25,730,890)	-	1,415,199	(26,191,886)	1,239,066
28	446,695	2,086,748	714,083	1,372,665	(26,191,886)	(25,505,554)	-	1,402,805	(26,222,027)	1,239,066
29	464,266	2,123,322	755,180	1,368,142	(26,222,027)	(25,537,955)	-	1,404,588	(26,258,472)	1,239,066
30	273,052	2,160,537	451,934	1,708,603	(26,258,472)	(25,404,170)	-	1,397,229	(25,947,098)	1,239,066
31	618,697	2,198,404	1,041,966	1,156,438	(25,947,098)	(25,368,879)	-	1,395,288	(26,185,948)	1,239,066
32	273,052	2,236,935	467,915	1,769,021	(26,185,948)	(25,301,437)	-	1,391,579	(25,808,506)	1,239,066
33	400,257	2,276,142	697,921	1,578,221	(25,808,506)	(25,019,396)	-	1,376,067	(25,606,352)	1,239,066
34	403,275	2,316,035	715,508	1,600,527	(25,606,352)	(24,806,089)	-	1,364,335	(25,370,160)	1,239,066
35	390,696	2,356,628	705,340	1,651,288	(25,370,160)	(24,544,516)	-	1,349,948	(25,068,820)	1,239,066
36	744,193	2,397,932	1,367,068	1,030,864	(25,068,820)	(24,553,388)	-	1,350,436	(25,388,392)	1,239,066
37	843,013	2,439,960	1,575,741	864,219	(25,388,392)	(24,956,283)	-	1,372,596	(25,896,769)	1,239,066
38	499,883	2,482,724	950,746	1,531,978	(25,896,769)	(25,130,780)	-	1,382,193	(25,746,984)	1,239,066
39	344,674	2,526,239	667,038	1,859,200	(25,746,984)	(24,817,383)	-	1,364,956	(25,252,740)	1,239,066
40	224,953	2,570,515	442,976	2,127,540	(25,252,740)	(24,188,970)	-	1,330,393	(24,455,593)	1,239,066
41	846,126	2,615,568	1,695,387	920,182	(24,455,593)	(23,995,503)	-	1,319,753	(24,855,164)	1,239,066
42	1,143,352	2,661,411	2,331,093	330,318	(24,855,164)	(24,690,006)	-	1,357,950	(25,882,797)	1,239,066
43	613,065	2,708,057	1,271,838	1,436,219	(25,882,797)	(25,164,688)	-	1,384,058	(25,830,636)	1,239,066
44	382,383	2,755,520	807,178	1,948,342	(25,830,636)	(24,856,465)	-	1,367,106	(25,249,400)	1,239,066
45	374,362	2,803,816	804,099	1,999,717	(25,249,400)	(24,249,541)	-	1,333,725	(24,583,407)	1,239,066
46	556,282	2,852,958	1,215,788	1,637,169	(24,583,407)	(23,764,823)	-	1,307,065	(24,253,304)	1,239,066
47	664,398	2,902,961	1,477,534	1,425,427	(24,253,304)	(23,540,590)	-	1,294,732	(24,122,609)	1,239,066
48	345,183	2,953,840	781,095	2,172,745	(24,122,609)	(23,036,237)	-	1,266,993	(23,216,857)	1,239,066
49	345,183	3,005,612	794,785	2,210,826	(23,216,857)	(22,111,444)	-	1,216,129	(22,222,160)	1,239,066
50	345,183	3,058,290	808,715	2,249,575	(22,222,160)	(21,097,373)	-	1,160,356	(21,132,941)	1,239,066

* Includes projected future inflation of 1.752678% percent per year

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE K	Page 1 of 5

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
P00029	See Block 16C	N/A	

6. ISSUED BY	CODE	SP0600	7. ADMINISTERED BY *(If other than Item 6)*	CODE	

DLA ENERGY – UTILITY SERVICES
8725 JOHN J. KINGMAN ROAD, STP 10400
FORT BELVOIR, VA 22060-6222
Buyer/Symbol: Duonna Young/DLA Energy-FEEBB
PHONE: (703) 617-1425 E-MAIL: duonna.young@dla.mil P.P. 8.2

8. NAME AND ADDRESS OF CONTRACTOR *(NO., street city, county, State and ZIP Code)*		9a. AMENDMENT OF SOLICITATION NO.
Hardin County Water District No. 1 1400 Rogersville Road Radcliff, KY 40160-9343 Phone: (270) 351-3222 ext. 208 Fax: (270) 352-3055 POC : Jim Bruce, General Manager DUNS # 130402811 CAGE #316V9		9b. DATED *(SEE ITEM 11)*
	X	10a. MODIFICATION OF CONTRACT/ORDER NO. **SP0600-11-C-8271**
		10b. DATED *(SEE ITEM 13)* 30 September 2011

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[ ]The above numbered solicitation is amended as set forth in Item 14.
The hour and date specified for receipt of Offers [ ] is extended, [ ] is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copy of the amendment;(b) By acknowledging receipt of this amendment on each copy of the offer submitted; or(c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. **FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.** If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF:
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.243-1 ALT 1 Changes--Fixed Price
	D. OTHER *(Specify type of modification and authority)*

E. **IMPORTANT:** Contractor [] is not, [X] is required to sign this document and return __1__ copies to the issuing office

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation contract subject matter where feasible.)*

Fort Knox, Kentucky – Utility Privatization Contract
Potable Water Utility System

See Additional Pages for Further Details.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME OF CONTRACTING OFFICER	
JIM BRUCE, GENERAL MANAGER		**CARL SILVERSTONE**	
15B. NAME OF CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
BY Jim Bruce *(Signature of person authorized to sign)*	10-AUG-2016	BY Carl Silverstone *(Signature of Contracting Officer)*	August 10, 2016

NSN 7540-01-152-8070
PREVIOUS EDITION UNUSABLE

STANDARD FORM 30 (REV 10-83)
Prescribed by GSA
FAR (48 CFR) 52.243

A. The purpose of this modification is to:

1) Update and phase out Section B.5 - Initial System Deficiency Corrections Charges – Schedule 2, to account for the modified ISDC schedule. Effective January 31, 2017, Section B.5 Initial System Deficiency Corrections Charges – Schedule 2 will be closed out in its entirety.

2) Establish Section B.6 – Capital Improvement Projects, to contractually accept the Water Quality and Capital Improvement Projects (CIP) submitted by Hardin County Water District 1 (HCWD1) dated June 1, 2016. HCWD1 proposed to modify the list of currently approved and funded ISDCs in accordance with section C.11.2.5 of its Utility Privatization (UP) contract with the Government and add new Capital Improvement Projects (CIPs) that are in better interest of the installation and government.

3) Funding in the amount of $12,208,104.00 is re-allocated from the ISDCs for use towards the new CIPs totaling $16,456,000.00. The additional unfunded capital cost for the proposed projects is in the amount of $4,247,896.00 and is available in the HCWD1's Fort Knox reserve fund to fully fund the CIPs.

B. As a result of the changes described in Paragraph A - Section B - Supplies or Services and Prices/Costs is revised as follows:

B.5 – Initial System Deficiency Corrections Charges
Schedule B.5 is hereby revised as follows:

FROM:

Project No.	Project Name	Project Completion (Contract Year)	Project Cost
ISDC#1	System Survey/ Assessment and Re-Map the Utility System	1	$121,610
ISDC#2	Leak Detection Survey	1	$49,530
ISDC#3	Hydraulic Model	1	$22,050
ISDC#4	Master Flow Meters at the WTP	1	$24,909
ISDC#5	20-inch Raw Valves	1	$89,319
ISDC#6	New Raw Water Main from the Muldraugh WTP to the 16-inch Raw Water Line Between Otter Creek PS and Central WTP	1	$1,946,203
ISDC#7	Otter Creek Pump Station	1	$117,449
ISDC#8	Muldraugh HLPS	1	$108,234
ISDC#9	Central WTP	1	$64,202
ISDC#10	Central WTP Clear Well	1	$1,825,443
ISDC#11	Fire Hydrants	4	$1,957,620
ISDC#12	THIS ITEM PURPOSEFULLY LEFT BLANK	----	----
ISDC#13	Water Storage Tank No. 5	1	$439,499
ISDC#14	Automatic Transfer Switches	2	$248,658
ISDC#15	Pipe between Otter Creek PS and Central WTP	2	$1,773,822
ISDC#16	Water Storage Tank No. 6	2	$395,981
ISDC#17	Water Storage Tank No. 8	2	$395,981
ISDC#18	Water Storage Tank No. 7	3	$199,980
ISDC#19	SCADA System	3	$335,784
ISDC#20	Distribution System Pipe and Valves	3	$1,113,332
ISDC#21	Distribution System Pipe and Valves	3	$3,034,103
ISDC#22	Distribution System Pipe and Valves	3	$188,402
ISDC#23	Distribution System Pipe and Valves	4	$6,618,777

Project No.	Project Name	Project Completion (Contract Year)	Project Cost
ISDC#24	Water Tank No. 1	3	$24,398
ISDC#25	Water Tank No. 2	3	$24,398
ISDC#26	Water Tank No. 4	3	$45,636
ISDC#27	West Point Well Field	1	$63,891
ISDC#28	Van Voorhis Pump Station	1	$8,776
ISDC#29	Decommission Muldraugh WTP	5	$496,146
ISDC#30	Muldraugh WTP Operation Year 1	1	$999,495
ISDC#31	Muldraugh WTP Operation Year 2	2	$997,297
ISDC#32	Muldraugh WTP Operation Year 3	3	$997,297
ISDC#33	Muldraugh WTP Operation Year 4	4	$997,297
ISDC#34	Muldraugh WTP Operation Year 5	5	$997,297

TO:

Project No.	Year 1 Project Name	Re-allocated Efforts
ISDC#1	System Survey/ Assessment and Re-Map the Utility System	Completed
ISDC#2	Leak Detection Survey	Completed
ISDC#3	Hydraulic Model	Completed
ISDC#4	Master Flow Meters at the WTP	Completed
ISDC#5	20-inch Raw Valves	Completed
ISDC#10	Central WTP Clear Well	Completed
ISDC#11-1	Fire Hydrants Year 1	Completed
ISDC#13	Water Storage Tank No. 5	Completed
ISDC#14	Automatic Transfer Switches	Completed
ISDC#16	Water Storage Tank No. 6	Completed
ISDC#17	Water Storage Tank No. 8	Completed
ISDC#19	SCADA System	Completed
ISDC#22	Distribution Pipe and Valves (4,200-LF at new HRC)	Completed
ISDC#30	Muldraugh WTP Operation Year 1	Completed

Project No.	Year 2 Project Name	Re-allocated Efforts
ISDC#7	Otter Creek Pump Station	Completed
ISDC#11-2	Fire Hydrants Year 2	Completed
ISDC#27	West Point Well Field	Completed
ISDC#28	Van Voorhis Pump Station	Completed
ISDC#31	Muldraugh WTP Operation Year 2	Completed

Project No.	Year 3 Project Name	Re-allocated Efforts
ISDC#32	Muldraugh WTP Operation Year 3	Completed

Project No.	Year 4 Project Name	Re-allocated Efforts
ISDC#23-4	Distribution Pipe and Valves (136,000-LF of CI pipe - no specific areas) - Year 4	Completed
ISDC#33	Muldraugh WTP Operation Year 4	Completed

Project No.	Year 5 Project Name	Re-allocated Efforts
ISDC#29	Decommission Muldraugh WTP	Completed
ISDC#34	Muldraugh WTP Operation Year 5	Completed

B.6 – Capital Improvement Projects
Schedule B.6 is hereby established as follows:

Project No.	Year 6 – 10 Project Name	CIP Totals
1	Muldraugh WTP Improvements	$4,845,000.00
2	1.5 MG Old Ironsides Tank	$5,054,000.00
3	1.5 MG Education Center Tank	$5,060,000.00
4	Park Road 14' Main Extension	$290,000.00
5	Automatic Flusher Installed in Dietz Area	$13,000.00
6	Line Improvement - Gold Vault Area	$163,000.00
7	Line Improvements - North Frazier Area	$30,000.00
8	Line Improvements - 7th Armon Division Cut off Road	$143,000.00
9	Decommission Central WTP and Large Diameter Mains	$322,000.00
10	Installation of Check Valves New Education Center Tank	$70,000.00
11	Remove Frazier Tank	$76,000.00
12	Remove Van Voorhis Tank	$60,000.00
13	Remove Prichard Tank	$76,000.00

14	Automatic Flusher Installed in Dietz Area	$13,000.00
15	Automatic Flusher Installed in Prichard Area	$13,000.00
16	Remove HRC Tank	$76,000.00
17	Remove Fort Knox High School Tank	$76,000.00
18	Remove Old Ironside Tank	$76,000.00
	Total:	**$16,456,000.00**

C. Section G - Contract Administration Data
G.6 Accounting and Appropriation Data

No additional funding is required for this modification. HCWD1 proposed to modify contract SP0600-11-C-8271 by removing ISDC #'s: 8, 9, 20, 21-2, 21-3, 11-3, 18, 24, 25, 26, 11-4, 15, 6, 11-5, 23-5, and 35 from the list of currently approved and funded ISDCs in accordance with section C.11.2.5 of its Utility Privatization (UP) contract with the Government. HCWD1 proposed to re-allocate the funding to pay towards the new government accepted CIPs. The ISDC removal resulted in a credit of $12,208,104.00 while the new approved CIPs totaled $16,456,000.00. The additional unfunded capital cost for the proposed projects in the amount of $4,247,896.00 has been verified as available for completion of the CIPs in its entirety using the HCWD1's Fort Knox Water Fund Reserve. The CIPs are hereby fully funded.

The Contracting Officer agrees with the proposed funding re-allocation after a review of HCWD1's FPR because it is consistent with the framework of the contract. Volume IV of the FPR, on page IV-36, provides HCWD1 the discretion to manage deviations and maintain a separate cash balance in reserves understanding that revenues will be spent only on projects that exclusively benefit the government.

D. The total amount obligated remains unchanged at $38,248,924.06.

E. The total value of the contract remains unchanged at $250,530,429.46.

F. All other Terms and Conditions shall remain unchanged and in full force and effect.

End of Modification

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, US ARMY GARRISON COMMAND, FORT KNOX
481 GOLD VAULT RD
FORT KNOX, KENTUCKY 40121-5182

DPW-OMD

22 February 2019

MEMORANDUM FOR

Gwen R. Pinson, Executive Director
Kentucky Public Service Commission
Address: P.O. Box 615
211 Sower Boulevard
Frankfort, Kentucky 40602-0615

SUBJECT: Fort Knox ISDC Projects

1. Hardin County Water District No. 1 is the Utility Privatization (UP) Contractor for the Fort Knox Water System.

2. Fort Knox is in agreement with these projects and would like to start construction immediately. These projects have been funded by the Government for the benefit of the installation, the soldiers, and their families.

3. Point of contact for this memorandum is Kevin N. Addison, 502-624-5436, kevin.n.addison2.civ@mail.mil

ADDISON.KEVIN.N.1230604726
Digitally signed by ADDISON.KEVIN.N.1230604726
Date: 2019.02.22 14:18:51 -05'00'

Kevin N. Addison
Contractor's Officer Representative (COR)
Directorate of Public Works
Operations and Maintenance Division
Fort Knox, KY

PROPOSED PROJECTS AS A PERCENTAGE OF NET UTILITY PLANT				
Project No.	**Project Description**	**Estimated Cost**	**Compared to Net Water Utility Plant**	**Compared to Total Net Utility Plant**
1	Muldraugh WTP Improvements	$4,845,000	9.07%	4.93%
2	1.5 MG Old Ironsides Tank	$5,054,000	9.47%	5.14%
3	1.5 MG Education Center Tank	$5,060,000	9.48%	5.15%
4	Park Road 14' Main Extension	$ 290,000	0.54%	0.30%
5	Automatic Flusher Installed in Dietz Area	$ 13,000	0.02%	0.01%
~~6~~	~~Line Improvement – Gold Vault Area~~	~~$ 163,000~~	~~0.31%~~	~~0.17%~~
7	Line Improvements – North Frazier Area	$ 30,000	0.06%	0.03%
8	Line Improvements – 7th Armor Division Cut Off Road	$ 143,000	0.27%	0.15%
9	Decommission Central WTP and Large Diameter Mains	$ 322,000	0.60%	0.33%
10	Installation of Check Valves New Education Center Tanks	$ 70,000	0.13%	0.07%
11	Remove Frazier Tank	$ 76,000	0.14%	0.08%
12	Remove Van Voorhis Tank	$ 60,000	0.11%	0.06%
13	Remove Prichard Tank	$ 76,000	0.14%	0.08%
14	Automatic Flusher Installed in Dietz Area	$ 13,000	0.02%	0.01%
15	Automatic Flusher Installed in Prichard Area	$ 13,000	0.02%	0.01%
16	Remove HRC Tank	$ 76,000	0.14%	0.08%
17	Remove Fort Knox High School Tank	$ 76,000	0.14%	0.08%
18	Remove Old Ironside Tank	$ 76,000	0.14%	0.08%

No. 6 - Deleted per DLAE Request