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COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF NORTHERN)
KENTUCKY WATER DISTRICT (A) FOR)
AN ADJUSTMENT OF RATES; (B))
A CERTIFICATE OF CONVENIENCE) Case No. 2005-00148
AND NECESSITY FOR IMPROVEMENTS)
TO WATER FACILITIES IF NECESSARY)
AND (C) ISSUANCE OF BONDS)

PREFILED TESTIMONY OF C. RONALD LOVAN, P.E.

Q.1 State your name and address.

A. My name is C. Ronald Lovan, 100 Aqua Drive, Cold Spring, Kentucky.

Q.2 What is your position with Northern Kentucky Water District?

A. I am President/CEO of the District. I was appointed to this position on January 31, 2001.

Q. 3 Briefly, what is your professional experience and background?

A. I am currently President/CEO for the District. I have experience in all aspects of the water and wastewater field including management, operation, design and regulatory affairs. I earned both a Bachelor of Science and a Masters of Science in Civil Engineering from the University of Kentucky. I am a licensed Professional Engineer in Kentucky and a registered engineer in the state of Colorado. Previously, I spent 15 years as General Manager of a water/wastewater utility serving a large suburb of Denver, Colorado. Prior to that, I spent 11 years

in the consulting engineering business in Lexington. I began my career with the Kentucky Water Pollution Control Commission.

Q. 4 Describe the District's operations.

A. Northern Kentucky Water District serves retail customers in Campbell and Kenton Counties, and part of Boone County, and sells water at wholesale to non-affiliated water distribution systems in Pendleton, Grant, and Boone Counties. NKWD's current customer base is just over 78,000 retail accounts and three wholesale customers. The total population base served by the District is approximately 300,000 people. Northern owns and operates three water treatment plants with a total capacity of approximately 64 million gallons per day. The District's net plant is approximately \$207,000,000.

Q.5 What is the purpose of this application?

A. The District has a number of capital construction projects that need approval. Those projects are more specifically discussed in Richard Harrison's testimony. To finance those projects the District needs to issue bonds. The amount and costs of those bonds is described by Mr. Ross in his testimony. Additionally, there are other pro forma adjustments to reflect actual test year expenses and revenues, which are reflected in the testimony of Mr. Barrow and Ms. Howe. As a result of the additional financing and the pro forma adjustments, our customers' rates will have to be increased. Finally, we have made a number of housekeeping changes to our tariffs to make them more understandable, as well as changes to a few to reflect current Commission policy or changes in District policy. Those changes are discussed by Mr. Barrow and Mr. Harrison.

Q. 6. Has the District proposed any other changes to its rates?

A. Yes. The District has been concerned for some time about the rate making process. Due to the growth of the District and the ongoing need for repairs and replacements to the water transmission mains, distribution mains, plants, and other infrastructure, the District has a significant capital budget. That budget covers extensions of facilities to new customers, but also includes significant amounts for repairs and replacements of existing facilities. Because we continue to have a need for repairs and replacements that exceed our available funds, we are forced to either issue

short term notes, BANS, to fund these needs or file a rate case every year or so to get permanent financing for the projects. Neither is very cost effective.

Additionally, the escalating cost of a rate case is something that our customers should not have to bear if there is an alternative. I believe that a multi-year rate adjustment is an alternative, that will make the rate setting process more cost-effective for our customers.

Q. 7 Could you explain what you mean by a multi-year rate case?

A. Yes. A multi-year rate case is one that includes a mechanism for the District to recoup its actual capital construction costs for several years and moderate adjustments to O&M. We are proposing five in this case. The District has an extensive capital project program that requires constant funding. To avoid a succession of rate cases, the District would like to address the situation with a creative proposal that will provide necessary funds and at the same time save our customers the cost of rate cases.

NKWD's proposal of multi-year filing accomplishes several goals. First, rate cases are cost intensive. There is a great deal of staff time and resources consumed by the preparation of the application and the responses to the Commission's and intervener's questions as well as hearing preparation. Additionally, the District must retain the services of consultants. To the extent future adjustments are anticipated, approving a multi-year mechanism could provide a more efficient and cost-effective approach to rate administration.

Second, rate case filings are time intensive for water utility and regulatory management and staff. Approving a multi-year plan increases the strategic stability of all agencies, as their focus can be devoted to executing and monitoring the approved plan rather than gearing up for the next rate case filing. Finally, rate cases typically can be filed no sooner than 18 months after the prior rates were approved. This time is required to allow utility management the opportunity to document known and measurable changes and prepare for the next filing. Approving a multi-year plan could significantly reduce the time between revenue adjustments, which would lower the overall increases required to meet requirements of the utility. By working with the commission to establish a meaningful basis for cost projections, and through utilization of a consistent and practiced method of cost assignment to distribute those costs over time, approving a multi-year strategic plan will provide more organizational stability and allow more cost-effective allocation of everyone's resources.

Q. 8 How will the proposal reduce the District's cost of filing rate case applications?

A. This proposal is intended to lower cost through reduced cost of rate administration, reduced time to implement, increased ability to focus on strategic planning, and increased focus on execution of operations. Also, required revenue increases could be reduced due to potential acceleration in rate implementation and lowered cost.

Q.9 Can you explain how the multi-year rate plan will work?

A. Very generally, the District has asked for a base rate for the first year after the approval of the rate adjustment in this case. The average increase in our customers' rates for that year is projected to be approximately 9.4%. In order to keep rates as low as possible, we are proposing to issue a combination of long and short term debt in the subsequent years, which we project will require only annual increases of 4.2% in the second year, 6.0% in the third year, 5% in the fourth year and 3.9% in the final year of the proposal. By annualizing these increases, the customers will see a fairly small, relatively stable increase each year, rather than a larger increase every two to three years.

In subsequent years after the initial rate case, the District will file a true up report that will show the amount of capital actually spent on projects in that prior year and the amount of additional rates needed to fund the next year's projects. The details of the proposal are contained in Ms. Howe's testimony and she can give a more complete explanation of the mechanism.

Q. 10 Is there a benefit to the Commission to this type of proposal?

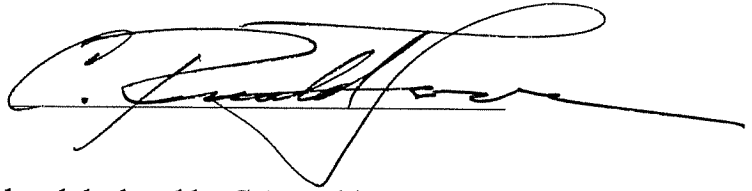
A. A more focused annual review with simplified annual rate adjustments could benefit the District through more economical use of staff time, reduced cost of experts and more timely receipt of financing for projects. The Commission saves its staff time and resources and more importantly our customers save in the form of lower rates that reflect the reduced cost of rate filings. This type of proposal could benefit our Customers, the District, and the Commission.

Q.11 Would the District continue to file applications for certificates of convenience and necessity for its proposed projects?

A. Yes. Any project that would require a certificate would be submitted to the Commission with all of the required information. Those projects would be treated just as they are now. We have provided in this case a list of 2005 projects and a five year project list. We expect to work our way through that list and as projects are funded and completed, move to the next project. The Commission will always be aware of what we are doing based on the project list, the five year plan and the annual review.

Q.12 Does this conclude your testimony?

A. Yes.



This instrument was produced, signed and declared by C. Ronald Lovan, P.E. to be his act and deed the 26 day of May, 2005.


Notary Public

My Commission expires: June 25, 2005



COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter Of:

APPLICATION OF NORTHERN)
KENTUCKY WATER DISTRICT (A) FOR)
AN ADJUSTMENT OF RATES; (B) A)
CERTIFICATE OF CONVENIENCE AND) Case No. 2005-00148
NECESSITY FOR IMPROVEMENTS TO)
WATER FACILITIES IF NECESSARY)
AND (C) ISSUANCE OF BONDS)

PREFILED TESTIMONY OF RONALD BARROW

Q 1 Please state your name and address.

A Ronald Barrow, 100 Aqua Drive, Cold Spring, Kentucky .

Q 2 By whom and in what capacity are you employed?

A. I am currently vice president of finance for the District. Previously, I have had various capacities with the District including acting general manager. Previously, I was manager of the Campbell County Water District until its merger with Northern Kentucky Water District in 1996.

Q 3 What is the purpose of your testimony?

A. As vice president of finance, I am responsible for all accounting and financial information involved in this case and supplied to other witnesses for use in the preparation of the pro-forma balance sheet and income statement and the cost of service study.

Q 4 Did you also prepare a determination of the District=s revenue requirements?

A. Yes. Among other exhibits.

Q 5 Would you explain and briefly describe the exhibits that you have prepared or which have been prepared subject to your supervision?

A. Exhibit C is the statement that the most current annual report has been filed with the

PSC. Exhibit D is a current listing of bonds, notes and other indebtedness. Exhibit F is the chart of accounts used by the District. Exhibit G is the District's most recent depreciation study. Exhibit H is a listing of the software used by the District and its consultants. Exhibit I is the monthly budget and management reports. Exhibit J is the revenue requirement determination and pro-forma adjustments. Exhibit L is the customer notice and the District certification of publication of the notice. Exhibit M is the proposed rate tariffs showing the comparative tariffs, the affect on the customer's monthly bill and the percentage increase on the average bill of each customer class. Exhibit R is the current construction budget with pro-forma adjustments. This was prepared in conjunction with information supplied by the District's staff engineer, Richard Harrison. Finally, Exhibit S is the Affidavit that the information in the application is accurate and complete.

Q 6 Can you briefly summarize the reasons for this application?

A. Yes. The primary issue involves construction projects related to replacement and improvement of our existing infrastructure. As explained in more detail by Richard Harrison, the District is continually expanding its facilities to meet the needs of our customers both as to growth in number of customers and growth in demand for water. We are also faced with increasingly stringent water quality standards which necessitate a number of improvements to our treatment plan and related facilities. These projects require funding in the approximate amount of \$25,000,000 for the year 2005. The total financing needed to cover issuance costs, debt service and pro forma adjustments to operating expenses is approximately \$29,000,000.

Q 7 What is the District's need as far as the financing for the \$25,000,000 of construction projects?

A. The District has submitted a five year construction program of approximately \$74,000,000, which includes approximately \$ 25,000,000 of projects to be completed

or at least begun in this year, 2005. Because the District needs to permanent financing for these projects, as explained by our financial advisor, Terrell Ross, we have included the cost of that financing along with prior Bond Anticipation Notes in this application.

We have also included a list of the projects we anticipate to be constructed over the next five years in order to alert the Commission to the future needs of the system and the need for the District to fund these projects over the next few years. Because of the number of projects and the amount of funding involved, it will be necessary for the District to file a series of rate increases to reflect the financing of these projects.

Q 8 Has the District proposed an alternative to those series of rate case applications?

A. Yes. As Mr. Lovan and Ms. Howe explain, the District would like to get approval for an annual adjustment mechanism of rates to reflect the capital expenses related to projects actually constructed each year. That type of plan would allow the District to finance its projects without a series of rate cases which add to the cost of service and are reflected in increased customer bills.

Q 9 Has the District unified all rates for all of its customer classes?

A. Yes. Now that we have incorporated Newport and Taylor Mill into our system, all customers with the same rate classification are paying the same rates.

Q. 10. What is the status of the depreciation study that the Commission directed the District to undertake?

A. We are in about to complete the depreciation portion of the Asset Management Program. Based on the most recent information from our consultant, it is expected that the depreciation study will be completed by the end of this year.

Q. 11. There are a number of changes to the District's tariffs. Can you explain what you are proposing?

A. Yes, most of the changes are of the housekeeping type. They involve wording

changes to clarify the tariff or to make the tariff consistent with other related tariffs. The most significant change is to the fire protection tariff, which is discussed by Mr. Harrison.

Does that conclude your testimony?

A. Yes.

AFFIDAVIT

COMMONWEALTH OF KENTUCKY

COUNTY OF KENTON

Affiant, Ronald Barrow, after being first sworn, deposes and says that the foregoing prepared testimony is true and correct to the best of his knowledge and belief except as to those matters that are based on information provided to him and as to those he believes to be true and correct.


Ronald Barrow

This instrument was produced, signed and declared by Ronald Barrow to be his act and deed the 23 day of May, 2005.


Notary Public

My Commission expires: June 25, 2006

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter Of:

APPLICATION OF NORTHERN KENTUCKY)
WATER DISTRICT FOR (A) FOR)
AN ADJUSTMENT OF RATES (B) A)
CERTIFICATE OF CONVENIENCE AND) CASE NO.
NECESSITY FOR IMPROVEMENTS TO) 2005-00148
WATER FACILITIES IF NECESSARY)
AND (C) ISSUANCE OF BONDS)

PREFILED TESTIMONY OF RICHARD HARRISON, P.E.

Q 1 Please state your name and business address.

A. Richard Harrison, 100 Aqua Drive, Cold Springs, Kentucky.

Q 2 Where are you employed?

A I am vice president of engineering/distribution for the Northern Kentucky Water District.

Q 3 State your professional education and background.

A I have a Bachelor of Science degree in Civil Engineering from the University of Kentucky and have been responsible for the operation of the Engineering and Distribution Department for the Kenton County Water District from 1997 to the present.

Q 4 Are you a registered engineer in Kentucky?

A. Yes. My state board of registration for professional engineers and land surveyors registration number is 16,203.

Q 5 Generally, what are your duties with the District?

A. I provide general supervision for all construction and design for distribution systems and treatment and hydraulic matters for the District. I am responsible for the construction, maintenance, repairs, replacement and planning for the District as far as the distribution systems of the District.

Q 6 Have you prepared an exhibit which details the projects the District is proposing to finance and construct in this case?

A. Yes. Exhibit O.

Q 7 Could you generally explain the purpose of Exhibit O?

A. This exhibit contains the initial engineer's report explaining the need for a project, its description, its estimated cost, location, map and specifications. There is also included for each project a preliminary cost estimate and source of funds, a description of the facilities and the need for each as well as any permits that may be required for the projects.

Q 8 Can you explain briefly the number of projects and the total amount of projects that the District is requesting in this case?

A. Yes. The District is requesting approximately \$25,000,000 in permanent financing for projects, which are scheduled for the year 2005. Those projects are summarized in Exhibit O.

Q 9 Is the District requesting a Certificate of Convenience and Necessity for these projects?

A. No. The District has already obtained certificates for projects, has filed a separate application for the project or they are ordinary extensions.

Q 10 Have these projects been previously identified to the Commission?

A Yes. In May of 2001, the District sent a five year construction program to the Commission which included these projects.

Q 11 Did that notification to the Commission indicate which projects the District considered to be ordinary extensions and which the District considered to require a certificate?

A. Yes.

Q 12 Have there been any material changes in the project list?

A. No.

Q 13 In addition to the projects contained in Exhibit O, the District has also submitted Exhibit R, which is a five year construction program. Could you explain the

purpose of this exhibit?

A. Yes, the District has an ongoing construction program for extension of new service and repairs and replacements of existing facilities. While the District is requesting \$25,000,000 in permanent financing for the projects listed in Exhibit O, for the next five years there is approximately \$74,000,000 of projects, which will need to be funded and constructed. The purpose of Exhibit R is to inform the Commission of the need for these projects and to put the Commission on notice that over the next several years the District will be filing additional rate cases and requests for approval of these projects as they become due.

Q 14 Why is it necessary for the District to come before the Commission so frequently for rate increases related to this construction?

A Because the District is growing so fast and because it has such a large infrastructure which needs constant maintenance, repairs and upgrades, there is an ongoing need for a substantial amount of funding each year to address those needs. It simply is not possible for current rates to fund the substantial construction budget that is associated with the projects listed in the five year construction budget.

Q. 15. How will the multi-year rate proposal that the District is requesting affect the repair and replacement of facilities?

A. Because we have such a large number of projects that have been identified as being necessary over the next twenty years, we have an ongoing need for funding of those projects. There has been a problem over the years with a lag in the funding of projects through rate increases and the demand on our system to repair or replace facilities. If we could put a mechanism in place that would assure annual funding of these projects and rates to finance the projects, we could have a better planning horizon, make better decisions about the timing of projects and spend more time and money on projects rather than on the next rate case.

16. The District has also revised its fire protection line tariff. Can you explain the reason for that revision?

A. The District has in place approximately 442 meters that are used where a customer requests a fire protection service. Those meters are checked at the same time the water meters are read. For a long time, the District has had a problem with usage being recorded on those detection meters, when no notice of a fire has been reported or where there is no evidence of a fire at the customer's location. As a result of this problem, the District is proposing to continue to use detector meters, but require a customer to install a full-sized master meter if it is determined that the fire protection service is being used for domestic or other uses besides fire protection.

Due to the number of customers that are abusing the detector meters, there is a concern that our other customers are subsidizing the misuse of water through these fire systems. It is not fair for the general customers to pay for water that is being used by these other customers.

As a means to prevent this continuing abuse, we are proposing to charge the customer a rate for water used through the fire protection system, which is not actually needed for fire protection that more accurately reflects the amount of water that could be flowing through the fire line based upon the AWWA M1 Manual equivalent meter ratio for a 6 inch meter as compared to a 5/8 inch meter. The majority of fire lines are 6 inches or larger in diameter. The majority of detector meters are 5/8 inch meters. A multiplier of 21 will be used to convert the District's retail rate to a detector meter rate. 21 is the M1 Manual's equivalent meter ratio for a 6 inch meter as compared to a 5/8 inch meter. Ultimately, the District will require those customers to install a meter if it is determined that a misuse of the service has been persistent.

Q. 17 Does that conclude your testimony?

A. Yes.

AFFIDAVIT

COMMONWEALTH OF KENTUCKY

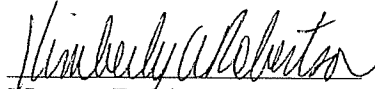
COUNTY OF KENTON

Affiant, Richard Harrison, after being first sworn, deposes and says that the foregoing prepared testimony is true and correct to the best of his knowledge and belief except as to those matters that are based on information provided to him and as to those he believes to be true and correct.



Richard Harrison

This instrument was produced, signed and declared by Richard Harrison to be his act and deed the 19th day of May, 2005.



Notary Public

My Commission expires: June 25, 2005

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter Of:

APPLICATION OF NORTHERN KENTUCKY)
WATER DISTRICT FOR AUTHORITY TO)
ISSUE REVENUES BONDS,)
FOR APPROVAL OF) 2005-00148
FINANCING, FOR APPROVAL OF)
CONSTRUCTION, AND FOR ADJUSTMENT)
IN WATER RATES)

PREFILED TESTIMONY OF TERRELL ROSS

Q 1 Please state your name and address.

A. Terrell Ross, Ross, Sinclair and Associates, 400 Democrat Drive, Frankfort, Kentucky 40601.

Q 2 By whom and in what capacity are you employed?

A I am self-employed as chairman and secretary to Ross, Sinclaire and Associates, Inc. a regional investment banking firm.

Q 3 How long have you held your present position?

A. Fifteen years.

Q 4 Briefly state your professional background.

A I have a BS degree in mathematics with a minor in Chemistry and Physics. In addition, I have approximately 30 graduate hours in business administration and computer science. I am registered with the Securities and Exchange Commission as a registered representative, general securities principal, municipal securities and finance and operations principal.

Q 5 Have you previously testified before the Kentucky Public Service Commission?

A. Yes. Our firm has testified before the Commission in connection with other rate

cases of Northern Kentucky Water District, formerly Kenton County Water District No. 1. Additionally, our firm represents other utility districts whose rates and tariffs are subject to PSC approval.

Q 6 In what way are you associated with the pending case for Northern Kentucky Water District?

A. Our firm has been retained as financial advisor for this case.

Q 7 Did you prepare Exhibit A for this case?

A. Yes.

Q 8 Please explain the purpose of Exhibit A.

A. The exhibit shows the total gross debt service of all bond issues currently outstanding for the District. It also shows the proposed bond debt in connection with this case. The exhibit also shows projected schedules in connection with the bonds currently outstanding, the projected sources and uses of funds required in order to deposit the construction fund, pay for all cost of issuance, deposit into the debt service reserve in accordance with the trust indenture, the interest rates and maturity schedules for the bonds, the average interest rate based on current rates of financing, the total projected annual principal and interest requirements of all the bonds outstanding and the projected series bonds which are to be issued in this case.

Q 9 Are these projections based up on information provided to you by the District?

A. Yes. We were provided a description of the projects, the anticipated cost of the projects and the current outstanding bonds and other indebtedness by the District.

Q 10 Based on your study, what is the principal amount of parity revenue bonds that the

District should issue to cover the cost of financing its current revenue needs?

A Approximately \$29,000,000.

Q 11 Why is the amount of bonds "approximate"?

A Because, the actual cost of issuance, interest rate and other factors will not be known until the bonds are sold. These costs will affect the total amount of the bonds. That is why the District needs approval for an approximate range of bonds, not a specific dollar amount.

Q 12 Does that conclude your testimony?

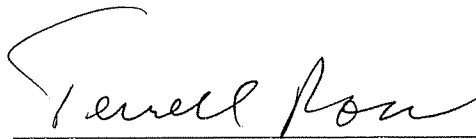
A. Yes.

AFFIDAVIT

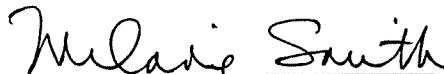
COMMONWEALTH OF KENTUCKY

COUNTY OF KENTON

Affiant, Terrell Ross, after being first sworn, deposes and says that the foregoing prepared testimony is true and correct to the best of his knowledge and belief except as to those matters that are based on information provided to him and as to those he believes to be true and correct.


Terrell Ross

This instrument was produced, signed and declared by Terrell Ross to be his act and deed the 19th day of May, 2005.


Notary Public

My Commission expires: 3/23/08

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter Of:

APPLICATION OF NORTHERN KENTUCKY)
WATER DISTRICT FOR AUTHORITY TO)
ISSUE REVENUES BONDS, FOR)
APPROVAL OF FINANCING,)
FOR APPROVAL OF CONSTRUCTION,)
AND FOR ADJUSTMENT IN WATER RATES)

PREFILED TESTIMONY OF ROGER L. PETERMAN

Q1 Please state your name and address

A. My name is Roger L. Peterman of the firm Peck, Shaffer & Williams LLP, 118 West Fifth Street, Covington, Kentucky 41011.

Q2 What is your affiliation with the Northern Kentucky Water District?

A. Our firm serves as bond counsel for the District and is responsible for the bond resolutions and related matters associated with the issuance of the bonds proposed in this case.

Q3 Did you prepare Exhibit B to the application?

A. Yes

Q4 Explain what Exhibit B is.

A. Exhibit B consists of the general bond resolution of the District which sets out the general terms for all bonds issued by the District. Also included is the proposed series bond resolution authorizing the issuance of water district revenue bonds Series 2006, approving the principal amount of the bond proposed to be issued, the maturities, the redemption provisions, the disposition of the proceeds of those bonds, the terms and conditions of the sale of those bonds and the conditions for their delivery.

Q5 Do you have any further comments?


A. Yes. The proposed series bond resolution remains in preliminary form and is subject to revision based upon the actions of the Commission regarding this matter, as well as market conditions and tax law considerations existing at the time the proposed bonds will be sold.

AFFIDAVIT

COMMONWEALTH OF KENTUCKY

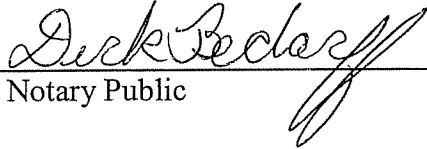
COUNTY OF KENTON

Affiant, Roger L. Peterman, after being first sworn, deposes and states that the foregoing prepared testimony is true and correct to the best of his knowledge and belief except as to those matters that are based on information provided to him and as to those he believes to be true and correct.



Roger L. Peterman

This instrument was produced, signed and declared by Roger L. Peterman to be his act and deed the 23rd day of MAY, 2005.



Notary Public

My Commission expires: 4/23/2006

304051

TESTIMONY OF
PEGGY L. HOWE
BLACK & VEATCH

1 Q. Please state your name and business address.

2 A. Peggy L. Howe, 11401 Lamar, Overland Park, Kansas 66210

3 Q. What is your occupation?

4 A. I am a Director in the firm of Black & Veatch in the Enterprise Management
5 Solutions Division.

6 Q. How long have you been associated with the firm of Black & Veatch?

7 A. I have been with Black & Veatch continuously since 1979.

8 Q. What is your educational background?

9 A. I am a graduate of North Dakota State University with an undergraduate degree in
10 Civil Engineering. I received my Masters of Business Administration from the
11 University of Kansas.

12 Q. Are you registered as a Professional Engineer?

13 A. Yes, I am a registered Professional Engineer in the state of Kansas.

14 Q. What is your professional experience?

15 A. I have been involved in numerous financial consulting, bond feasibility, and
16 capital plan development studies. Projects to which I have been assigned as
17 project manager include projects in Bloomington and Indianapolis, Indiana;
18 Cincinnati, Clermont County, Columbus, and Dayton, Ohio; Louisville, Paducah,
19 and Hopkinsville, Kentucky; Arlington, Texas; St. Joseph, Missouri; and Cairo,
20 Egypt. A more complete listing of my experience record is included in this
21 document, designated as Exhibit Q-1.

1 Q. Please describe the Enterprise Management Solutions Division of Black &
2 Veatch.

3 A. Black & Veatch has specialized in providing financial and management
4 consulting services to public and investor-owned utilities, government agencies
5 and private industry, both domestic and international, since the firm was founded.
6 These services are provided through the Enterprise Management Solutions
7 Division, which employs a full-time staff of about 120, including personnel with
8 undergraduate and advanced degrees in finance, accounting, engineering,
9 economic, business administration, and computer science. Division services
10 include utility cost of service and rate design studies, property inventory and
11 valuation for rate base or other purposes, depreciation expense studies,
12 organization and management studies, financial advisory services, and many other
13 related areas of study. Clients served include water, wastewater, stormwater,
14 electric, natural gas, telephone, and solid waste management utilities; private
15 industry; and governmental agencies. The Division has broad experience in the
16 area of utility rates, including water rates with which we are concerned in this
17 hearing, and in all aspects of utility financial management services. A partial
18 listing of current and recent water and wastewater financial consulting projects
19 completed by the Division is shown in this document designated as Exhibit Q-2.
20 These engagements encompass studies of total utility revenue requirements, cost
21 of service allocations, water rate design and, in many instances, include
22 appearances before regulatory commissions or other governing bodies.

23 Q. Will you please state briefly the nature of your firm's engagement in this matter

1 for the Northern Kentucky Water District (NKWD or the District)?

2 A. NKWD asked our firm to conduct a study of the water utility's cost of water
3 service and rate structure. We were retained to study the utility's costs of
4 providing water service and recommend appropriate cost-based rates. The results
5 of that study are included as Petitioner's Exhibit N and the detailed rate
6 calculation schedules are provided as Appendix C of Exhibit N.

7 Q. Does your firm specialize in water utility cost of service studies?

8 A. Yes our firm specializes in, among other things, water utility cost of service
9 studies, and I have been frequently involved in them.

10 Q. Please describe the purpose of a cost of service study.

11 A. The purpose of a cost of service study is the development of an equitable water
12 rate structure that recovers the cost of providing water service from various
13 customer classes in proportion to the service received.

14 Q. In performing your study in this case, have you become familiar with NKWD's
15 water utility system and its costs?

16 A. Yes.

17 Q. Have you prepared and filed rate cases for NKWD prior to this filing?

18 A. Yes.

19 Q. Does this filing substantially differ from previous filings?

20 A. Yes.

21 Q. What are the primary differences?

22 A. NKWD is requesting a multi-year filing.

23 Q. Why does NKWD require a multi-year filing?

1 A. NKWD has proposed a multi-year filing for several reasons. First, filing rate
2 cases is cost intensive, requiring the services of consultants and outside counsel.
3 To the extent future adjustments are anticipated, approving a multi-year plan
4 could provide a more efficient and effective approach to rate administration.
5 Second, rate case filings are time intensive for water utility management.
6 Approving a multi-year plan increases the strategic stability of the water utility, as
7 its focus can be devoted to executing the approved plan rather than gearing up for
8 the next rate case filing. Finally, rate cases typically can be filed no sooner than
9 18 months after the prior rates were approved. This time is required to allow
10 utility management the opportunity to document known and measurable changes
11 and prepare for the next filing. Approving a multi-year plan could significantly
12 reduce the time between revenue adjustments, which would lower the overall
13 increases required to meet requirements of the utility. By working with the
14 Commission to establish a meaningful basis for cost projections, and through
15 utilization of a consistent and practiced method of cost assignment to distribute
16 those costs over time, approving a multi-year strategic plan will provide more
17 organizational stability and focus on operations over the same period.

18 Q. What precedents exist for multi-year rate filings?

19 A. Within the municipal utility community, multi-year rate periods are very
20 common. A brief survey of Black & Veatch project managers reveals that the
21 average approved rate period for the communities listed below is 4 years. A
22 sample ordinance is provided in Exhibit Q-3.

1

Utility	Number of Years of Approved Rate Increases
Charleston, South Carolina	3
Metropolitan St. Louis District	3
Norfolk, Virginia	\$0.25/1,000 gallons for 3 years and then 3.5% into perpetuity
San Antonio, Texas	3
Dayton, Ohio (Water)	5
Henderson, Nevada	2
New Orleans, Louisiana	4
Fayetteville, Arkansas	5
Lee's Summit, Missouri	5
Montgomery County, Ohio	5
Freeport, Illinois	5
Columbia, Missouri	3
Independence, Missouri	6
Philadelphia, Pennsylvania	3

2

Within the regulatory community, multi-year rate periods are also not without precedent. For example, the State of California's Public Utility Commission (PUC) notes in their Standard Practice U-34-W document, that application of adopted quantities assumption will generally hold true for the "large water utilities, who file for general rate increases on a regular-basis and who have multiple test years." Furthermore, the PUC provides in Appendix A, the Rate Case Plan for Class A Water Utility, General Rate Applications, instructions for Class A utilities to file a rate case petition every three years and provides guidelines for allowable escalation adjustments for the two years following the test year.

11

12

In recent years, the water industry has increased research to address growing regulatory requirements, aging infrastructure needs, and dwindling Federal assistance. The need for long-term capital financing and financial planning to

13

14

1 address infrastructure requirements while reducing impacts to the rate payers is a
2 topic of considerable interest to all utility managers, as evidenced by the
3 American Water Works Association's (AWWA's) recent publication of
4 "Avoiding Rate Shock: Making the Case for Water Rates" and the AWWA day-
5 long workshop on "Navigating the Perfect Storm of Utility Finance: Strategies to
6 Meet Unfunded Mandates, Fund Capital Renewal and Replacement, and Avoid
7 Rate Shock" scheduled for June 12, 2005 at the national conference. The primary
8 message is that through careful long-term planning, utilities can manage the
9 impact of large capital programs to mitigate rate shock. On several fronts, the
10 argument is that rate payers should not be subject to large swings in their rates.

11 AWWA's M1 manual also is a proponent of managing levels of revenue increases
12 with respect to price elasticity. Specifically, the concern is that rate payers when
13 subject to large increases or swings in their rates, will resist paying their bills.
14 This has a domino effect, which ultimately, results in higher rates.

15 Q. How would a multi-year rate case be conducted?

16 A. A typical approach for a rate case filing involves establishing a test year for
17 revenue requirements, which generally represents results from a historical year
18 adjusted for known and measurable changes to the primary components of O&M,
19 debt service, coverage on debt service, and depreciation. For a multi-year filing,
20 the same approach showing estimates of known and measurable changes for each
21 period will be followed. Estimates would include anticipated changes in debt
22 service and related coverage associated with financing new capital, anticipated
23 changes in depreciation based on CIP additions to rate base; and anticipated

1 increase in operation and maintenance costs based on historical increases. Each
2 subsequent test year's revenue requirements are then allocated to customer classes
3 based on the cost allocation developed in the first test year.

4 Q. What are the benefits and risks of pursuing a multi-year filing?

5 A. This proposal is intended to lower cost through reduced cost of rate
6 administration, reduced time to implement, increased ability to focus on strategic
7 planning, and increased focus on execution of operations. Also, required revenue
8 increases could be reduced due to potential acceleration of rate implementation
9 and lowered cost. The most significant risk associated with a multi-year filing is
10 the likelihood that, over time, actual revenues, costs and drivers could vary
11 significantly from projections, which may necessitate adjustments to ensure the
12 financial integrity of the utility and prevent inequitable cost recovery over the
13 course of the approved plan. Additionally, if significant changes occurred to
14 utility operations, the current plan may require modifications. Severe
15 environmental changes could also disproportionately alter the consumption habits
16 of customers in a given period, which may require plan adjustments and
17 potentially allocation changes to ensure equitable cost recovery. Finally, if
18 previously unanticipated expense requirements materialize over the course of the
19 approved plan, a mechanism is necessary to enable those requirements to be met.

20 Q. What techniques can be used to mitigate risk?

21 A. One of the primary techniques for mitigating the risk of predictions is through the
22 administration of a look-back adjustment. A look-back process would allow
23 rates to be trued up over a given time period to ensure equitable cost recovery at

1 less effort than a full blown rate case would entail.

2 Q. What happens if capital or operating expenses change materially from the multi-
3 year plan?

4 A. The look-back process should address normal fluctuations in operating and capital
5 costs. If changes in operations or other factors are outside an acceptable range of
6 fluctuation, the District will file an updated case.

7 Q. How do you define an acceptable range of fluctuation?

8 A. Based on my experience, an acceptable range of cumulative fluctuation should be
9 equal to or less than 5% of the total system revenue requirements. For example, a
10 2 percent overage followed by a 3% overage would indicate the need for an
11 updated filing. However a 2% overage followed by a 3% shortfall would not.

12 Q. Describe the look-back mechanism more completely.

13 A. After the books have closed on a fiscal year, actual costs, volumes, customers,
14 and other drivers would be compared to the projections used to establish the rates
15 for that year. The calculations used in the rate design process would be updated
16 to reflect actual results. A comparison would be drawn between the test year
17 costs allocated to customer classes, and the actual results allocated to customer
18 classes. In the event actual costs were lower than projections, a credit would be
19 applied to planned rates to "true up" results. In that manner, the benefit would be
20 attributed to the customers who bore the burden of the original cost estimate. In
21 the event actual costs were higher than projections, an adjustment would be made
22 to current year rates to reflect the under-recovery experienced in the prior year.
23 Again, this adjustment would be subject to the same approved methodology for

1 cost allocation and rate design. Because look-backs will follow the same
2 approach approved in the design of the original rates, the overall level of effort
3 required to conduct the look-back is considered to be substantially less than that
4 required for a comprehensive rate case filing. The look-back adjustment would
5 become effective January 1 of the following year, and remain in effect the entire
6 year. Exhibit Q-4 provides a schematic showing the timing of the proposed
7 actions.

8 Q. Please describe how you went about your cost of service study in this case.

9 A. We began with the District's test year 2005 revenue requirements of \$40,704,350
10 as shown on Page 3, Schedule 1 (Line 5) of Petitioner's Exhibit N. We deducted
11 revenues from Non-Operating Income, Other Revenues Not Subject to Rate
12 Increase, and the Boone & Florence reserve and early termination payment
13 amortized over 10 years. The remaining total, \$37,434,519, needs to be recovered
14 through the water rates of the District. As shown on Lines 7 through 17 of
15 Schedule 8 on Page 9 of Exhibit N, the District needs to recover \$18,402,963 of
16 net operations and maintenance expense and \$19,031,556 of net capital costs.
17 Capital costs include \$5,328,876 of depreciation expense, \$12,541,807 of debt
18 service, and \$2,458,361 of debt service coverage. Capital costs are offset by
19 \$853,803 of non-operating income and \$443,685 of Boone and Florence reserve
20 and early termination funds.

21 Q. Please explain the general procedures that you used to develop cost of service
22 water rates.

1 A. We followed the cost of service allocation procedures recommended by the
2 American Water Works Association (AWWA) in its "Water Rates – Manual M-1,
3 Fifth Edition", with the exception of the allocation of mains smaller than 12
4 inches. In order to comply with PSC Order 2002-0105, the costs associated with
5 mains less than 12-inch were allocated to all customers except wholesale.

6 We first allocated the utility's costs of service to functional cost components and
7 then allocated the costs of each component to the user classes. We thereafter
8 developed rates designed to recover these costs from the customer classes.

9 Q. Please explain the basis for allocating the cost components.

10 A. Generally, costs are allocated to the function for which the cost is incurred, or, in
11 the case of plant investment, to the component for which the investment was
12 made.

13 Q. What are the functional cost components you have used?

14 A. We used the Base - Extra Capacity method in this water rate study. In this method
15 costs are allocated to the functional cost components of base costs, maximum day
16 extra capacity costs, maximum hour extra capacity costs, meters and service costs,
17 billing and collection costs, and direct fire protection costs.

18 Q. Will you please explain the basis of your allocation to these functional cost
19 components?

20 A. Yes, the NKWD water system is comprised of various facilities, each designed
21 and operated to fulfill a given function. In order to provide adequate service to its
22 customers at all times, the system must be capable of providing not only the
23 average annual amount of water used, but also of supplying water at maximum

1 rates of demand. However because all customers do not exert maximum demands
2 at the same time, capacities of the various system components are established to
3 meet the maximum coincidental demand of all classes of customers. The
4 capacities of some facilities, such as the water supply reservoirs, are designed on
5 the basis of average annual, or base water, water demands. Other facilities such as
6 the water treatment plants are designed to meet maximum day demands. Still
7 other facilities, such as high service pumping, filtered water storage, and
8 distribution mains, are designed to meet maximum hourly rates of water use.
9 These requirements result in different ratios of maximum to average demands to
10 be met by the various parts of the system. The demand ratios, in turn, are the basis
11 for allocating costs of respective facilities to the base and extra capacity cost
12 components.

13 Q. Did the allocations recognize any differences between retail and wholesale
14 service?

15 A. Yes. In order to comply with PSC Order 2002-0105, the costs associated with
16 mains less than 12-inches were allocated to all customers except wholesale.

17 Q. How did you proceed in the development of allocations?

18 A. Depreciation expense, debt service, and net operational maintenance expense are
19 allocated to functional cost components in Schedules 10 through 12 of Exhibit N.

20 Q. Please explain your allocation of depreciation expense.

21 A. The allocation of test year depreciation expense is shown on Page 14 of Exhibit N
22 in Schedule 10. The allocation of depreciation expense to functional cost
23 components uses the allocation factors and procedures summarized in Schedules

1 10.1 and 10.2, respectively, in Appendix C.

2 Q. Please explain your allocation of debt service.

3 A. Debt service is allocated to functional cost components based on the functional
4 cost allocation of net plant investment. Net plant investment is defined as the
5 original cost less accumulated depreciation expense and contributions as of
6 December 31,2004, plus Construction Work in Progress through December 31 of
7 2005, as allowed in PSC Order 2002-0105. Appendix C of Exhibit N provides the
8 details for the development of net plant investment and the allocation procedures
9 used. The development of net plant investment is shown on Schedule 11.1 of
10 Appendix C. The allocation of net plant investment to functional cost components
11 uses the allocation factors and procedures summarized in Appendix C, Schedules
12 10.1 and 10.2, respectively.

13 Q. Please explain your allocation of operation and maintenance expense.

14 A. The allocation of test year operation and maintenance expense to functional cost
15 components is shown in Schedule 12 on Pages 19 through 27 of Exhibit N. The
16 allocation operation and maintenance expense to functional cost components uses
17 the allocation factors and procedures summarized in Appendix C, Schedules 12.1
18 through 12.2.

19 Q. After performing the allocations just described, how did you apportion the
20 allocated costs to customer classes?

21 A. To make this apportionment it was necessary to develop total system and
22 customer class units of service. These units of service are shown on Page 29 of
23 Exhibit N, in Schedule 13.

1 Q. How were units of service developed?

2 A. Units of service for each customer class were developed based on the billing
3 records of the District. Test year water use totals 11,862,029 hundred cubic feet
4 (ccf) and the total number of bills during the test year totals 333,019. The annual
5 water usage and number of accounts for each customer class is shown in
6 Appendix C as Schedule 13.3.

7 Q. How were the Maximum Day and Maximum Hour Capacity Factors determined?

8 A. Maximum Day and Maximum Hour factors represent comparative usage of the
9 system by customer classes developed on a non-coincidental basis. These factors
10 are expressed as a percentage of average daily use and are intended to show the
11 relative use of the system on maximum days and maximum hours. Non-
12 coincidental maximum day and maximum hour capacity requirements of
13 customer classes provide the basis for distribution of total system extra capacity
14 costs. Estimates of the capacity factors, that is the ratios of peak demands to
15 average demands, are based upon an analysis of historical pattern of water use of
16 the District and from experience with other waterworks systems. The demand
17 factors used for each of the customer classes on Page 23 of Exhibit N,
18 Schedule 13 represents our engineering judgment on the use of the water system
19 by these classes. The ratio of non to coincidental demand (diversity factor) for the
20 system is 1.11 for maximum day and 1.16 for maximum hour. The typical range
21 of ratios for utilities recommended by AWWA is 1.10 to 1.40.

22 Q. How were the units of service shown in Schedule 13 used to apportion costs to
23 customer classes?

1 A. The sum of the units of service in each functional category is divided into the total
2 allocated cost of that category to determine a unit cost of service for each
3 functional category as shown on Page 31 of Exhibit N in Schedule 14. Cost items
4 include operation and maintenance expense, depreciation expense, debt service,
5 and debt service coverage. A total unit cost of service is developed for each
6 functional cost category by adding the unit costs for each cost item. Unit costs for
7 each functional category are multiplied by customer class units in each functional
8 category to distribute costs to each customer class. The allocation of costs to
9 customer classes is shown in Schedule 15, Pages 32 and 33 of Exhibit N.

10 Q. How does the allocated cost of service compare to the revenues that are in effect
11 during the test year?

12 A. The comparison of test year revenues under existing rates to the allocated cost of
13 service for each customer class is shown in Schedule 17, Page 35 of Exhibit N. As
14 shown on this Schedule, adjustments in the District's rate schedule are necessary
15 to fairly recover the cost of providing water service to the various customer
16 classes.

17 Q. Have you designed water rates that will recover the cost of service?

18 A. Yes, the water rates are shown on Page 34 of Exhibit N in Schedule 16.

19 Q. From a design perspective, do these rates differ from the existing rates?

20 A. No, the structure is the same as existing rates. Our approach to designing the
21 proposed rates is consistent with procedures established in prior PSC applications.

22 Q. Do the proposed rates for water service adequately recover the cost of service
23 from customers?

1 A. Yes, as shown in Schedule 18, Page 36 of Exhibit N, the proposed rates for
2 customers recover between 98.1 percent to 103.2 percent of the cost of service for
3 each of the individual customer classes. The rates do not recover exactly
4 100 percent from each customer class due to variances in usage characteristics
5 within the customer classes. Customers are grouped based on similar usage
6 patterns.

7 Q. For the initial test year, is it your opinion that the proposed level of revenues
8 shown in your report is reasonable and necessary to meet the projected revenue
9 requirements of the utility and that the proposed rates recover the revenue
10 requirements from customer classes with a reasonable level of equity?

11 A. Yes, it is my opinion that it is.

12 Q. How were revenue requirements established for subsequent test years?

13 A. We projected requirements for each individual component of revenue
14 requirements, as shown in Schedules E and F on page xi of the Executive
15 Summary in Exhibit N. Overall revenue requirements are projected to increase
16 from \$40,704,350 in the current test year to \$49,874,169 at the end of the five
17 year study period. Operation and maintenance expenses are projected to increase
18 at an annual rate of 4%, which is based on historical trends in the utility's
19 operating expenses and judgment regarding expected expense trends. Debt
20 service and debt service coverage are projected to increase consistent with the
21 funding plan established for the 5 year capital improvement program. Debt
22 service for each test year is projected as the 5 year average of each test period,
23 which includes as applicable subsequent revenue bond proceeds of \$13,155,000 in

1 2007 (“2007 Bonds”); \$13,150,000 in 2008 (“2008 Bonds”); \$13,155,000 in 2009
2 (“2009 Bonds”); and \$13,160,000 in 2010 (“2010 Bonds”). Depreciation is
3 determined based on CIP additions to rate base. Revenue under existing rates is
4 based on the current test year revenues, and assumes indicated increases are
5 implemented January 1 of each subsequent test year. Based on a 5 year average
6 of new customer installations, growth of 900 residential accounts per year is
7 assumed. No changes are anticipated during the study period for non-operating
8 income, operating revenue not subject to rate increase, or the Boone & Florence
9 settlement and early termination payment.

10 Q. How were rates designed for subsequent test years?

11 A. The same allocation basis used in the design of current test year rates has been
12 applied to future test year requirements such that rates increase proportionately in
13 each test year. To the extent actual results vary from projections, either in terms
14 of total District revenue requirements or in terms of the equitable assignment of
15 cost to customer classes, the look-back process will ensure rates implemented
16 remain equitable during the study period.

17 Q. For the subsequent test years, is it your opinion that the proposed level of
18 revenues shown in your report is reasonable and necessary to meet the projected
19 revenue requirements of the utility and that the proposed rates recover the revenue
20 requirements from customer classes with a reasonable level of equity?

21 A. Yes, it is my opinion that it is.

22 Q. Does this conclude your prepared direct testimony in this matter?

23 A. Yes, it does.

Peggy L. Howe
Black & Veatch
Director, Water Industry
Enterprise Management Solutions

Specialization: Financial Analyses and Planning
Financial Feasibility
Utility Rate Policy Studies
Water and Wastewater Rate Studies, including Revenue Requirements, Cost of Service Allocations, and Rate Design
Cost Estimation
Institutional, Management, and Organizational Studies
Capital Improvement Financing Plans

Education: B.S., Civil Engineering, North Dakota State University, 1979
M.B.A., University of Kansas, 1985

Professional Qualifications: Registered Professional Engineer: Kansas

Joined Black & Veatch: 1979

Birthdate: 6 March 1956

Citizenship: United States of America

Professional Experience:

Black & Veatch

<u>Project</u>	<u>Location</u>	<u>Activity</u>	<u>Position</u>	<u>Year</u>
Cost of Service Study and Rate Design	Northern Kentucky	Evaluation of water cost of service, design of rates, and rate case support.	Project Director	On-going
Cost of Service Study	Johnson County Wastewater	Comprehensive financial planning, evaluation of JCW operating costs of service and design of sewer rates.	Project Director	On-going
Comprehensive Study for Treated Water Service	Saginaw, Michigan	Projected revenue requirements, cost of service allocations, and proposed rates for treated water service for the City. Projected for 10 fiscal years through 2013. Costs were developed for grouped customers and type of service based on utility revenue needs and projected service requirements. Proposed retail and wholesale rates were developed for 2005.	Project Director	On-going

Black & Veatch (Continued)

<u>Project</u>	<u>Location</u>	<u>Activity</u>	<u>Position</u>	<u>Year</u>
Sewer Rate Study	Dayton, Ohio	Comprehensive financial planning for sewer enterprise fund.	Project Director	2005
Asset Management Study	Northern Kentucky	The development of a program consisting of inventory, inspection and condition assessment of individual elements which comprise the treatment facilities, followed by the generation of a capital improvement program to identifying and quantifying annual reinvestment needed to keep the facilities top operating condition.	Project Manager	2004
Automated Meter Reading Evaluation	Arlington, Texas	Evaluation of alternative meter reading methodologies to improve the effectiveness and efficiency of meter reading department.	Project Manager	2004
Wastewater Rate Study	Metropolitan Sewer District of Hamilton County, Ohio	Managed financial planning and wastewater rate assistance to the Metropolitan Sewer District, updating a computerized cost of service allocation and rate design model to assist in the development of schedules of sewerage rates consisting of minimum charges which vary by water meter size or family unit equivalents, commodity charges for normal domestic strength wastewater, excess strength surcharges, and industrial pretreatment charges.	Project Manager	2004
Billing Conversion and Alternative Meter Reading	Raleigh, North Carolina	Identified and evaluated alternative meter reading methodologies to support the change from bi-monthly to monthly billing. Reviewed customer service and metering business processes, researched alternative meter reading technologies, assisted the City in selecting the most appropriate technology, and illustrated the financial impact of changing the billing cycle.	Project Manager	2004
System Development Charges	St. Joseph, Missouri	Design of one-time up front capital charge based on the buy-in methodology for establishing value of equity in wastewater system.	Project Manager	2004
Annual Inspection Report – 2003	Louisville, Kentucky	In accordance with the terms set forth in the Company's bond covenants, provide an annual inspection report of LWC's financial management, rates and charges.	Project Manager	2003

Black & Veatch (Continued)

<u>Project</u>	<u>Location</u>	<u>Activity</u>	<u>Position</u>	<u>Year</u>
Wastewater Rate Study	Metropolitan Sewer District of Hamilton County, Ohio	Managed financial planning and wastewater rate assistance to the Metropolitan Sewer District, incorporating new concepts and tools such as a computerized cost of service allocation and rate design model to assist in the development of schedules of sewerage rates consisting of minimum charges which vary by water meter size or family unit equivalents, commodity charges for normal domestic strength wastewater, excess strength surcharges, and industrial pretreatment charges.	Project Manager	2002
Annual Inspection Report – 2002	Louisville, Kentucky	In accordance with the terms set forth in the Company’s bond covenants, provide an annual inspection report of LWC’s financial management, rates and charges.	Project Manager	2002
2001 – 2020 Facilities Plan	Louisville, Kentucky	Evaluation of Louisville Water Company’s operations, maintenance and facilities with a goal toward improving the utility’s overall management, operations, and financial strategies.	Project Manager	2001
Financial Advisory Services	Northern Kentucky	Provided financial advisory services in Northern Kentucky Water District’s acquisition of a neighboring utility	Project Manager	2001
Asset Valuation	Indianapolis, Indiana	Valuation of Indianapolis Water Company’s assets in support of the utility’s potential acquisition by the City of Indianapolis.	Project Manager	2000 - 2001
Rate Unification	Northern Kentucky	Development of unified rate structure for Northern Kentucky Water District’s existing customers.	Project Manager	2001
Meter Reading Analysis	Dayton, Ohio	Evaluation of alternative meter reading methodologies to improve the effectiveness and efficiency of meter reading department.	Project Manager	2001
Operational Assessment	Hopkinsville, Kentucky	Evaluation of operations of the meter reading, billing and collection systems.	Project Manager	2000
Water Rate Study	Paducah, Kentucky	Developed a business plan for Paducah Water Works identifying funding for major capital improvements and rate adjustments to meet revenue requirements, bonding obligations, and other capital financing needs.	Project Manager	2000

Peggy L Howe

Page 4

Black & Veatch (Continued)

<u>Project</u>	<u>Location</u>	<u>Activity</u>	<u>Position</u>	<u>Year</u>
Water and Wastewater Rate Models	Columbus, Ohio	Comprehensive financial planning including development of financial planning model for calculation of cost of service rates and system capacity charges.	Project Manager	2000
Water and Sewer Rate Study	Clermont County, Ohio	Comprehensive financial planning for sewer enterprise fund.	Project Manager	1999 - 2000
Sewer Rate Study	Dayton, Ohio	Comprehensive financial planning for sewer enterprise fund.	Project Manager	1999 - 2000
Water and Sewer Rate Study	Highland, Illinois	Comprehensive financial planning, including the development of system development charges for both water and sewer enterprise funds.	Project Manager	1999 - 2000
Management, Training and System Strengthening	Cairo, Egypt	Project has two purposes, assist the Cairo Water Utility to become both financially viable and managerially autonomous. Requires the utility to recover current operation, maintenance and capital costs from tariffs and fees, to control the activities of all facets of the utility operation, and to manage the utility assets. The Utility must learn to determine its own goals and objectives, and to pursue them independently of other agencies and still operate within the national laws and executive regulations.	Financial Program Manager Chief of Party	1993 - 1999
Utility Rate Policy Study	Springfield, Ohio	Comprehensive study of alternative meter reading systems, development of specifications for utility billing software, and analysis of impact of changing from quarterly meter reading to monthly meter reading.	Project Manager	1991 - 1993
Water and Wastewater Rate Study	Springfield, Ohio	Comprehensive study of revenue requirements, cost of service analysis and design of water and sewer rates.	Project Manager	1991 - 1992
Financial Planning Computer Model	Springfield, Ohio	Developed user-friendly, PC-based financial planning model for use by utility staff in annual budgeting updates and rate adjustments.	Project Manager	1991 - 1992
Stormwater Feasibility Study	Springfield, Ohio	Determine feasibility of creating enterprise funded stormwater utility for City.	Project Manager	1992 - 1993
Capital Improvement Financing Plan	Shreveport, Louisiana	Evaluated cost impacts and alternative financing plans for proposed capital improvement program	Project Manager	1992 - 1993

Peggy L Howe

Page 5

Black & Veatch (Continued)

<u>Project</u>	<u>Location</u>	<u>Activity</u>	<u>Position</u>	<u>Year</u>
Water and Wastewater Rate Study	Shreveport, Louisiana	Comprehensive analysis of revenue requirements, cost allocation and rate design. Presentation of study results to utility staff, government officials and citizens committees.	Project Manager	1992 - 1993
Financial Planning Computer Model	Shreveport, Louisiana	Developed user-friendly, PC-based financial planning model for use by utility staff in annual budgeting updates and rate adjustments.	Project Manager	1992 - 1993
Water Treatment Plant Operations Cost Projections	Fargo, North Dakota	Prepared cost estimates for the operation of a new water treatment plant.	Project Manager	1993
Rate Litigation	Highland, Illinois	Assisted with contract negotiations regarding water rates.	Project Manager	1992 - 1993
Water Treatment Plant Staffing Study	Fargo, North Dakota	Development of staffing plan for new water treatment plant. Determined optimum number of personnel for operations. Established job descriptions and minimum qualifications.	Project Manager	1992
Electric Utility Financial Planning Model	Sioux Falls, South Dakota	Developed user-friendly, PC-based financial planning model for use by utility staff in annual budgeting updates and rate adjustments.	Project Manager	1992
Wastewater Rate Study	Leavenworth, Kansas	Comprehensive study of revenue requirements, cost of service analysis and design of water and sewer rates.	Project Manager	1991
Water and Wastewater Rate Study	Henrico County, Virginia	Comprehensive analysis of revenue requirements, cost allocation and rate design. Presentation of study results to utility staff and government officials.	Project Manager	1991 - 1992
Financial Planning Computer Model	Henrico County, Virginia	Developed user-friendly, PC-based financial planning model for use by utility staff in annual budgeting updates and rate adjustments for water and wastewater utilities.	Project Manager	1991 - 1992
Financial Feasibility	Lake County, Illinois	Determined adequacy of utility revenues and engineering feasibility of project for issuance of revenue bonds	Project Manager	1991

Peggy L Howe

Page 6

Black & Veatch (Continued)

<u>Project</u>	<u>Location</u>	<u>Activity</u>	<u>Position</u>	<u>Year</u>
Water Rate Studies	Sioux Falls, SD; Asheville, NC; Topeka, KS; Goleta, CA; Indian Hills, OH; Peoria, AZ; Freeport, IL; and Ventura and San Diego, CA	Directed and organized field investigations; developing revenue requirements, cost-of-service allocation, and rate design; and programming user-friendly financial planning computer models. Presented study results to utility staff, government officials, and citizens committees.	Project Manager	1989 - 1990
Sewer Rate Studies	Pueblo, CO; Santa Cruz, CA; Sioux Falls, SD; Clark County, NV; Topeka, KS; Peoria, AZ; Chico, CA; Freeport, IL; Phoenix, AZ; and Tracy, CA	Directed and organized field investigations; developing revenue requirements, cost-of-service allocation, and rate design; and programming user-friendly financial planning computer models. Presented study results to utility staff, government officials, and citizens committees.	Project Manager	1989 - 1990
Financial Feasibility	Tacoma, WA and Los Angeles, CA	Development of capital financing plans for solid waste and sewer utilities. Determination of adequacy of revenue to support bond issue.	Project Manager	1989 - 1990
Water Rate Studies	Chesapeake, VA; Santa Barbara, CA; Sioux City, IA; Springfield, OH; Peoria, AZ; Loveland and Arvada, CO; and Glasgow, MT	Field investigation, revenue requirements, studies, cost-of-service allocation, rate design, user-friendly computer model, and presentations.	Project Engineer	1985 - 1988

Peggy L Howe

Page 7

Black & Veatch (Continued)

<u>Project</u>	<u>Location</u>	<u>Activity</u>	<u>Position</u>	<u>Year</u>
Sewer Rate Studies	Chesapeake, VA; Sioux City, IA; Springfield, OH; Peoria, AZ; Loveland and Arvada, CO; Battle Creek, MI; Gunnison, CO; Fayetteville, AR; and Beloit, WI	Field investigation, revenue requirements studies, cost-of-service allocation, rate design, user-friendly computer model, and presentations.	Project Engineer	1985 - 1988
Financial Feasibility Studies	Chesapeake, VA; Los Angeles, CA; Peoria, AZ; Gunnison, CO; Pima County, AZ; and Glasgow, MT	Adequacy of revenue to support bond issues.	Project Engineer	1985 - 1988
Water Demand Study	Dallas, TX	Development of demand factors for customer classes.	Staff Engineer	1985
Water Rate Studies	Springfield, OH; Manhattan, KS; Provo, UT; Cucamonga, CA; Dayton, OH; and Pocatello, ID	Revenue requirements studies, cost-of-service allocation, and rate design.	Staff Engineer	1981 - 1984
Sewer Rate Studies	Springfield, OH; Manhattan, KS; Provo, UT; and Denver, CO	Revenue requirements studies, cost-of-service allocation, and rate design.	Staff Engineer	1981 - 1984

Papers/Presentations:

"Asset Management: Adding Value to Your Utility," presented at Environment Engineering Conference – 2004, Lawrence, Kansas, February 2004

"Conservation Rates – Do They Work?" presented at The 2004 Kansas AWWA Management Seminar, Manhattan, Kansas, May 2004

"Maximize Debt Market Options – Minimize Revenue Adjustments," poster presentation at KY/TN Joint Water Professionals Conference, Nashville, TN, July 2004

"Acquisition of a Utility" presented at the 2003 AWWA/WEF Joint Management Conference, Dallas, Texas, February 2003

"Strategic Financial Planning: Cornerstone to a Successful Utility" presented at the 2002 WEFTEC Annual Conference, Chicago, Illinois, October 1, 2002.

"Increasing Shareholder Value through Improved Asset Management" presented at the Kansas Water Environment Association Annual Conference, April 2002.

"Improving Asset Management" presented at the Water Environment Association of Utah Annual Conference, April 2002.

Privatization at GOGCWS" presented at the Cairo Section of the National Contract Management Association, Cairo, Egypt March 10, 1998.

"How Residuals Management Affects Water Treatment Costs," published in *Water Engineering & Management*, November 1992.

"Water Rates in the 90's - Do Your Rates Enhance the Goals of Your Community?" presented at the Missouri Section Meeting, AWWA, Kansas City, Missouri, April 24, 1992.

"Public Education as an Assist to Financing Wastewater Facilities," presented at the Missouri Water Pollution Control Association Annual Conference, February 25, 1991.

"Water Rates in the 90's - Developing Equitable Water Rates," presented at the Arkansas Water Works & Water Environment Association Annual Meeting, Hot Springs, Arkansas, April 25-28, 1993.

"Revenue Bond Marketing Strategies," presented at the Kansas American Water Works Association Management Seminar, Lawrence, Kansas, August 3, 1993.

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
PROJECT EXPERIENCE FOR WATER AND WASTEWATER**



Client	Utility Types	Project Work Items										
		Revenue/Revenue Requirements	Financial/Capital Planning	Cost of Service/Rates	System Development Charges	Conservation Planning/Rates	Computer Modeling	Economic/Financial Feasibility	Bond Feasibility/Eng. Cert.	Institutional/Management	Management Information Systems	Valuation/Appraisal
ALABAMA												
Huntsville	W, WW	•			•							
Jasper Utility Board	W, WW	•	•	•			•		•			
Shelby County	W, WW		•									
ALASKA												
Cordova	W, WW	•	•	•				•		•		
Ketchikan	W, WW	•	•	•			•					
Klawock	W, WW	•	•	•			•					
Petersburg	W, WW						•					
ARIZONA												
Apache Junction	WW	•	•	•								
Avondale	W, WW	•	•	•		•	•					
Bisbee	W											•
Buckeye	WW							•		•		
Cave Creek	WW	•	•	•	•							
Chandler	WW											•
Flagstaff	W, WW	•	•	•	•	•	•					
Florence	W, WW	•	•	•	•							
Fountain Hills	WW		•		•							
Litchfield Park Services Company	WW								•			
Mesa	W, WW	•	•	•		•						
Mockingbird Water Co.	W											•
Peoria	W, WW	•	•	•	•	•	•		•			
Phoenix	W, WW	•	•	•	•		•	•	•			
Pima County	WW	•	•					•	•			•
Prescott	WW		•		•							
Scottsdale	W	•	•	•	•		•				•	•
Sun City Water and Sewer Co.	W, WW											•
Tucson	W	•	•	•		•		•	•			
Tucson, Metropolitan Domestic Water District	W								•			
Wickenburg	W, WW				•							
Yuma	W, WW	•	•	•	•	•	•			•		•
ARKANSAS												
Bella Vista	W	•	•	•								

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
PROJECT EXPERIENCE FOR WATER AND WASTEWATER**



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El Dorado	W, WW											
Fayetteville	W, WW	•	•	•				•	•	•		
Glendale	W, WW	•	•	•			•					
Little Rock	W, WW	•	•	•			•			•	•	
Pine Bluff	WW	•	•	•					•			
Pinetop-Lakeside Sanitary District	WW	•	•	•								
Tolleson	W, WW	•	•	•								
Van Buren	W	•	•	•								
CALIFORNIA												
Beverly Hills	W		•									•
Burbank	W, WW	•	•	•		•	•					
Carlsbad	W, WW			•	•	•						
Capistrano Valley Water District	WW		•									
Channel Island Beach Community Ser	W	•						•				
Chino Basin Watermaster	W						•					
Cloverdale	W, WW	•	•	•			•					
Corona	W	•	•									
El Toro Water District	W	•	•	•								
Elsinore Valley	W		•	•		•						
Escondido	WW											•
Fullerton	W	•	•	•		•	•					
Goleta	W	•	•	•	•	•	•					
Imperial	W, WW	•	•	•	•				•			
Imperial Beach	WW	•	•	•	•		•				•	
Long Beach	W, WW	•	•	•		•		•				
Los Angeles	W, WW	•	•	•	•	•	•	•	•	•		
Madera	W, WW	•	•	•			•					
Mammoth Community Water District	W	•	•			•						
Metro. Water Dist. of So. California	W	•	•	•	•	•	•			•		
Modesto	WW	•	•		•			•				
Municipal Water District of Orange County	W						•				•	
Needles	W, WW	•	•	•				•				
Ojai Water District	W	•	•									
Palo Alto	W, WW									•		

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
PROJECT EXPERIENCE FOR WATER AND WASTEWATER**



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Pasadena	W					•	•					
Pomona	W, WW	•	•	•				•				
Port Hueneme	W, WW	•	•	•	•							
Port of Long Beach	W, WW				•			•				
Redlands, City of	WW		•									
Rialto	W, WW	•	•	•				•	•	•		
San Buenaventura	W, WW	•	•	•	•	•	•	•		•		
San Bernardino	W, WW	•		•	•			•				
San Diego	WW	•	•	•				•				
San Dieguito Water District	W	•	•	•	•	•	•		•			
San Fernando	W, WW	•	•	•								
San Geronio	W				•							
San Jose	WW		•	•				•				
Santa Ana	W					•						
Southern California Water Company	W							•				
Torrance	W		•	•				•				
United Water Conservation District	W							•				
Upland	W	•	•	•				•				
Vista	WW							•		•		
Westmorland	W, WW		•					•				
Windsor	W, WW	•	•	•		•	•	•				
COLORADO												
Arapahoe W&S District	W, WW	•	•	•				•	•			
Arvada	W, WW	•	•	•	•	•	•					
Aurora	W									•		
Berthoud	WW	•	•	•	•	•						
Boulder	W, WW	•	•	•	•							
Breckenridge Sanitation District	WW	•	•	•								
Broomfield	WW	•	•	•								
Buena Vista	W	•	•	•	•	•						
Castle Rock	W, WW	•	•	•	•	•	•					
Cherry Hills Village Sanitation District	WW	•	•	•	•				•			
Colorado Springs	W, WW	•	•	•	•	•	•	•				
Cortez	W	•	•	•								

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
PROJECT EXPERIENCE FOR WATER AND WASTEWATER**



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Craig	WW	•	•									
Crestview W&S District	W, WW	•	•	•	•				•			
Dacono Sanitation District	WW	•	•	•	•				•			
Denver	W, WW	•	•	•	•							
Durango	W, WW	•	•	•	•	•			•	•		
Englewood	W	•	•	•					•			
Estes Park	W	•	•	•	•				•	•		
Fort Collins	W, WW	•	•	•								
Fort Lupton	W, WW	•	•	•					•	•		
Fort Morgan	WW	•	•									
Frisco Sanitation District	WW	•	•	•					•			
Fruitdale Sanitation District	WW	•	•	•								
Golden	W, WW	•	•	•	•	•	•					
Grand Junction	W	•	•	•	•				•			•
Greeley	W, WW	•	•	•	•			•				
Gunnison	W, WW	•	•	•					•	•		
Lakehurst Water & Sanitation Dist.	W, WW	•	•	•	•	•			•			
Lakewood	W, WW	•	•	•	•				•			
Left Hand Water	W	•	•	•	•	•	•					
Longmont	W, WW	•	•	•	•	•	•	•	•			
Loveland	W, WW	•	•	•	•	•	•	•	•			
Metro W/Water Reclamation Dist.	WW	•	•	•	•				•			
Monte Vista	WW		•	•								
Montrose	W, WW	•	•	•	•	•	•					
Monument	W	•	•	•					•	•		
Pueblo	W, WW	•	•	•	•	•	•	•	•	•	•	
Salida	W	•	•	•		•						
South Adams County Water & San. District	W	•	•	•	•							
Steamboat Springs	W, WW	•	•	•		•	•	•				
Summit County	WW	•	•	•				•	•			
Thornton	W, WW	•	•	•	•	•		•	•	•		•
Willows Water District	W	•	•	•		•	•	•				
CONNECTICUT												
Hartford MDC	W	•	•	•	•			•				

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
PROJECT EXPERIENCE FOR WATER AND WASTEWATER**



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Waterbury	WW	•	•	•			•	•	•	•		
DELAWARE												
Sussex County	W, WW	•	•	•	•			•	•	•	•	
DISTRICT OF COLUMBIA												
Children's Hospital	W	•		•						•		
Water & Sewer Authority	W, WW	•	•	•		•	•	•	•	•	•	•
FLORIDA												
Cape Coral	W, WW	•	•				•		•			
Coral Springs	W, WW							•				•
Gainesville Regional Utilities	W, WW	•							•			
Homestead	W, WW	•	•	•					•			
JEA	W, WW	•	•	•	•		•		•			
Key West	WW	•		•				•				
Manatee County	W, WW	•	•	•	•	•	•					
Mariner Properties Inc. (Sanibel)	WW											•
Miami-Dade W&S Dept.	W, WW	•	•					•	•	•		
New Port Richey	W, WW						•					
New Smyrna Beach	W, WW	•	•	•					•			
Orlando, City of	W, WW	•	•	•	•		•		•			
Orlando Utilities Commission	W	•	•	•	•		•		•			
Ormond Beach	W, WW							•				•
Plantation	WW											•
Sanibel Sewer System Partners	WW											•
Tallahassee	W, WW	•			•							
Tampa	W, WW								•			
Tampa Bay Water	W	•						•	•			
GEORGIA												
Atlanta	W, WW	•		•			•	•	•			
Butts County	WW	•			•							
Columbus	W									•		
East Point	W, WW		•					•				
Gwinnett County	W, WW		•	•								
Whitfield County	W	•	•					•				
HAWAII												
Honolulu	WW	•	•				•			•		

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Kauai	WW	•	•	•	•		•					
Maui	WW	•	•	•	•		•			•		
IDAHO												
Idaho Falls	W				•							
Pocatello	W, WW	•	•	•	•			•				
ILLINOIS												
American Bottoms Reg. WW Facility	WW	•	•	•			•	•	•			
Bolingbrook	W, WW	•	•	•					•			•
Carbondale	W, WW	•	•	•								
Central Lake County Water Agency	W	•	•					•	•			
DuPage Water Commission	W, WW	•	•	•				•	•			
Elgin	W	•	•	•								
Freeport	W, WW	•	•	•				•				
Highland	W	•	•	•					•			
Inter State Water Company	W	•	•	•								
Lake County	W, WW	•	•	•				•	•			
NW Suburban Mun. Water Agency	W	•	•	•					•	•		
Park Forest	W, WW	•	•	•								
Rock Island	W, WW	•	•	•								
Sauget	W	•	•	•			•					
Schaumburg	W	•	•	•								
Skokie	W	•	•	•						•		
INDIANA												
Bloomington	W, WW	•	•	•				•	•	•	•	•
Columbus	W, WW	•	•	•					•			
Evansville	W, WW	•	•	•						•		
Indianapolis	W	•	•	•				•	•		•	•
IOWA												
Fort Madison	W	•	•	•				•	•			
Sioux City	W, WW	•	•	•						•		
University of Iowa	WW	•	•	•								
KANSAS												
Andover	WW		•		•			•		•		
Arkansas City	WW		•		•							
Atchison	W, WW	•	•	•								

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Dodge City	WW	•	•	•				•				
El Dorado	W	•	•	•								
El Paso Water Co., Derby	W	•	•	•					•			•
Emporia	W,WW	•	•	•					•			
Garden City	W,WW	•	•	•								
Hays	W,WW	•	•	•								
Johnson County, Water Dist. No. 1 of	W	•	•	•	•	•	•	•	•	•		
Junction City	W	•	•	•								
Lawrence	W,WW	•	•	•	•			•	•			
Leavenworth	WW	•	•	•				•				
Manhattan	W,WW	•	•	•								
Olathe	W,WW	•	•	•					•			
Osawatomie	WW	•	•	•								
Paola	W,WW	•	•	•								
Topeka	W,WW	•	•	•						•		•
Wichita	W,WW	•	•	•	•		•	•	•			
Winfield	W	•	•	•								
KENTUCKY												
Boone Co. Water & Sewer Dist.	W,WW	•	•	•				•				
Corbin	W,WW	•	•	•								
Louisville & Jefferson County Metropolitan Sewer District	WW	•	•	•			•					
Nicholasville	W,WW	•	•	•								•
Northern Kentucky Water District	W			•								
Owensboro	W	•	•	•				•	•			
LOUISIANA												
Alexandria	W	•	•	•				•	•	•		•
Baton Rouge/East Baton Rouge Sewerage Comm.	WW	•	•	•	•			•	•			
Greater Lake Charles Water Co.	W	•	•	•	•			•	•	•	•	•
New Orleans	W,WW	•	•	•				•	•	•	•	•
Public Financial Management, Inc.	WW								•			
Shreveport	W,WW	•	•	•				•	•			
MARYLAND												
Allegany County	W,WW	•	•	•								



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Annapolis	W, WW	•	•	•				•	•	•	•	•	•
Baltimore	W, WW	•	•	•				•	•	•	•	•	•
Baltimore County				•				•			•		
Carroll County	W	•	•						•				
Frederick County	WW								•		•		
Howard County	W, WW	•	•		•	•					•	•	
Queen Anne's County San. Dist.	W, WW	•	•	•									
Washington County	W, WW	•	•	•				•			•		
Washington Suburban Sanitation Com.	W, WW				•				•		•		•
MASSACHUSETTS													
Water Resources Authority, Boston	WW	•	•	•				•	•	•	•	•	
MICHIGAN													
Battle Creek	W	•	•	•									
Delta Township	W								•				
Detroit	W, WW	•	•	•				•	•	•	•	•	•
Detroit Edison (Monroe)	W								•				
Flint	W, WW	•	•	•				•	•				
Grand Rapids	WW	•	•	•									
Huron-Clinton Metro. Authority	W	•	•	•									
Kalamazoo	W, WW	•	•	•				•	•		•		
Lansing	WW	•	•	•				•	•				
Wyandotte	W		•										
MINNESOTA													
Bloomington	W	•	•	•					•				
Brooklyn Center	W	•	•	•					•	•			
Eden Prairie	W	•	•	•									
Moorhead	WW	•	•	•									
St. Louis Park	W, WW	•	•	•									
St. Paul	W, WW	•	•	•							•		•
Worthington	W	•	•	•				•	•	•			
MISSISSIPPI													
Natchez	W, WW	•	•	•					•		•		
MISSOURI													
Cape Girardeau	W, WW	•	•						•	•			•
Columbia	W, WW	•	•	•					•	•			

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Eldon	WW		•		•									
Hannibal	W, WW							•			•	•	•	
Independence	W	•	•	•										
Kansas City	W, WW	•	•	•				•	•	•	•			
Kirksville	W, WW	•	•	•						•			•	
Lee's Summit	W, WW	•	•	•	•					•				
Liberty	W, WW	•	•	•										
Marshall	W, WW	•	•	•						•	•			
Mexico	WW	•	•	•										
North Kansas City	WW	•	•	•					•					
Saint Charles	W, WW	•	•											
Sedalia	W									•				
So. St. Joseph Industrial Sewer District	WW	•	•	•										
St. Joseph	WW	•	•	•					•	•				
St. Louis	W, WW	•	•	•	•			•	•	•	•		•	
St. Peters	WW	•	•							•				
Webster Groves	W	•	•	•										
MONTANA														
Billings	W, WW	•	•	•					•	•	•			
Butte	WW	•	•	•										
Columbia Falls	WW	•	•	•	•	•	•							
Helena	W	•	•	•										
Great Falls	W, WW	•	•	•	•				•	•				
NEBRASKA														
Bellevue	W		•						•					
Grand Island	WW	•	•	•										
Lincoln Water System	W										•			
Norfolk	W	•	•	•										
NEVADA														
Boulder City							•							
Clark County Sanitation District	WW	•	•	•	•			•	•					
Colorado River Commission	W	•	•							•	•			
Henderson, City of	W, WW	•	•	•	•			•						
Southern Nevada Water Authority	W		•		•									
NEW JERSEY														

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
PROJECT EXPERIENCE FOR WATER AND WASTEWATER**



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Ridgewood	W												
Passaic Valley Water Commission	W	•	•	•				•					
Passaic Valley Sewerage Commissioners	WW	•		•									
NEW MEXICO													
Albuquerque	W, WW		•	•							•	•	
Las Cruces	W, WW			•	•						•	•	•
Los Alamos	W, WW							•			•	•	
Public Service Co. of New Mexico (Santa Fe, Las Vegas)	W												•
Rio Rancho	W, WW	•	•	•	•	•	•	•					
NEW YORK													
Beacon	WW										•		
Buffalo	W, WW	•	•	•				•	•		•		
N.Y.C. Department of Environmental Protection	W, WW						•	•				•	
N.Y.C. Mun. Water Finance Authority	W, WW	•	•	•					•	•			
N.Y.C. Water Board	W, WW	•	•	•				•	•		•		•
Westchester County	WW		•						•		•		
Niagara Falls	W	•	•	•				•	•	•	•		
NORTH CAROLINA													
Asheville-Buncombe	W, WW	•	•	•				•	•				
Cary	W, WW	•	•						•				
Fayetteville, Public Works Comm.	W, WW	•	•	•	•			•	•	•			
Hendersonville	W, WW	•	•	•	•			•					
Orange County	W, WW	•	•	•					•	•			
Orange Water & Sewer Auth., Carrboro	W, WW	•	•	•	•	•	•	•	•		•		
Sanford	W, WW	•	•	•									
Winston-Salem Utilities Commission	W, WW	•	•	•	•					•			
NORTH DAKOTA													
Fargo	W										•		
OHIO													
Cincinnati	W, WW	•	•	•				•		•	•	•	
Columbus	W, WW	•	•	•	•	•	•	•					

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
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Dayton	WW	•	•	•								
Mason	W, WW	•	•	•				•				
Miami County Sanitary Eng., Dept.	W, WW				•							
Montgomery	W, WW	•	•	•	•	•	•					
Springfield	W, WW	•	•	•			•	•	•	•		
Warren County	W, WW	•	•	•		•		•	•			
Westerville	W		•									
OKLAHOMA												
Bartlesville	W	•	•	•								
Edmond	W, WW	•	•	•						•		
Oklahoma City	WW											•
Tulsa	W, WW	•	•	•	•		•	•				
OREGON												
Eugene	W	•			•					•		
Pacific City	WW		•		•							
Portland	WW			•						•		
Salem	W, WW	•	•					•	•			
St. Helens	W, WW	•	•	•			•					
PENNSYLVANIA												
Allegheny County Sanitation District	WW	•	•	•					•			
CAN DO Industrial Park Utilities Co.	W, WW	•		•								
Coatsville	WW							•				
Columbia, Water Co., The	W	•		•				•				•
Delaware Valley Utilities Co.	WW	•										
Harrisburg Authority, The	W, WW		•	•				•	•			•
International Paper - Lock Haven Water	W	•		•								
Marietta Gravity Water Co.	W	•		•								•
Paupack Water Co.	W	•		•								
Philadelphia Water Department	W, WW	•	•	•				•	•	•		
Philadelphia Suburban Water Co.	W											•
Schuylkill Haven Water Co.	W	•		•								
Toll Brothers, Inc.	W				•							
Utilities, Inc., Pennsylvania	W											•
Wal-Mart, Eaton		•		•								

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
PROJECT EXPERIENCE FOR WATER AND WASTEWATER**



Client	Utility Types	Project Work Items										
		Revenue/Revenue Requirements	Financial/Capital Planning	Cost of Service/Rates	System Development Charges	Conservation Planning/Rates	Computer Modeling	Economic/Financial Feasibility	Bond Feasibility/Eng. Cert.	Institutional/Management	Management Information Systems	Valuation/Appraisal
RHODE ISLAND												
Narragansett Bay Water Comm.	W											
Providence	W	•	•	•			•					
SOUTH CAROLINA												
Anderson County Joint Municipal Agency	W	•	•					•	•			•
Bamberg	W, WW	•	•	•								
Charleston	W, WW	•	•	•	•	•	•	•	•		•	•
Columbia	W, WW	•	•	•						•		
Gaffney	W, WW	•	•	•	•							
Grand Strand Water & Sewer Authority	W, WW	•	•	•			•			•		
Greenville	W	•	•	•	•			•	•			
Greenwood	W	•	•	•					•			
Isle of Palms	W, WW		•				•			•		
Kiawah Island Utility, Inc.	W, WW	•	•	•								
Lexington	W, WW	•	•	•	•			•				
Orangeburg	W, WW	•	•	•							•	•
Spartanburg CPW	W, WW	•	•	•				•			•	•
Western Carolina Regional Sewer Auth.	WW	•	•		•		•	•				
SOUTH DAKOTA												
Rapid City	W	•	•	•								
Sioux Falls Utilities	W, WW	•	•	•								
TENNESSEE												
Bristol	W, WW									•		
Memphis	WW		•									
Memphis Light, Gas & Water	W	•	•					•	•	•		
TEXAS												
Austin	W, WW	•	•	•								
Beaumont	W, WW	•	•	•			•					
Brownsville	W, WW	•	•	•			•					
Canyon Regional Water Authority	W	•	•	•			•					
Corpus Christi	W, WW	•	•	•				•	•			
Dallas	W, WW	•	•	•				•				

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
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Denton	W, WW													
Fort Worth	W, WW	•	•	•										
Garland	W, WW	•	•	•				•						
Georgetown	W, WW	•	•	•				•						
Grand Prairie	W, WW	•	•	•				•						
Harris-Galveston	W			•										
Houston	W, WW	•	•	•				•						
Hurst	W, WW	•	•	•				•						
La Joya Water Supply Corp.	W, WW	•	•	•				•						
Laredo	W, WW	•	•	•										
League City	W, WW	•	•	•				•						
Northeast Texas Municipal Water Dist.	W	•	•	•										
Port Arthur	W	•	•	•										
Roma	W, WW									•	•			
Sachse	WW	•	•	•				•						
San Antonio	W, WW	•	•	•					•	•				
San Marcos	WW	•	•	•				•						
Sugar Land	W, WW	•	•	•										
Tarrant Co. WCID No. 1	W	•	•	•				•	•					
Texarkana	W, WW								•	•				
Tyler	W, WW	•	•	•										
Waco	W												•	
UTAH														
Eagle Mountain	W	•	•						•					
Ivins	WW	•	•	•	•									
Provo	WW	•	•	•				•				•		
Santa Clara	WW	•	•	•	•									
St. George	WW	•	•	•	•					•				
Washington	WW	•	•	•	•									
VERMONT														
Burlington	WW	•	•						•					
VIRGINIA														
Arlington County	WW												•	
Charlottesville	W												•	
Chesapeake	W, WW	•	•	•	•			•	•	•				

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
PROJECT EXPERIENCE FOR WATER AND WASTEWATER**



Client	Utility Types	Project Work Items										
		Revenue/Revenue Requirements	Financial/Capital Planning	Cost of Service/Rates	System Development Charges	Conservation Planning/Rates	Computer Modeling	Economic/Financial Feasibility	Bond Feasibility/Eng. Cert.	Institutional/Management	Management Information Systems	Valuation/Appraisal
Chesterfield County	W, WW	•	•					•	•			
Colchester Sewer Co.	WW	•		•						•		•
Fairfax City	W	•	•	•				•		•		•
Fairfax County Integrated Sewer System	WW	•	•	•	•		•	•			•	
Fairfax County Water Authority	W	•	•	•								•
Falls Church	W											•
Hampton	W, WW											•
Hanover County	W		•					•				
Henrico County	W, WW	•	•	•	•		•	•	•			
Loudoun County Sanitation Authority	W, WW										•	
Newport News	W	•	•	•								
Norfolk	W, WW	•	•	•		•	•	•	•	•	•	•
Portsmouth	W, WW	•	•	•			•					•
Prince William County Service Auth.	W, WW	•	•	•	•		•	•				
Suffolk	W		•		•		•					
Virginia Beach	W	•	•	•								
WASHINGTON												
Auburn - Water Conservation Plan	W					•						
LOTT	WW	•		•								
Ocean Shores	W, WW	•	•	•								
Seattle Water Department	W		•							•		
Steilacoom	W, WW	•	•	•			•	•		•		
Tacoma	W				•							
Yakima	W			•	•		•					
WEST VIRGINIA												
Charleston Sanitary Board	WW	•		•			•					
Parkersburg	W, WW	•	•	•						•		
Wheeling+A357+A20	W, WW	•	•	•			•					
WISCONSIN												
Appleton	W, WW	•	•	•			•					
Beloit	WW	•	•	•								
Franklin Water Utility	W		•									
Green Bay	WW	•	•	•			•			•		
Milwaukee	W, WW	•	•	•				•	•	•		

**BLACK & VEATCH ENTERPRISE MANAGEMENT SOLUTIONS
PROJECT EXPERIENCE FOR WATER AND WASTEWATER**



Client	Utility Types	Project Work Items										
		Revenue/Revenue Requirements	Financial/Capital Planning	Cost of Service/Rates	System Development Charges	Conservation Planning/Rates	Computer Modeling	Economic/Financial Feasibility	Bond Feasibility/Eng. Cert.	Institutional/Management	Management Information Systems	Valuation/Appraisal
WYOMING												
Casper	W	•	•	•	•		•	•		•		
Cheyenne	W, WW	•	•	•	•	•	•	•				
Douglas	WW	•	•	•			•					
Evansville	WW	•										
Laramie	WW	•	•	•				•	•			
Sheridan	W, WW	•	•	•								
INTERNATIONAL												
Amman, Jordan Water Authority	W, WW	•	•	•						•		
Arab Republic of Egypt	W, WW	•	•	•		•				•	•	•
Bangkok, Thailand	W		•					•		•	•	
Bogota, Colombia	W, WW	•	•	•				•		•		
Calgary, Alberta, Canada	W, WW				•							
Canal Cities, Egypt	W		•									
Cochabamba, Bolivia	W, WW		•					•		•		
Edmonton, Alberta, Canada	W	•	•	•						•	•	
El Salvador, National Water & Sewer Auth.	W							•				
Izmir, Turkey	W, WW	•	•	•			•	•		•	•	
Kelowna, BC, Canada	W			•								
Kerala, India	W	•	•	•			•	•				
Lima, Peru	W, WW		•					•		•	•	
Lusaka, Zambia	W		•					•		•	•	
Manila, Philippines	WW	•	•					•		•		
N'Djamena, Chad	WW	•	•					•		•		
North American Development Bank, San Antonio, Texas	W, WW									•		
Ottawa-Carleton, Ontario, Canada	W		•			•	•					
Puerto Rico Aqueduct & Sewer	W, WW	•	•	•			•	•	•	•		
Puerto Rico Infrastructure Finance Authority	W/WW									•		
Trinidad - WASA	W, WW		•					•		•	•	

Sample Ordinance (Philadelphia, Pennsylvania)

TITLE 13. WATER AND SEWER

Chapter 13-100. Water Rates

§13-101.Standards.

Chapter 13-200. Sewer Rates

§13-201.Standards.

Chapter 13-300. Water Pipe

§13-301.Restrictions on Laying Water Pipe.

§13-302.Authorization for Laying of Water Pipe by the City.

§13-303.Contracts for Laying Water Pipe.

§13-304.Water Pipe Bills and Assessments.

§13-305.Connections to Water Pipe Laid at Public Expense.

§13-306.Water Pipe Laid by Property Owners.

Chapter 13-400. Sewers

§13-401.Restrictions on Constructing Sewers.

§13-402.Authorization for Construction of Sewers by the City.

§13-403.Contracts for Constructing Sewers.

§13-404.Sewer Bills and Assessments.

§13-405.Connections to Sewers Constructed at Public Expense.

§13-406.Sewers Constructed by Property Owners.

Chapter 13-500. Provisions Governing Use of Water

§13-501.Connections.

§13-502.Service Pipe, Valves, and Stop-Cocks.

§13-503.Unnecessary Flow or Leakage.

§13-504.Single Connections Required.

Chapter 13-600. Provisions Governing the Use of Sewers

§13-601.Connections.

§13-602.Discharge of Harmful Material.

§13-603.Storm Water Sewers.

Chapter 13-700. Garbage Disposal Units

§13-701.Definitions.

§13-702.Permits.

§13-703.Departmental Regulations.

§13-704.Penalties.

§13-705.Repealer.

Chapter 13-800. Damages from Breakage

§13-801.Definitions.

§13-802.Water and Sewer System Property Damages.

§13-803.Administrative Procedure.

§13-804.Acceptance of Award.

§13-805.Confidential Information.

§13-806.Retroactive Effect.

§13-807.Limitations.

§13-808.Election of Remedies.

§13-809.Source of Payment.

TITLE 13. WATER AND SEWER

CHAPTER 13-100. WATER RATES

Sample Ordinance (Philadelphia, Pennsylvania)

§13-101. Standards.[Note 1]

(1) Councilmanic Examination: At least once in every four years Council shall make or cause to be made an independent examination of the current operations and Capital Programming and Budgeting of the Water Department, and in connection therewith employ qualified consultants to advise the Council directly with respect to:

(a) The formulated policy as prescribed by the Water Department for its capital program and capital budget and sinking fund requirements.

(b) The economic soundness of operational methods, universal meter operations, bill collecting and accounts receivable procedures, inventory control and similar factors.

(c) **The reserves necessary to stabilize rates for 3, 4 and 5 year periods.**

(2) Standards for Rates and Charges:[Note 2] Pursuant to Section 5-801 of the Charter, the Water Department shall fix and regulate rates and charges for supplying water, without further authorization of Council, in accordance with the following standards:

(a) The rates and charges shall be such as shall yield to the City at least an amount equal to operating expenses, including interest and sinking fund charges on all obligations of the City in respect of the water system and, in respect of water and sewer revenue obligations of the City, such additional amounts as, together with additional amounts charged in respect of the City's sewer system, shall be required to comply with any rate covenant and sinking fund reserve requirements approved by ordinance of Council in connection with the authorization or issuance of water and sewer revenue bonds, and proportionate charges for all services performed for the Water Department by all officers, departments, boards or commissions of the City.

(b) The rates and charges shall yield not more than the total appropriation from the Water Fund to the Water Department and to all other departments, boards or commissions, plus a reasonable sum to cover unforeseeable or unusual expenses, reasonably anticipated cost increases or diminutions in expected revenue, less the cost of supplying water to City facilities and fire systems and, in addition, such amounts as, together with additional amounts charged in respect of the City's sewer system, shall be required to comply with any rate covenant and sinking fund reserve requirements approved by ordinance of Council in connection with the authorization or issuance of water and sewer revenue bonds. **Such rates and charges may provide for sufficient revenue to stabilize them over a reasonable number of years.**

(c) The rates and charges shall be equitably apportioned among the various classes of consumers.

(d) The rates and charges shall be just, reasonable and nondiscriminatory as to the same class of consumers.

(e) Special rates and charges, to be designated as "charity water rates and charges," shall be established for public and private schools, institutions of purely public charity, and places used for actual religious worship.

(f) Special rates and charges, to be designated as "public housing water rates and charges" shall be established for property of the Philadelphia Housing Authority and shall be set so that the Philadelphia Housing Authority receives a five percent (5%) reduction off of the Water Department's service and quantity charges.[Note 3]

(3) Notice of Proposed Changes: The Water Department shall give written notice to Council at least 30 days in advance of the filing of notice of any proposed change in rates or charges or of any proposed revision in service rates, and shall submit therewith financial, engineering and other data upon which the proposed water rates and charges are based. Proposed revisions of rates to be made within 90 days prior to the enactment of the next annual operating budget shall be submitted to Council forthwith.[Note 4]

(4) Annual Report: Water rates and charges shall be reviewed by the Water Department at least once a year, and a report thereof shall be submitted to Council.

CHAPTER 13-200. SEWER RATES

§13-201. Standards.[Note 5]

(1) Councilmanic Examination: Council shall from time to time investigate and in connection therewith employ qualified consultants to advise the Council with respect to sewer rates in the

Sample Ordinance (Philadelphia, Pennsylvania)

same manner as authorized by Section 13-101(1) with respect to water rates, and to submit their findings directly to Council.

(2) Standards for Rates and Charges:[Note 6] Pursuant to Section 5-801 of the Charter, the Water Department shall fix and regulate rates and charges for supplying sewage disposal services, without further authorization of Council, in accordance with the following standards:

(a) The rates and charges shall be such as shall yield to the City at least an amount equal to operating expenses, including interest and sinking fund charges on all obligations of the City in respect of the sewer system, and, in respect of water and sewer revenue obligations of the City, such additional amounts as, together with additional amounts charged in respect of the City's water system, may be required to comply with any rate covenant and sinking fund reserve requirements approved by ordinance of Council in connection with the authorization or issuance of water and sewer revenue bonds, and proportionate charges for all services performed for the Water Department by all officers, departments, boards or commissions of the City.

(b) The rates and charges shall yield not more than the total appropriation from the Sewer Fund to the Water Department and all other departments, boards or commissions, plus a reasonable sum to cover unforeseeable or unusual expenses or diminutions in expected revenue, less the cost of supplying sewage disposal service to City facilities and, in addition, such amounts as, together with additional amounts charged in respect of the City's water system, shall be required to comply with any rate covenant and sinking fund reserve requirements approved by ordinance of Council in connection with the authorization or issuance of water and sewer bonds. Such rates and charges may provide for sufficient revenue to stabilize them over a reasonable number of years.

(c) The rates and charges shall be equitably apportioned among the various classes of consumers.

(d) The rates and charges shall be just, reasonable and nondiscriminatory as to the same class of consumers.

(e) Special rates and charges, to be designated as "charity sewer rates and charges," shall be established for public and private schools, institutions of purely public charity, and places used for actual religious worship.[Note 7]

(f) Special rates and charges, to be designated as "public housing sewer rates and charges" shall be established for property of the Philadelphia Housing Authority and shall be set so that the Philadelphia Housing Authority receives a five percent (5%) reduction off of the Water Department's service and quantity charges.[Note 8]

(g) Special rates and charges to be designated "Federal facilities rates and charges" shall be established for designated Federal facilities within the boundaries of the City of Philadelphia which make financial contributions to the City of Philadelphia equal to 100 percent of the capital costs of the reconstruction, upgrading and improvement of that portion of the City of Philadelphia's Water Pollution Abatement facilities allocated for the use of the federal facility.[Note 9]

(3) Charge Where City Water Not Used: For properties which use other than City supplied water, the charge for sewage disposal service shall be based upon the quantity of water discharged into the sewer system. A meter or other measuring device satisfactory to the Water Department shall be installed by the consumer and the charge for such service shall be comparable to that charged for sewage disposal service for City water having a meter of equal size.

(4) Charge Where City Water Not Discharged Into Sewage Disposal System: Where commercial and industrial properties which use City water do not discharge all or part of such water into the sewage disposal system of the city, the quantity of such water may be excluded in determining the proper sewage service charge, provided, the minimum sewage service charge, as established by regulation of the Water Department, is not reduced thereby. To determine the amount of such exclusion, the consumer shall install a meter or measuring device satisfactory to the Water Department; provided, that if, in the opinion of the Water Department, it is not feasible to install a meter or measuring device, some other satisfactory method of measuring may be designated by the Water Department.

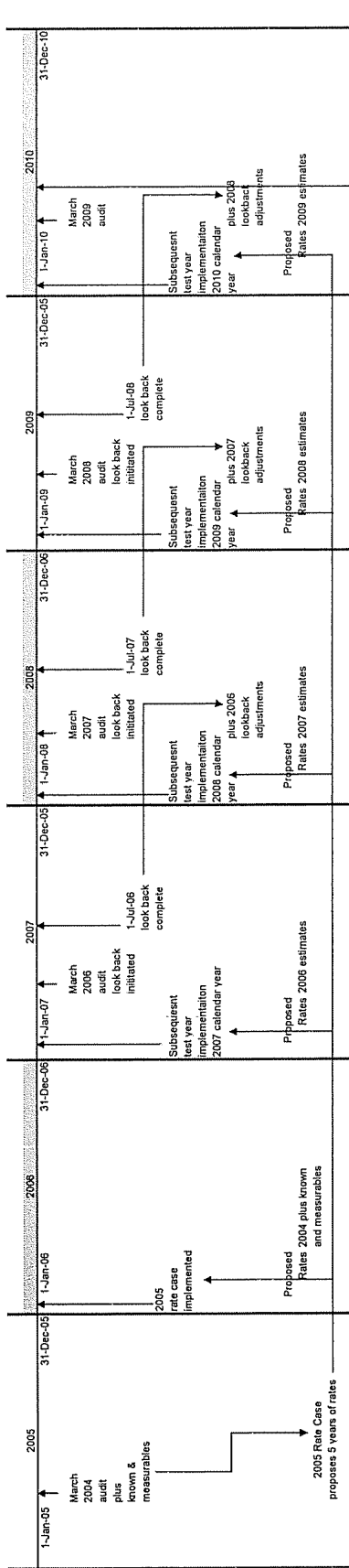
(5) Notice of Proposed Changes: The Water Department shall give written notice to Council at least 30 days in advance of the filing of notice of any proposed change in rates or charges or of any proposed revision in service rates, and shall submit therewith financial, engineering and other data upon

Sample Ordinance (Philadelphia, Pennsylvania)

which the proposed sewer rates and charges are based. Proposed revisions of rates to be made within 90 days prior to the enactment of the next annual operating budget shall be submitted to Council forthwith.[Note 10]

(6) Annual Report: Sewer rates and charges shall be reviewed by the Water Department at least once a year, and a report thereof shall be submitted to Council.[Note 11]

Timeline of Proposed Multi-Year Rate Case Events



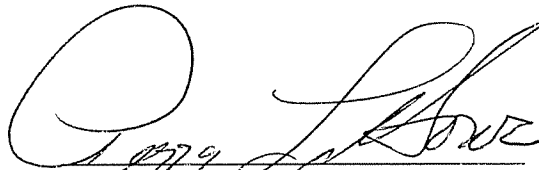
Initiate 2011 Rate Case - if necessary
 Based on 2009 audit plus known and measurable
 proposes 5 years of rates - 2011 through 2015

AFFIDAVIT

COMMONWEALTH OF KENTUCKY

COUNTY OF CAMPBELL

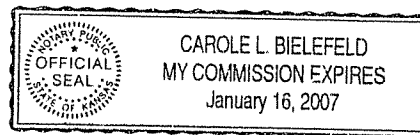
Affiant, Peggy L. Howe, after being first sworn, deposes and says that the foregoing prepared testimony is true and correct to the best of her knowledge and belief except as to those matters that are based on information provided to her and as to those she believes to be true and correct.


Peggy L. Howe

This instrument was produced, signed and declared by Peggy L. Howe to be her act and deed the 23rd day of May, 2005.


Notary Public

My Commission expires: 1-16-2007



COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter Of:

APPLICATION OF NORTHERN KENTUCKY)
WATER DISTRICT FOR AUTHORITY TO)
ISSUE REVENUE BONDS) CASE NO.
FOR APPROVAL OF) 2005-00148
FINANCING, FOR APPROVAL OF)
CONSTRUCTION, AND FOR ADJUSTMENT)
IN WATER RATES)

PREFILED TESTIMONY OF JAMES C. SPARROW

Q 1 Please state your name and address.

A James C. Sparrow, CPA.

Q 2 By whom and in what capacity are you employed?

A I am employed by Rankin, Rankin and Company, Certified Public Accountants.

Q 3 How long have you held your present position?

A I have been a partner in the firm since 1980.

Q 4 Briefly state your professional background.

A I have been a certified public accountant since 1975 and have served in auditing capacity since that time. I am currently the partner in charge of our firm's audit related services.

Q 5 Have you previously testified before the Public Service Commission of Kentucky?

A Yes. I previously testified in what was at that time called Kenton County Water District No. 1, Case No. 94-316 and in the last two rate cases for Northern Kentucky Water District, Case Nos. 2002-0105 and 2003-00224.

Q 6 What service did you and your firm provide to the District in relation to the present case?

A Our firm was retained to provide consulting services and to provide certain exhibits requested by the Public Service Commission on behalf of the District.

Q 7 Was one of those exhibits the audited financial statements of Northern Kentucky Water District for the year ended December 31, 2004?

A Yes.

Q 8 And is that filed with the application as Exhibit E?

A Yes.

Q 9 Did you also prepare Exhibit K?

A Yes, Exhibit K is the pro-forma income statement and balance sheet of Northern Kentucky Water District for the pro-forma period ended December 31, 2004. This exhibit is an attempt to portray the adjustments and pro-forma changes which were prepared by Mrs. Howe in Exhibit N.

Q 10 Does this complete your prefiled testimony?

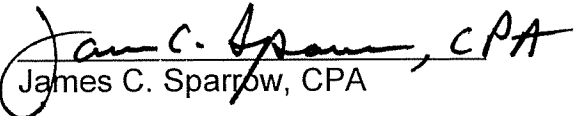
A Yes.

AFFIDAVIT

COMMONWEALTH OF KENTUCKY

COUNTY OF KENTON

Affiant, James C. Sparrow, after being first sworn, deposes and says that the foregoing prepared testimony is true and correct to the best of his knowledge and belief except as to those matters that are based on information provided to him and as to those he believes to be true and correct.


James C. Sparrow, CPA

This instrument was produced, signed and declared by James C. Sparrow to be his act and deed the 23 day of May, 2005.

Deane M. Walker
Notary Public

My Commission expires: 3-10-2009



RECYCLED PAPER MADE FROM 20% POST CONSUMER CONTENT



Exhibit R
2006, 2007, 2008, 2009
Project List

NKWD
Rate Case 2005-00148
Exhibit R
Witness: Harrison

Page #	PSC #	Northern Kentucky Water District Projects	Tracking Acct #	Total Project Cost	Funding Source
2006 Projects					
1	9	Install Third Pump At Ripple Creek PS		\$160,000	BAN 2006
2	110	FTTP Ultraviolet Disinfection (Construction)		\$3,500,000	BAN 2006
3	86	MPTP Chemical Building/Raw Water PS/Transfer Pipe - 3 Projects (Construction)	184-0435	\$4,000,000	BAN 2006
4	89	TMTP Tube Settler Replacement		\$210,000	BAN 2006
5	32	Bristow Road P.S. 12" to Bristow Road	184-0108	\$90,000	BAN 2006
6	33	Narrows Rd. (connecting ext 16" & 12")	184-0109	\$96,000	BAN 2006
7	37	Four & Twelve Mile Rd. (Nelson to Hwy 1566)	184-0113	\$670,000	BAN 2006
8	38	Washington Trace Rd. (12Mile Rd to Hwy 1996)	184-0114	\$1,245,000	BAN 2006
9	40	KY 9 (36" Moock Rd to Newport Steel Entrance)	184-0115	\$1,500,000	BAN 2006
10	50	4 Mile Pk. (Uhl Rd. south to End of Line)	184-0119	\$230,000	BAN 2006
11	51	Gunkel Rd (Upper Eight Mile to Fender Rd)	184-0120	\$500,000	BAN 2006
12	55	Water Main Replacement Program 2006		\$2,100,000	BAN 2006
13	56	Mains into Unserved Areas 2006		\$250,000	BAN 2006
14	57	U.S.27 From Ripple Creek BPS to E. Alex Pike	184-0133	\$1,700,000	BAN 2006
15	58	U.S. 27 From E. Alexandria Pike to Main	184-0134	\$1,500,000	BAN 2006
16	62	Hands Pike from Ky 16 to Edwin Drive	184-0138	\$285,000	BAN 2006
17	63	Ky. 16, from Hands Pike to Klette Road	184-0139	\$275,000	BAN 2006
18	105	Utility Information Management - EMA Recommendations		\$1,000,000	BAN 2006
19	74	Newport LS/HS Interconnect/Regulated Woodlawn	184-0143	\$520,000	BAN 2006
20	106	Radio Read Meters for Kenton & Campbell Areas 2006		\$1,300,000	BAN 2006
Total 2006 Projects				\$21,131,000	

2007 Projects					
21	8	SCADA Upgrade Phase 3	184-411.502	\$2,400,000	BAN 2007
22	88	MPTP Filter Rehabilitation		\$530,000	BAN 2007
23	91	Standby Generator at Dudley PS		\$275,000	BAN 2007
24	75	Newport Low Service Interconnect 30"	184-0144	\$750,000	BAN 2007
25	77	Ky. 547, from Washington St. to Nelson Road	184-0146	\$965,000	BAN 2007
26	78	Four Mile Pk. (Poplar Rdg. To Upper 8 Mile)	184-0147	\$510,000	BAN 2007
27	79	Dudley Discharge 12" - 30"	184-0148	\$2,800,000	BAN 2007
28	80	Water Main Replacement Program 2007		\$2,100,000	BAN 2007
29	81	Mains into Unserved Areas 2007		\$250,000	BAN 2007
30	107	Radio Read Meters for Kenton & Campbell Areas 2007		\$800,000	BAN 2007
Total 2007 Projects				\$11,380,000	

2008 Projects					
31	95	New Water Tank, Rossford; retire existing Lumley & Rossford Tanks		\$1,000,000	BAN 2008
32	20	US27 from State Rt 824 to Pendleton Co Meter KDOT	184-0033	\$770,000	BAN 2008
33	43	Low Gap Rd. (Ky9 to Existing Dead End)	184-0056	\$192,000	BAN 2008
34	100	Twelve Mile Rd., KY 10 to KY 1566		\$450,000	BAN 2008
35	101	Year 2008 Water Main Replacement Program		\$2,100,000	BAN 2008
36	103	Mains into Unserved Areas 2008		\$250,000	BAN 2008
37	115	Ky 2043, Banklick Station Road to Ky 16		\$2,400,000	BAN 2008
38	108	Radio Read Meters for Kenton & Campbell Areas 2008		\$800,000	BAN 2008
Total 2008 Projects				\$7,962,000	

2009 Projects					
39	111	FTTP Post-Filtration GAC (Part 1)		\$1,000,000	BAN 2009
40	112	Standby Generator at TMTP PS		\$170,000	BAN 2009
41	113	Ky 536, US 27 to Pond Creek Road - 12"		\$1,990,000	BAN 2009
42	114	Interconnect 1010/1017 12"		\$500,000	BAN 2009
43	116	Year 2009 Water Main Replacement Program		\$2,100,000	BAN 2009
44	118	Mains into Unserved Areas 2009		\$250,000	BAN 2009
45	109	Radio Read Meters for Kenton & Campbell Areas 2009		\$800,000	BAN 2009
Total 2009 Projects				\$6,810,000	

Ripple Creek Pump Station Expansion

Water Quality and Production Project

PROJECT TYPE: Plant and Pump Station Control Upgrade

FUNDING SOURCE		
\$	160,000	BAN 2006
\$	160,000	Total Cost

BUDGET BY YEAR			
2006	\$	160,000	
TOTAL COSTS	\$	160,000	

PROJECT DESCRIPTION
 This project expands the Ripple Creek pump station through the addition of a third pump which it was designed to accommodate. The third pump will allow the station to meet system demands while providing a back-up pump when two pumps must be run. This project was called for in the July 2001 NKWD "Water Distribution System Master Plan".



Ripple Creek Pump Station

UV Disinfection at the Fort Thomas Treatment Plant

Water Quality and Production Project

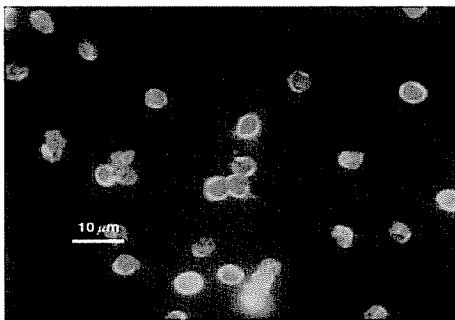
PROJECT TYPE: Plant Upgrade

FUNDING SOURCE		
\$	500,000	BAN 2005
\$	<u>3,500,000</u>	BAN 2006
\$	4,000,000	Total Cost

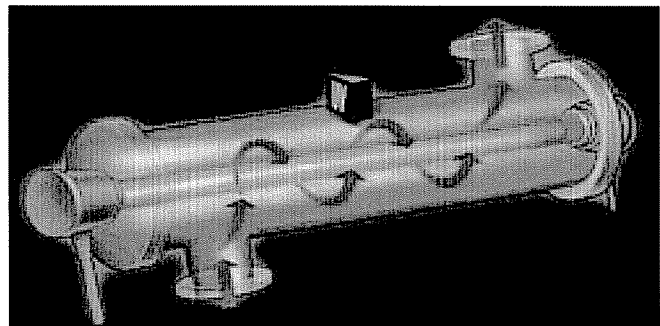
BUDGET BY YEAR		
2005		500,000
2006		3,500,000
TOTAL COSTS	\$	4,000,000

PROJECT DESCRIPTION

The Fort Thomas Treatment Plant (FTTP) supplies water to about 80% of NKWD customers. Evaluations of FTTP finished water have shown that NKWD will experience difficulty meeting future, more stringent regulations. The ability of UV to inactivate microbiological pathogens such as cryptosporidium, giardia and viruses while minimizing the formation of disinfection byproducts makes it an attractive technology to NKWD. It retrofits easily into existing plants, is environmentally friendly because it does not use chemicals, does not produce byproducts and has low capital and operating costs. UV is also an inexpensive process to add CT (contact time) in a treatment plant, which is required by the Kentucky Division of Water. The first potable water UV application was approved by the Kentucky Division of Water in 2004 in Shelbyville.



cryptosporidium



UV reactor

Memorial Parkway Treatment Plant Chemical Building Replacement

Water Quality and Production Project

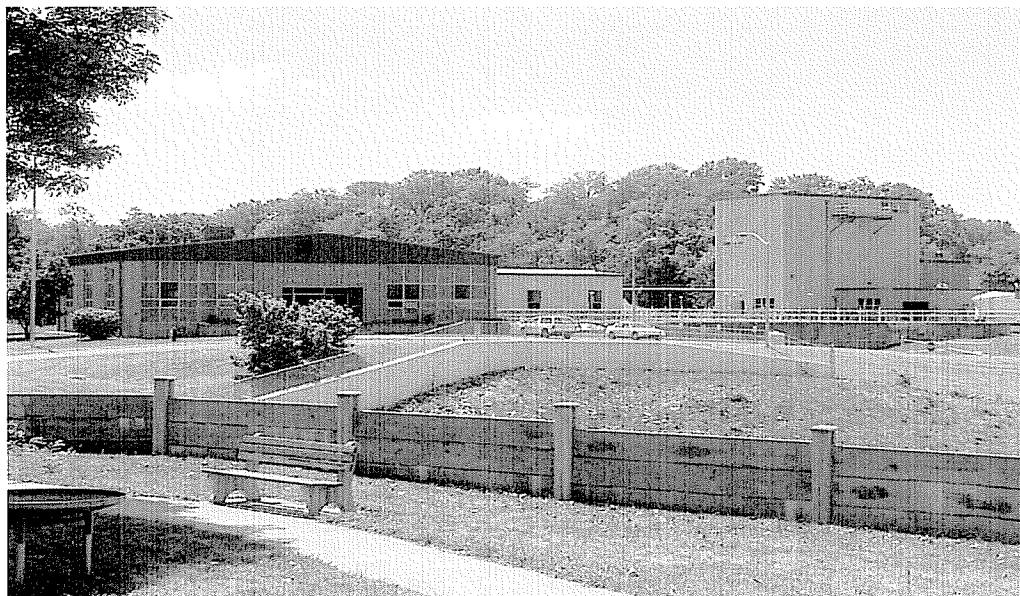
PROJECT TYPE: Water Treatment Plant Upgrade

FUNDING SOURCE		
\$	500,000	BAN 2005
\$	<u>4,000,000</u>	BAN 2006
		Total Cost

BUDGET BY YEAR			
2005	\$		500,000
2006	\$		4,000,000
TOTAL COSTS	\$		4,500,000

PROJECT DESCRIPTION

NKWD has commissioned 5 studies since 1999 that evaluated the condition of the Memorial Parkway treatment plant. All of the studies describe and detail the poor condition of the chemical building in particular. The building was designed for dry chemical storage and does not meet the present required treatment which includes 10 liquid chemicals. There is inadequate chemical containment, the feed equipment is out of date and the building has structural deficiencies. On June 1, 2004, NKWD hired CH2MHill to propose 4 options to address the chemical building deficiencies. This study is being finalized and reviewed by staff with an an early 2005 recommendation to the Board planned. This project also includes some modifications to the reservoir pumping station and pipework.



Taylor Mill Treatment Plant Tube Settler Replacement

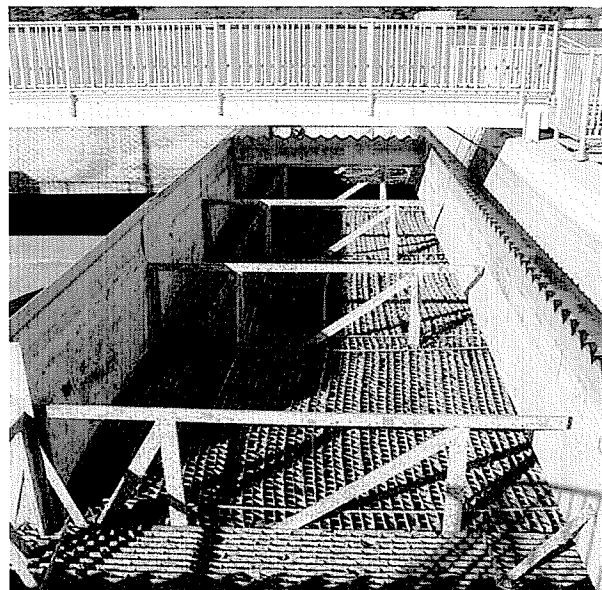
Water Quality and Production Project

PROJECT TYPE: Plant Upgrade

FUNDING SOURCE		
\$	210,000	BAN 2006
\$	210,000	Total Cost

BUDGET BY YEAR	
2006	210,000
TOTAL COSTS	\$ 210,000

PROJECT DESCRIPTION
 Tube settlers are 3' plastic tubes that are arranged vertically in the sedimentation basins at water treatment plants to assist in sediment removal. We have saved approximately 15% in chemical costs since tube settlers were installed. The existing tube settlers at the Taylor Mill Treatment Plant are approximately 10 years old which is the normal lifespan for this equipment. We have had trouble with the tube settlers breaking apart and stopping up the sedimentation basin drain lines. New tube settlers are constructed from more resilient material. This project was recommended in the May 2004 "Asset Management Program Final Report".



Existing tube settlers at the Taylor Mill Treatment Plant

CAPITAL ITEM NAME Bristow Rd P.S. to Bristow Rd via Connector Rd.

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

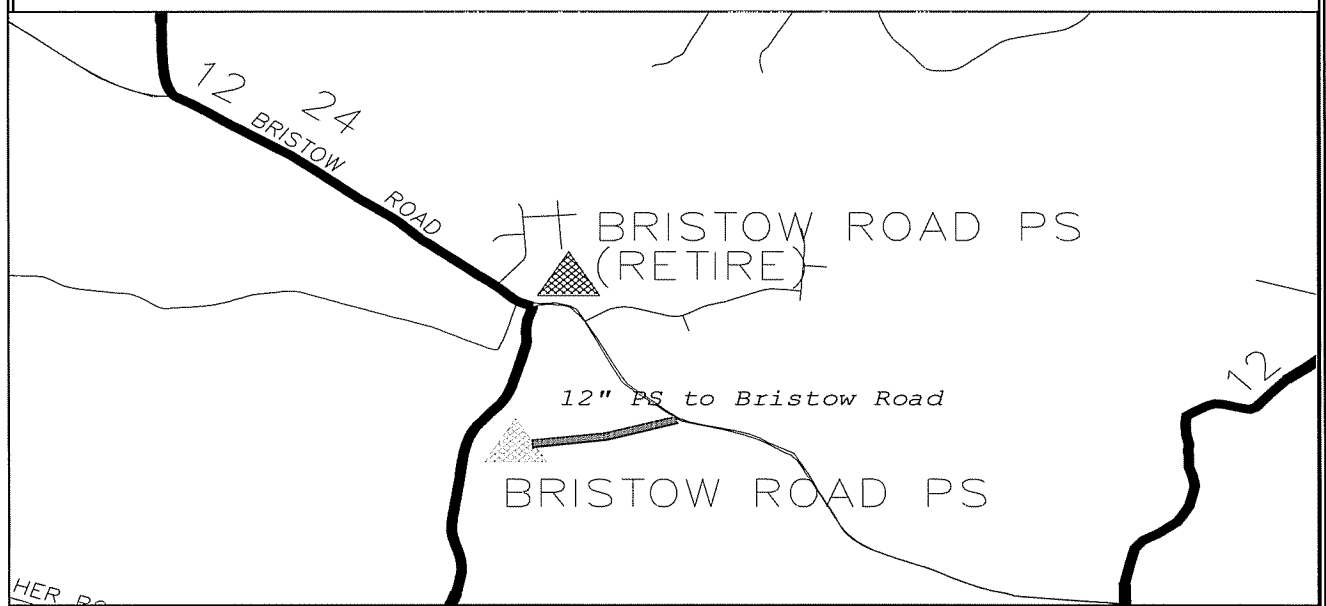
FUNDING SOURCE		
\$	90,000	2006 BAN
\$	90,000	Total Cost

BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	90,000
TOTAL COSTS	\$	90,000

PROJECT DESCRIPTION (184-0108)

The proposed project involves constructing a new 12 inch water main along the new Banklick Road, Independence, Kenton County, Kentucky. The length of this project is approx. 1,540 LF. No new right-of-ways of easements will be needed. The estimated cost for the project is \$90,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to additional customers, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

MAPS/GRAPHICS



CAPITAL ITEM NAME Narrows Rd (Connecting exist. 16" and 12" mains)

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	96,000	2006 BAN
\$	96,000	Total Cost

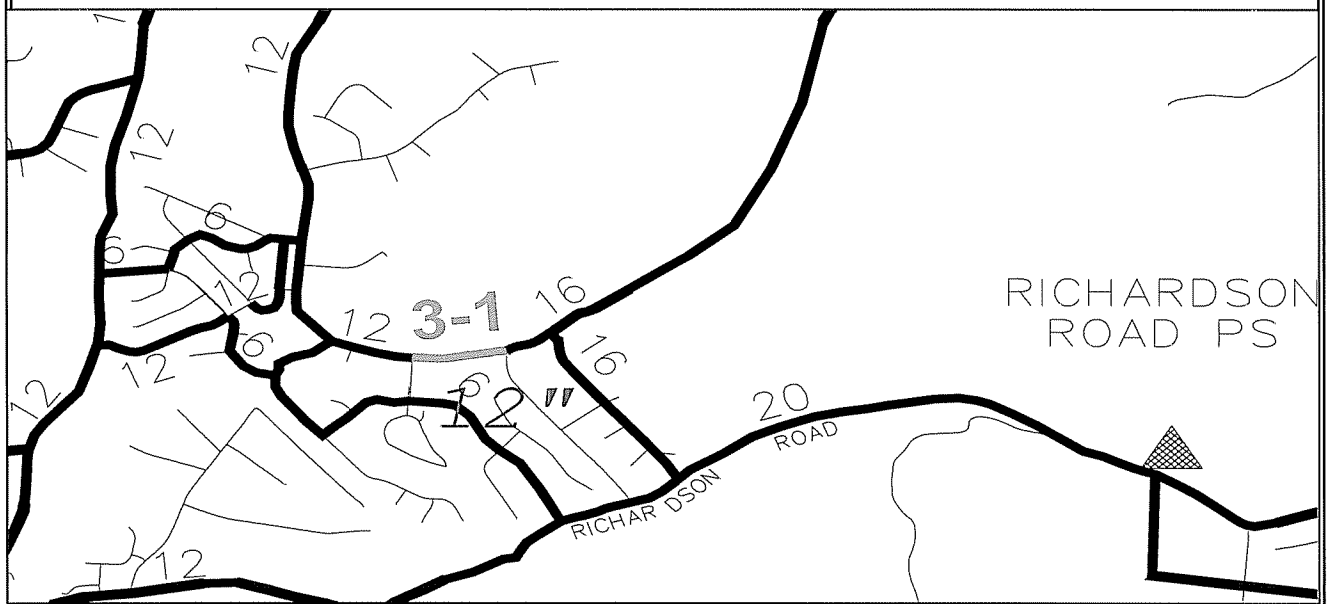
BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	96,000
TOTAL COSTS	\$	96,000

PROJECT DESCRIPTION (184-0109)

The proposed project involves constructing a new 12 inch water main along Narrows Road from existing 12" to existing 16" in the City of Erlanger, Kenton County, Kentucky. The length of this project is approx. 3,700 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$96,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to additional customers, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

MAPS/GRAPHICS

Proposed improvements shown as 3-1



CAPITAL ITEM NAME Four and Twelve Mile Rd.(from Nelson to Hwy 1566)

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	670,000	2006 BAN
\$	670,000	Total Cost

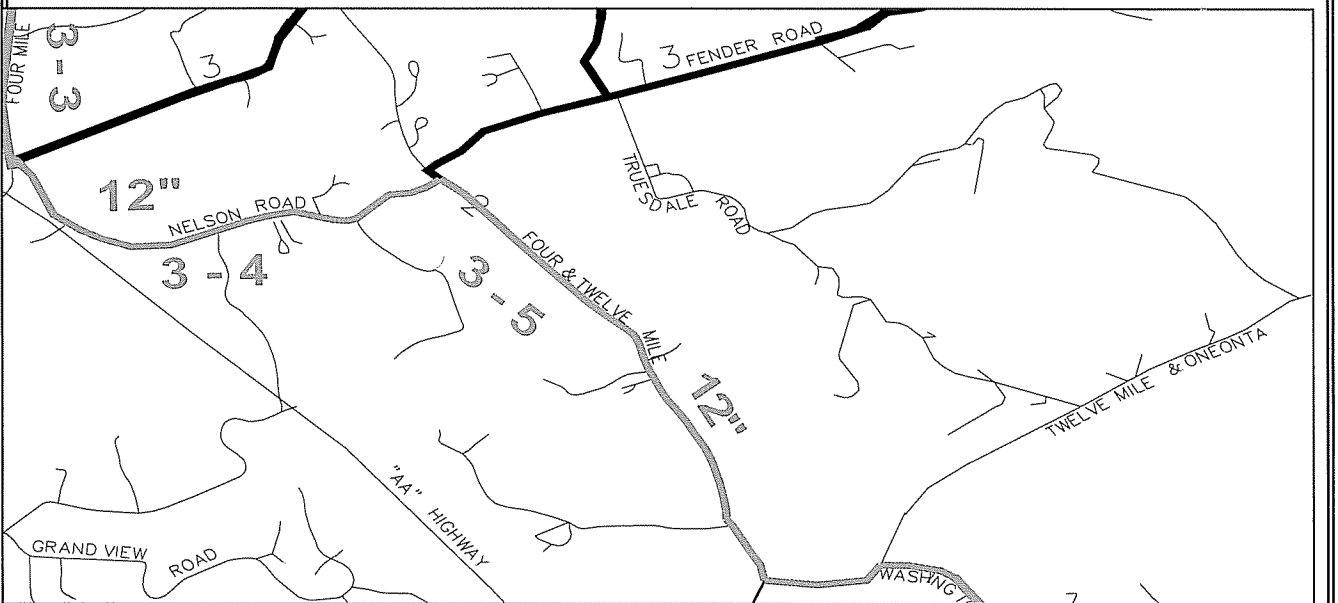
BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	670,000
TOTAL COSTS	\$	670,000

PROJECT DESCRIPTION (184-0113)

The proposed project involves constructing a new 12 inch water main along Four & Twelve Mile Road from Nelson Road to Ky. Hwy. 1566 in southern Campbell County, Kentucky. The length of this project is approx. 7,700 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$670,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to additional customers, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

MAPS/GRAPHICS

Proposed improvements shown as 3-5



CAPITAL ITEM NAME Washington Trace Rd.(from Twelve Mile Rd to Hwy. 1996)

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	1,245,000	2006 BAN
\$	1,245,000	Total Cost

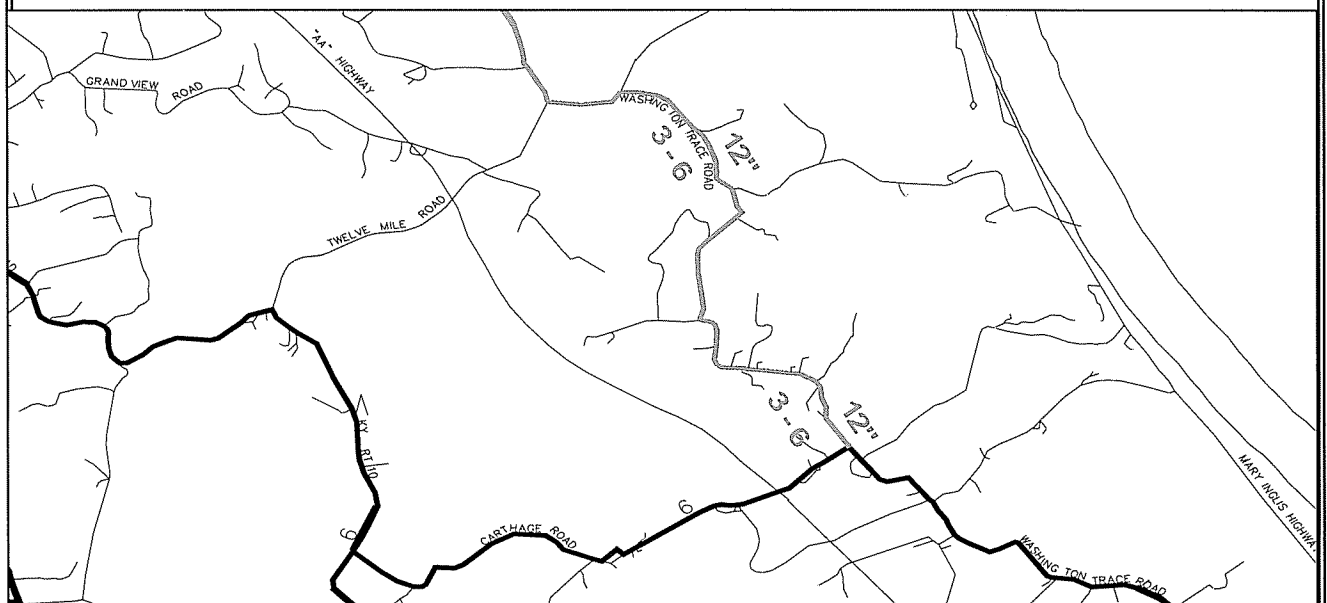
BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	1,245,000
TOTAL COSTS	\$	1,245,000

PROJECT DESCRIPTION (184-0114)

The proposed project involves constructing a new 12 inch water main along Washington Trace Road from Twelve Mile Road to Hwy.1996 in Campbell County, Kentucky. The length of this project is approx. 14,300 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$1,245,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to additional customers, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

MAPS/GRAPHICS

Proposed improvements shown as 3-6



CAPITAL ITEM NAME KY 9 (30" main from Moock Rd. to Newport Steel entrance)

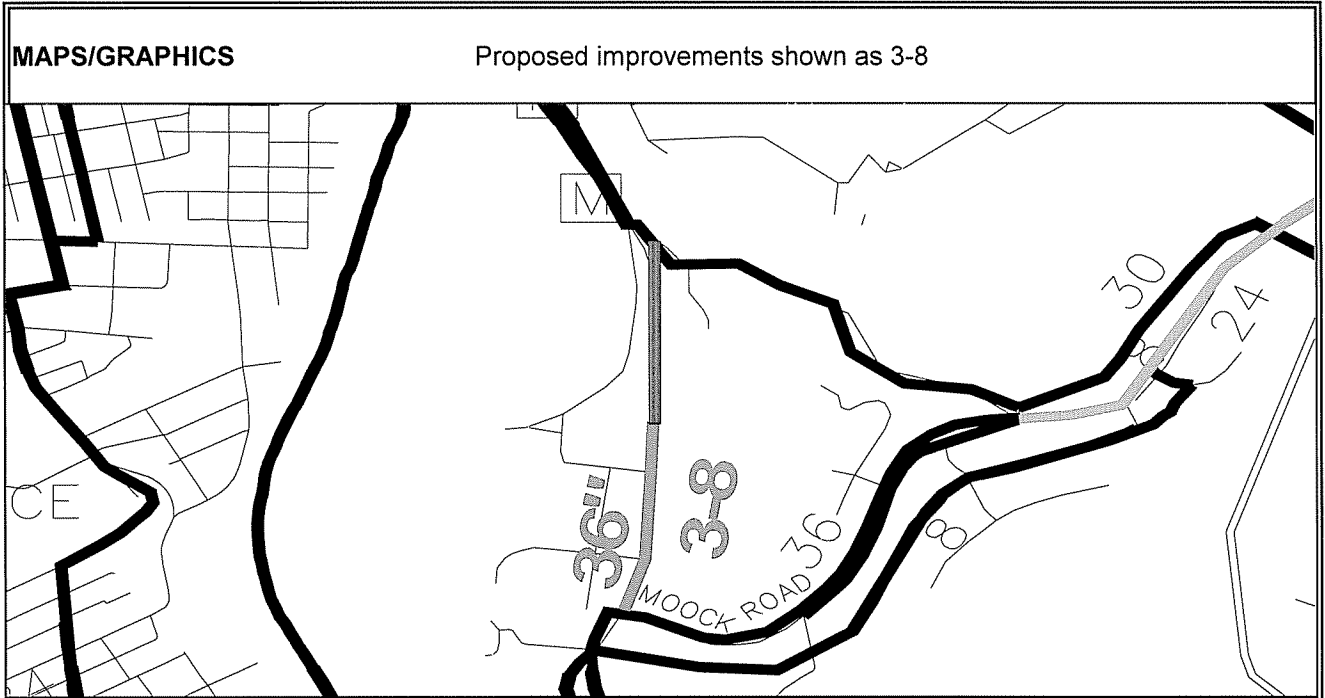
Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	1,500,000	2006 BAN
\$	1,500,000	Total Cost

BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	1,500,000
TOTAL COSTS	\$	1,500,000

PROJECT DESCRIPTION (184-0115)
 The proposed project involves constructing a new 36 inch water main along Ky. 9 from Moock Road to existing 30" water main in the City of Wilder, Campbell County, Kentucky. The length of this project is approx. 4,000 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$1,500,000. This project is designed to strengthen and improve the transmission system. The District's Master Plan identified this as a needed hydraulic improvement.



CAPITAL ITEM NAME Four Mile Pk. (from Uhl Rd. south to End of Line on 4 Mile)

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	230,000	2006 BAN
\$	230,000	Total Cost

BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	230,000
TOTAL COSTS	\$	230,000

PROJECT DESCRIPTION (184-0119)

The proposed project involves constructing a new 8 inch water main along Four Mile Pike to interconnect the existing water mains in Silvergrove, Campbell County, Kentucky. The length of this project is approx. 3,000 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$230,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to additional customers, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

MAPS/GRAPHICS

Proposed improvements shown as 5-1



CAPITAL ITEM NAME Gunkel Rd. (from Upper Eight Mile Rd. to Fender Rd.)

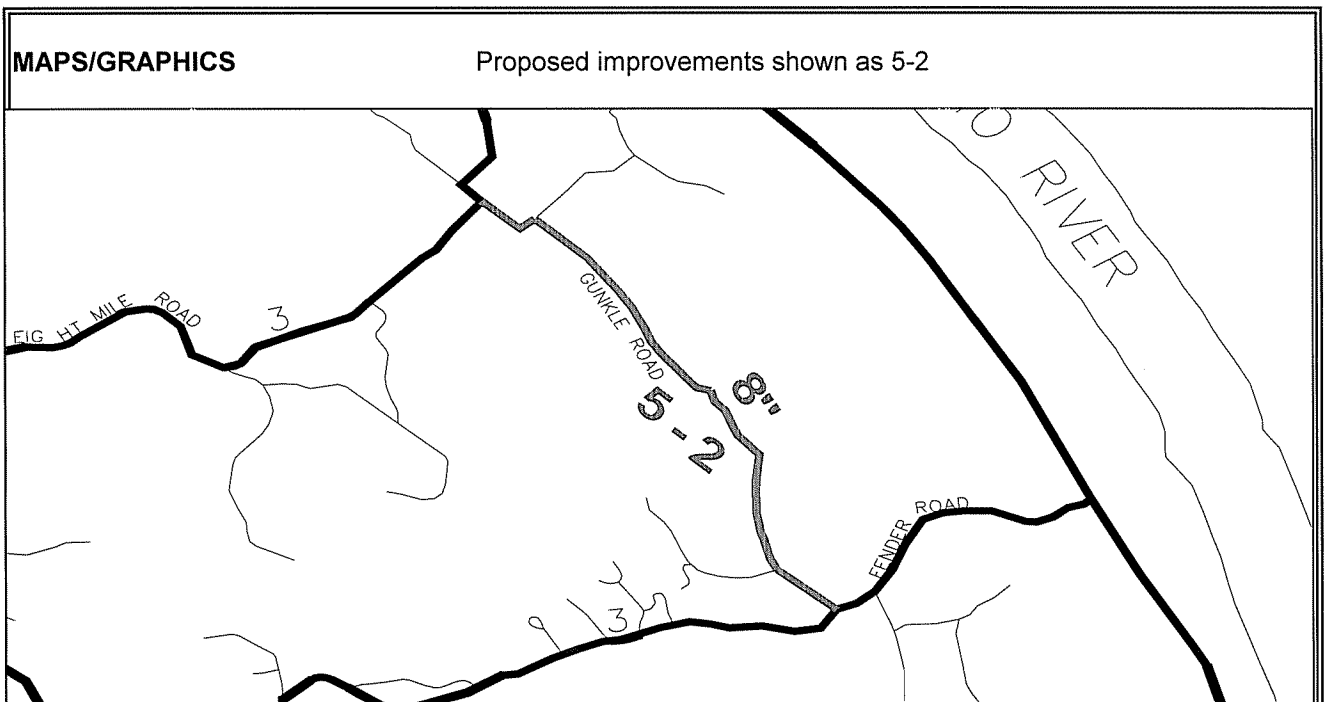
Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	500,000	2006 BAN
\$	500,000	Total Cost

BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	500,000
TOTAL COSTS	\$	500,000

PROJECT DESCRIPTION (184-0120)
 The proposed project involves constructing a new 8 inch water main along Gunkel Road from Eight Mile Road to Fender Road in southern Campbell County, Kentucky. The length of this project is approx. 9,000 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$500,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to additional customers, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.



CAPITAL ITEM NAME Water Main Replacement Program 2006

Engineering and Distribution Project

PROJECT TYPE: Water Main Replacement

FUNDING SOURCE		
\$	2,100,000	2006 BAN
\$	2,100,000	Total Cost

BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	2,100,000
TOTAL COSTS	\$	2,100,000

PROJECT DESCRIPTION

This proposed program involves working with various cities in the District's service area to replace old water mains which are deteriorating. The District plans to replace the existing water mains in conjunction with City Street Replacement Programs. Working together with Cities saves the District restoration cost and coordinates our work with the street work. This program is designed to replace existing 4", 6" or 8" unlined cast iron water mains, which the District has experienced some problems with. These funds are part of the District's proposed program designed to replace or rehabilitate 1% of the District's distribution system annually. Other funding sources will be the Operation Capital Budget for main replacement and the Operations & Maintenance Budget for main rehabilitation.

MAPS/GRAPHICS

N/A

CAPITAL ITEM NAME Mains into Unserved Areas 2006

Engineering and Distribution Project

PROJECT TYPE: Water Main Extension

FUNDING SOURCE		
\$	250,000	2006 BAN
\$	250,000	Total Cost

BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	250,000
TOTAL COSTS	\$	250,000

PROJECT DESCRIPTION
 These funds will be utilized to extend water mains into unserved areas. The total project funding may include these funds along with grant funds, county funds and surcharges.

MAPS/GRAPHICS
 N/A

CAPITAL ITEM NAME U.S. 27, from Ripple Creek P.S. to E. Alex. Pike

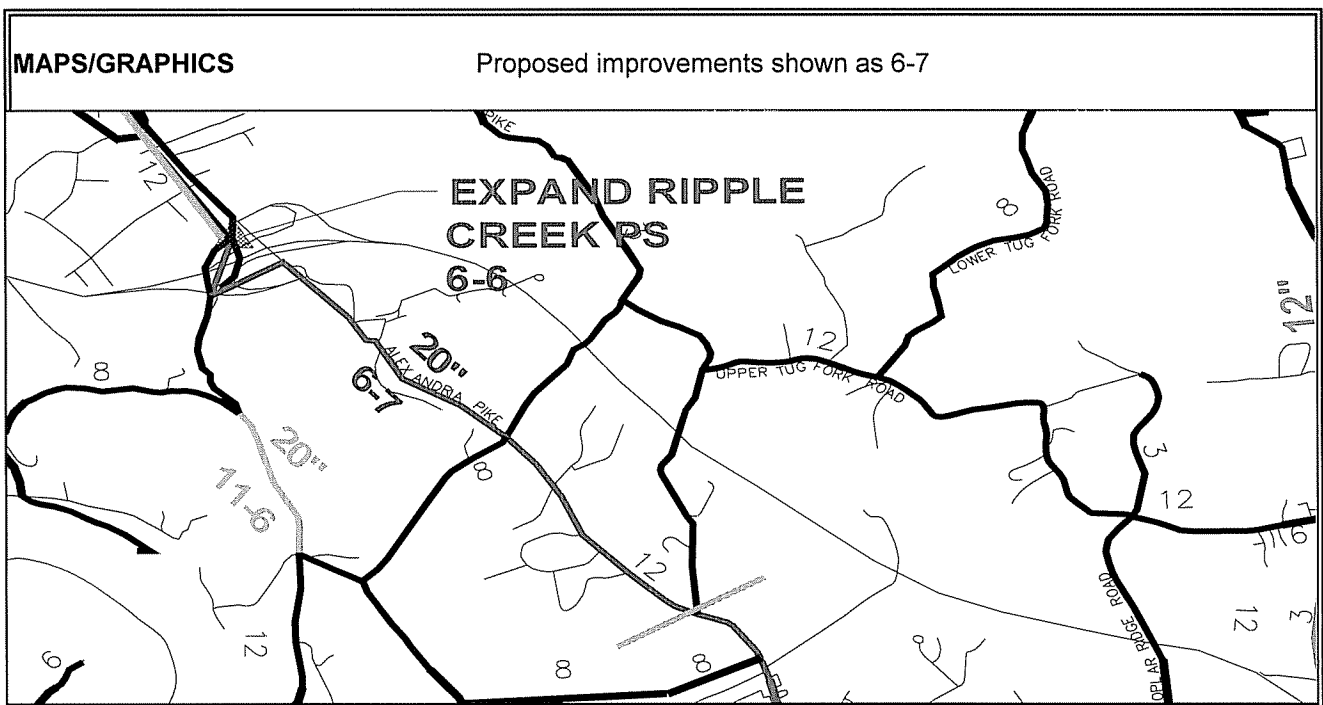
Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	1,700,000	2006 BAN
\$	1,700,000	Total Cost

BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	1,700,000
TOTAL COSTS	\$	1,700,000

PROJECT DESCRIPTION (184-133)
 The proposed project involves constructing a new 20 inch water main from the Ripple Creek Pump Station along U.S. 27 to East Alexandria Pike, Alexandria, Campbell County, Kentucky. The length of this project is approx. 11,100 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$1,700,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.



CAPITAL ITEM NAME U.S. 27, from E. Alex. Pike to Main St.

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	1,500,000	2006 BAN
\$	1,500,000	Total Cost

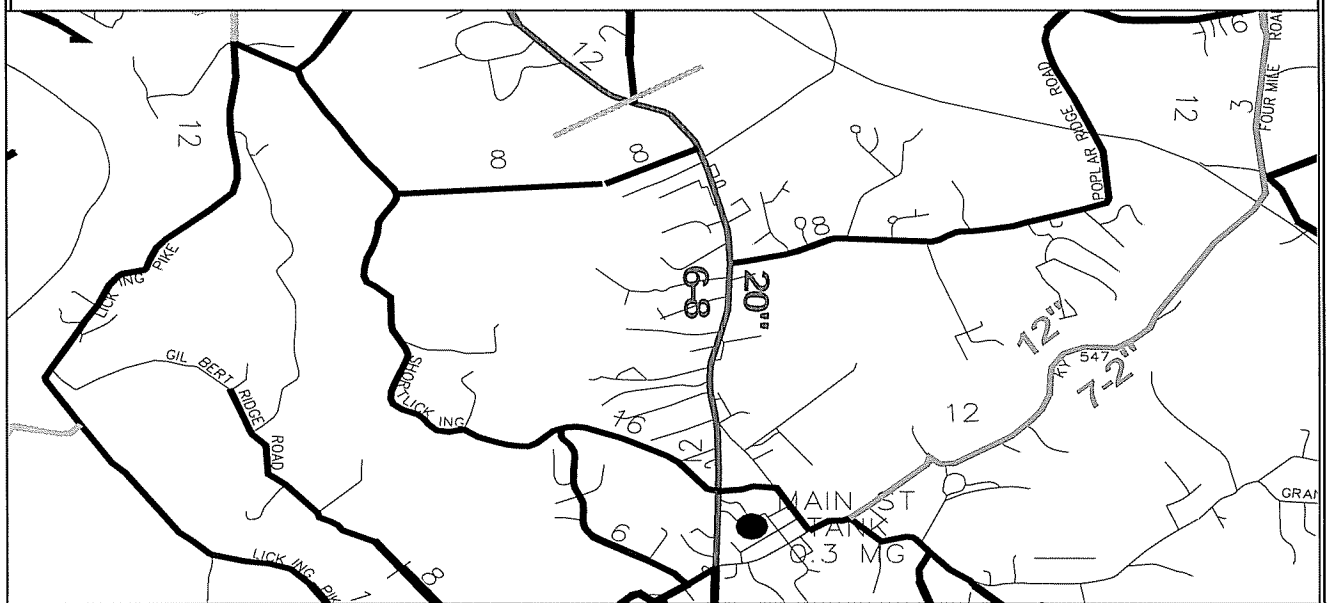
BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	1,500,000
TOTAL COSTS	\$	1,500,000

PROJECT DESCRIPTION (184-134)

The proposed project involves constructing a new 20 inch water main along U.S. 27 from East Alexandria Pike to Main Street, Alexandria, Campbell County, Kentucky. The length of this project is approx. 9,700 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$1,500,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

MAPS/GRAPHICS

Proposed improvements shown as 6-8



CAPITAL ITEM NAME Hands Pike from Ky. 16 to Edwin Drive

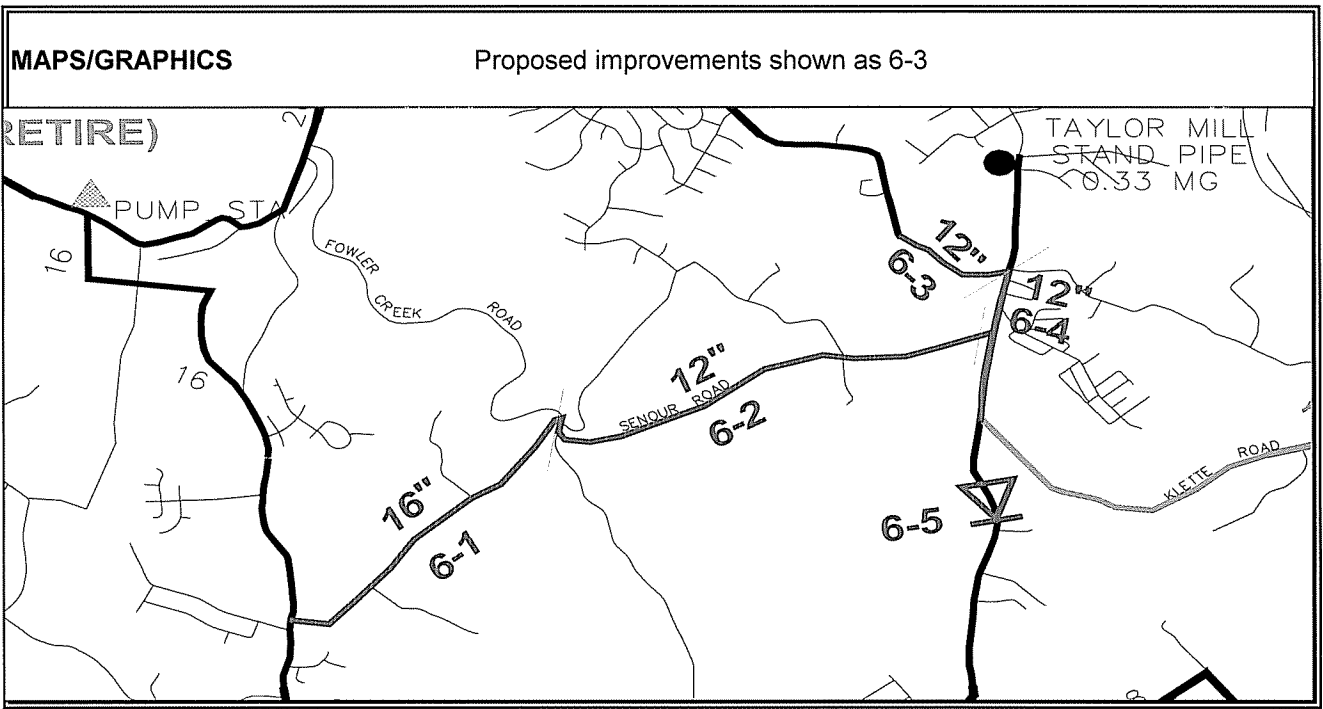
Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	285,000	2006 BAN
\$	<u>285,000</u>	Total Cost

BUDGET BY YEAR			
2001	\$		0
2002	\$		0
2003	\$		0
2004	\$		0
2005	\$		0
2006	\$		285,000
TOTAL COSTS	\$		285,000

PROJECT DESCRIPTION (184-138)
 The proposed project involves constructing a new 12 inch water main along Hands Pike from Ky. 16 to Edwin Drive, Covington, Kenton County, Kentucky. The length of this project is approx. 2,500 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$285,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.



CAPITAL ITEM NAME Ky. 16, from Hands Pike to Klette Road

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	275,000	2006 BAN
\$	<u>275,000</u>	Total Cost

BUDGET BY YEAR		
2001	\$	0
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	<u>275,000</u>
TOTAL COSTS	\$	275,000

PROJECT DESCRIPTION (184-139)
 The proposed project involves constructing a new 12 inch water main along Ky. 16 from Hands Pike to Klette Road, Covington/Independence, Kenton County, Kentucky. The length of this project is approx. 3,000 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$275,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

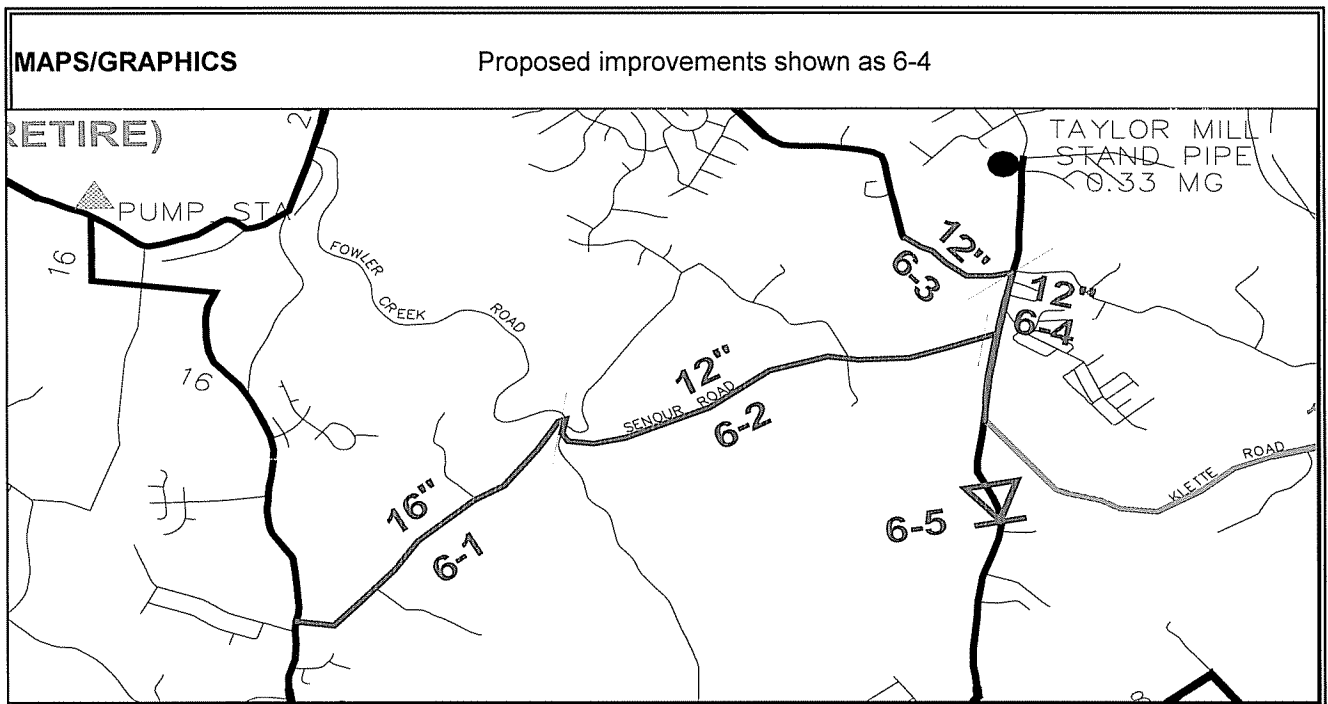


Exhibit R - 2006



CAPITAL ITEM NAME: I UIM Analysis & Recommendations

Customer Service Project

PROJECT TYPE: UIM Recommendations

FUNDING SOURCE		
\$	200,000	BAN 2005
	<u>1,000,000</u>	BAN 2006
<hr/>		
\$	<u>1,200,000</u>	Total Cost

BUDGET BY YEAR		
2005	\$	200,000
2006		<u>1,000,000</u>
2007		<u>0</u>
2008		<u>0</u>
2009		<u>0</u>
<hr/>		
TOTAL COSTS	\$	<u>1,200,000</u>

PROJECT DESCRIPTION

This project encompasses the findings and recommendations included in the February 13, 2003 Utility Information Management Needs Assessment study performed by EMA. Twenty recommendations have been proposed to continue the strategic direction established in this brief overview established during the CIS replacement process. Each of the twenty recommendations have a suggested priority level and order of importance. Costs conveyed are rough estimates for completion of each task.

CAPITAL ITEM NAME Newport LS/HS Interconnect/Regulated Woodlawn

Engineering and Distribution Project

PROJECT TYPE: Redundancy Water Main

FUNDING SOURCE		
\$	520,000	2006 BAN
\$	<u>520,000</u>	Total Cost

BUDGET BY YEAR		
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	520,000
2007	\$	0
TOTAL COSTS	\$	<u>520,000</u>

PROJECT DESCRIPTION (184-143)

This project involves constructing a new transmission water main to interconnect the existing 1017 elevation to the Newport's Low Service 740 elevation system, Newport Campbell County, Kentucky. This project is designed to strengthen the District's water transmission system and provide some redundancy for the Newport's Low Service area. The District's Master Plan Addendum for Reliability and Redundancy Analyses identified this as a needed improvement.

MAPS/GRAPHICS

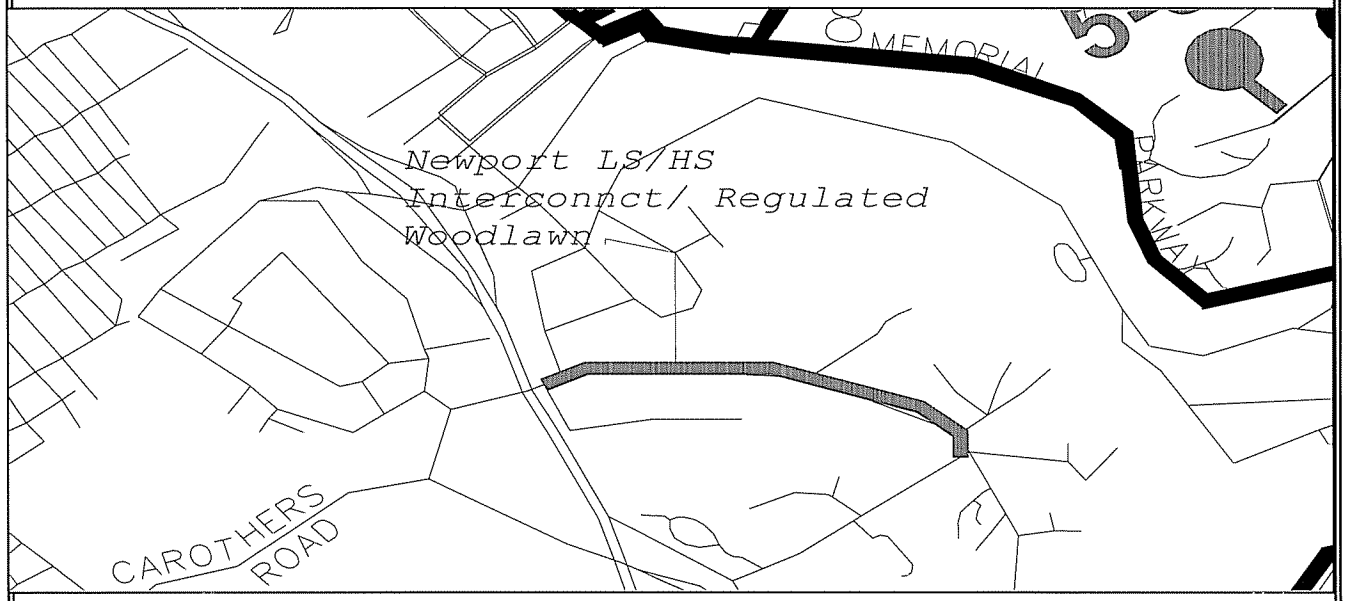


Exhibit R - 2006



CAPITAL ITEM NAME **Kenton & Campbell Meter Change-Out**

Customer Service Project

PROJECT TYPE: Meter Change Out

FUNDING SOURCE		
\$	<u>1,300,000</u>	2006 BAN
	<u> </u>	
	<u> </u>	
\$	<u>1,300,000</u>	Total Cost

BUDGET BY YEAR		
2005	\$	<u>0</u>
2006	\$	<u>1,300,000</u>
2007	\$	<u>0</u>
2008	\$	<u>0</u>
2009	\$	<u>0</u>
TOTAL COSTS	\$	<u>1,300,000</u>

PROJECT DESCRIPTION
 The project encompasses the systematic replacement of existing water meters with an AMR system.

SCADA UPGRADE PHASE 3

Water Quality and Production Project

PROJECT TYPE: Plant and Pump Station Control Upgrade

FUNDING SOURCE		
\$	2.4 million	BAN 2007
\$	2.4 million	Total Cost

BUDGET BY YEAR			
2007	\$		1,200,000
2008	\$		1,200,000
TOTAL COSTS	\$		2,400,000

PROJECT DESCRIPTION

This project provides for the upgrade of the plant computer control system by incorporating automatic feed of potassium permanganate, copper, and carbon at FTTP. The project includes the construction of a new copper sulfate/potassium permanganate chemical building at the head of the north reservoir to replace the current 1881 building that has reached the end of its useful life. The project adds an additional carbon silo to the current one at the head of the north reservoir in order to provide additional storage capacity for use in emergency spill conditions on the Ohio River. The copper sulfate, potassium permanganate and carbon feed system will be tied into the existing master control system and will allow plant operators to monitor and control these systems from any of the 3 water treatment plants. The project also ties in several key valves in the 3 water plants and the distribution system in order to provide for quick shutdown in cases of main breaks and provides for the integration of the Maintenance Software System into the master control system.

Memorial Parkway Treatment Plant Filter Rehabilitation

Water Quality and Production Project

PROJECT TYPE: Plant Upgrade

FUNDING SOURCE		
\$	530,000	BAN 2007
\$	530,000	Total Cost

BUDGET BY YEAR		
2007		530,000
TOTAL COSTS	\$	530,000

PROJECT DESCRIPTION

The Memorial Parkway Treatment Plant (MPTP) has 6 filters. Three of these filters were rebuilt in 2002 with new media, under drains, and an air scour system for cleaning. The other 3 filters have not been rebuilt and are currently not being used. This project will rebuild the final 3 filters to NKWD standards and will provide us with a backup to the 3 filters that are in service and with the ability to treat 20 MGD in the future. This project was recommended in the May 2004 "Asset Management Program Final Report".

Standby Generator at Dudley Pump Station

Water Quality and Production Project

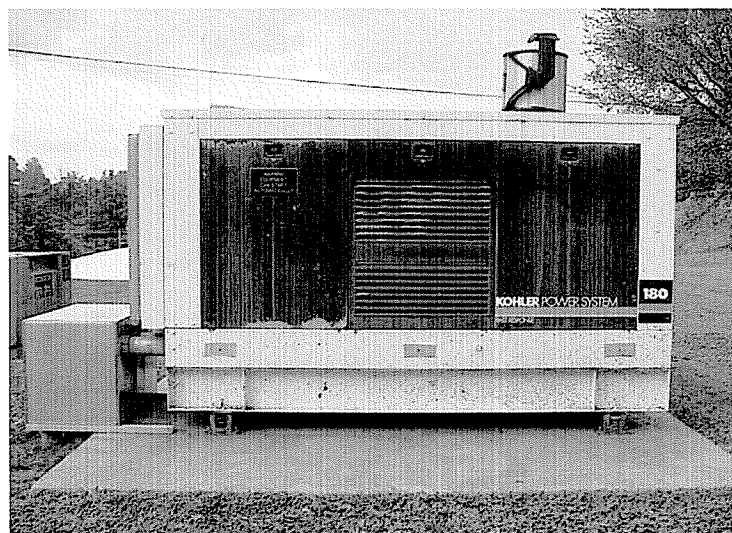
PROJECT TYPE: Pump Upgrade

FUNDING SOURCE		
\$	275,000	BAN 2007
\$	275,000	Total Cost

BUDGET BY YEAR		
2007		275,000
TOTAL COSTS	\$	275,000

PROJECT DESCRIPTION

The Dudley Pump Station (DPS) supplies finished water to about 45% of our customers. The station houses 8 pumps ranging in size from producing 3.4 to 8.6 million gallons per day. The station also houses a sodium hypochlorite feed system which allows us to add disinfectant into the system at that location to keep the chlorine residual at an acceptable level. Although it is not cost-effective to try to provide emergency power through a generator to all 8 pumps located at the DPS, a generator that can supply two pumps will assist us in maintaining some water flow into our system in case of a long term electrical outage. This back-up generator was recommended in the District's 2003 "Vulnerability Assessment".



Back up generator located at Fort Thomas Treatment Plant.

CAPITAL ITEM NAME Newport Low Service Interconnect to 30"

Engineering and Distribution Project

PROJECT TYPE: Redundancy Water Main

FUNDING SOURCE		
\$	750,000	2007 BAN
\$	<u>750,000</u>	Total Cost

BUDGET BY YEAR		
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	750,000
TOTAL COSTS	\$	<u>750,000</u>

PROJECT DESCRIPTION (184-144)
 This project involves constructing a new transmission water main to interconnect the existing 763 elevation 30" water main to the Newport's Low Service 740 elevation system, Newport Campbell County, Kentucky. This project is designed to strengthen the District's water transmission system and provide some redundancy for the Newport's Low Service area. The District's Master Plan Addendum for Reliability and Redunancy Analyses identified this as a needed improvement.



CAPITAL ITEM NAME Ky. 547 (from Washington St. to Nelson Rd. @ 4 Mile Pike)

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	965,000	2007 BAN
\$	965,000	Total Cost

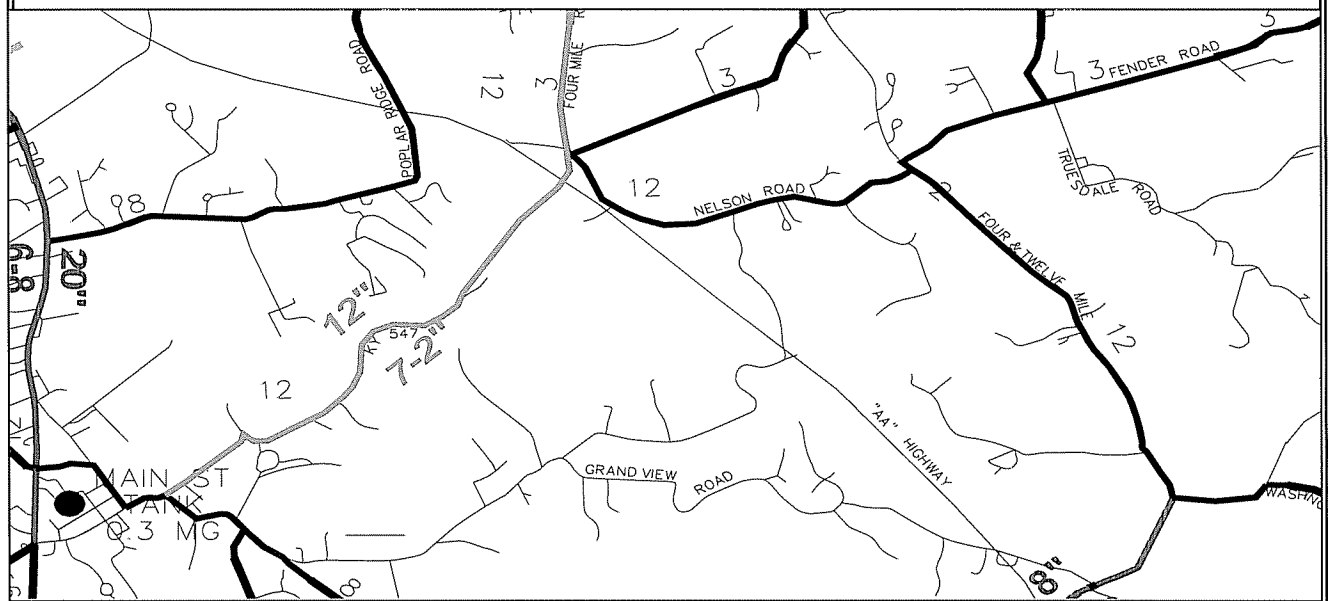
BUDGET BY YEAR		
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	965,000
TOTAL COSTS	\$	965,000

PROJECT DESCRIPTION (184-146)

The proposed project involves constructing a new 12 inch water main along Ky. 547 from Washington Street at Main Street in downtown Alexandria to Nelson Road at Four Mile Pike in Campbell County, Kentucky. The length of this project is approx. 10,600 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$965,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to additional customers, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

MAPS/GRAPHICS

Proposed improvements shown as 7-2



CAPITAL ITEM NAME Four Mile Pk. (from Poplar Rdg. Rd to Upper 8 Mile)

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan
/Replacement

FUNDING SOURCE		
\$	510,000	2007 BAN
\$	510,000	Total Cost

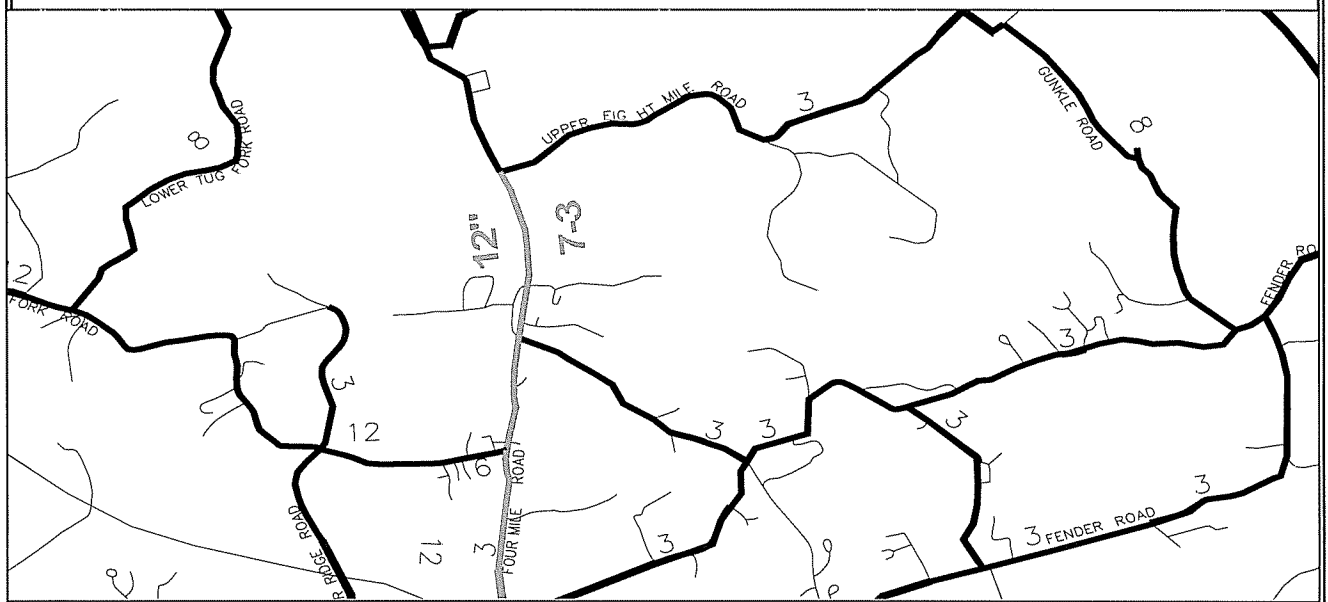
BUDGET BY YEAR		
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	510,000
TOTAL COSTS	\$	510,000

PROJECT DESCRIPTION (184-147)

The proposed project involves constructing a new 12 inch water main along Four Mile Pike from Poplar Ridge to Upper 8 Mile Road in Campbell County, Kentucky. The length of this project is approx. 5,600 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$510,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is also designed to replace the existing 6" water main along Four Mile Pike, support other existing water mains, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

MAPS/GRAPHICS

Proposed improvements shown as 7-3



CAPITAL ITEM NAME Dudley 1080 Redundancy Water Main

Engineering and Distribution Project

PROJECT TYPE: Redundancy Water Main

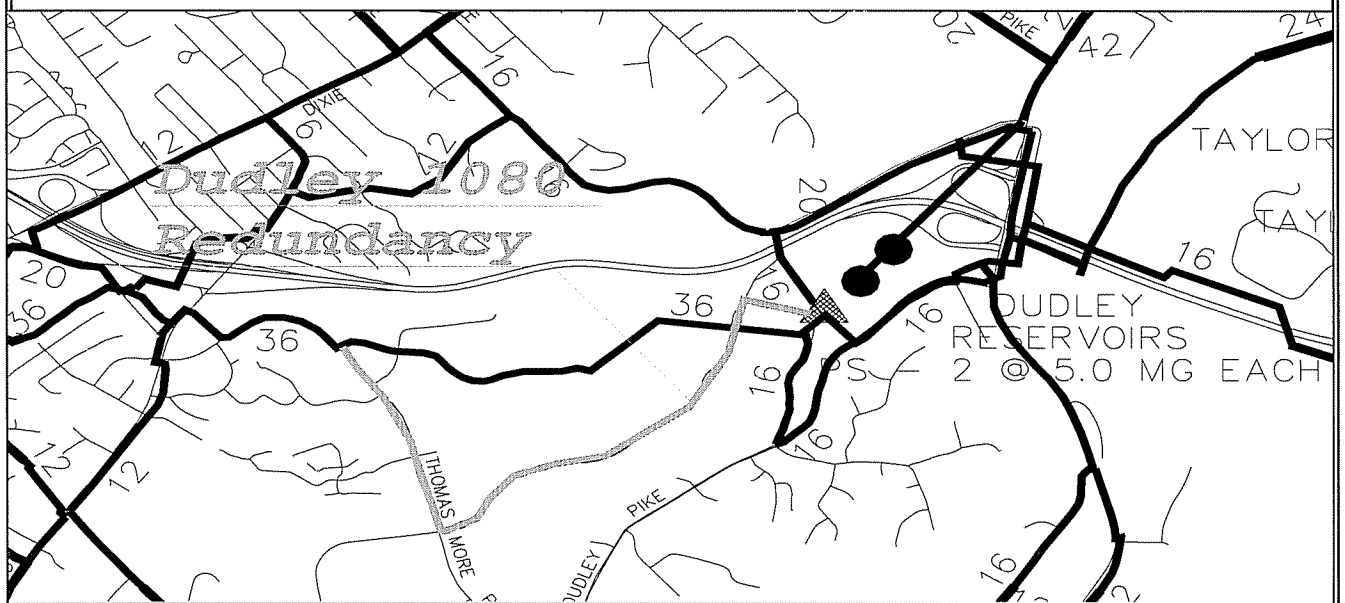
FUNDING SOURCE		
\$	2,800,000	2007 BAN
\$	<u>2,800,000</u>	Total Cost

BUDGET BY YEAR		
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	2,800,000
TOTAL COSTS	\$	<u>2,800,000</u>

PROJECT DESCRIPTION (184-148)

This project involves constructing a new 30" water main through the City of Crestview Hills, Kenton County, Kentucky. This project is designed to strengthen the District's water transmission system and provide some redundancy for the District's existing 36" water main. The District's Master Plan Addendum for Reliability and Redundancy Analyses identified this as a needed improvement.

MAPS/GRAPHICS



CAPITAL ITEM NAME Water Main Replacement Program 2007

Engineering and Distribution Project

PROJECT TYPE: Water Main Replacement

FUNDING SOURCE		
\$	2,100,000	2007 BAN
\$	2,100,000	Total Cost

BUDGET BY YEAR		
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	2,100,000
TOTAL COSTS	\$	2,100,000

PROJECT DESCRIPTION

This proposed program involves working with various cities in the District's service area to replace old water mains which are deteriorating. The District plans to replace the existing water mains in conjunction with City Street Replacement Programs. Working together with Cities saves the District restoration cost and coordinates our work with the street work. This program is designed to replace existing 4", 6" or 8" unlined cast iron water mains, which the District has experienced some problems with. These funds are part of the District's proposed program designed to replace or rehabilitate 1% of the District's distribution system annually. Other funding sources will be the Operation Capital Budget for main replacement and the Operations & Maintenance Budget for main rehabilitation.

MAPS/GRAPHICS

N/A

CAPITAL ITEM NAME Mains into Unserved Areas 2007

Engineering and Distribution Project

PROJECT TYPE: Water Main Extension

FUNDING SOURCE		
\$	250,000	2007 BAN
\$	250,000	Total Cost

BUDGET BY YEAR		
2002	\$	0
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	250,000
TOTAL COSTS	\$	250,000

PROJECT DESCRIPTION
 These funds will be utilized to extend water mains into unserved areas. The total project funding may include these funds along with grant funds, county funds and surcharges.

MAPS/GRAPHICS
 N/A

Exhibit R - 2007



CAPITAL ITEM NAME Kenton & Campbell Meter Change-Out

Customer Service Project

PROJECT TYPE: Meter Change Out

FUNDING SOURCE		
\$	800,000	2007 BAN
\$	800,000	Total Cost

BUDGET BY YEAR		
2005	\$	0
2006	\$	0
2007	\$	800,000
2008	\$	0
2009	\$	0
TOTAL COSTS	\$	800,000

PROJECT DESCRIPTION
 The project encompasses the systematic replacement of existing water meters with an AMR system.

CAPITAL ITEM NAME New Water tower, Rossford: retire Lumley & Rossford Tks.

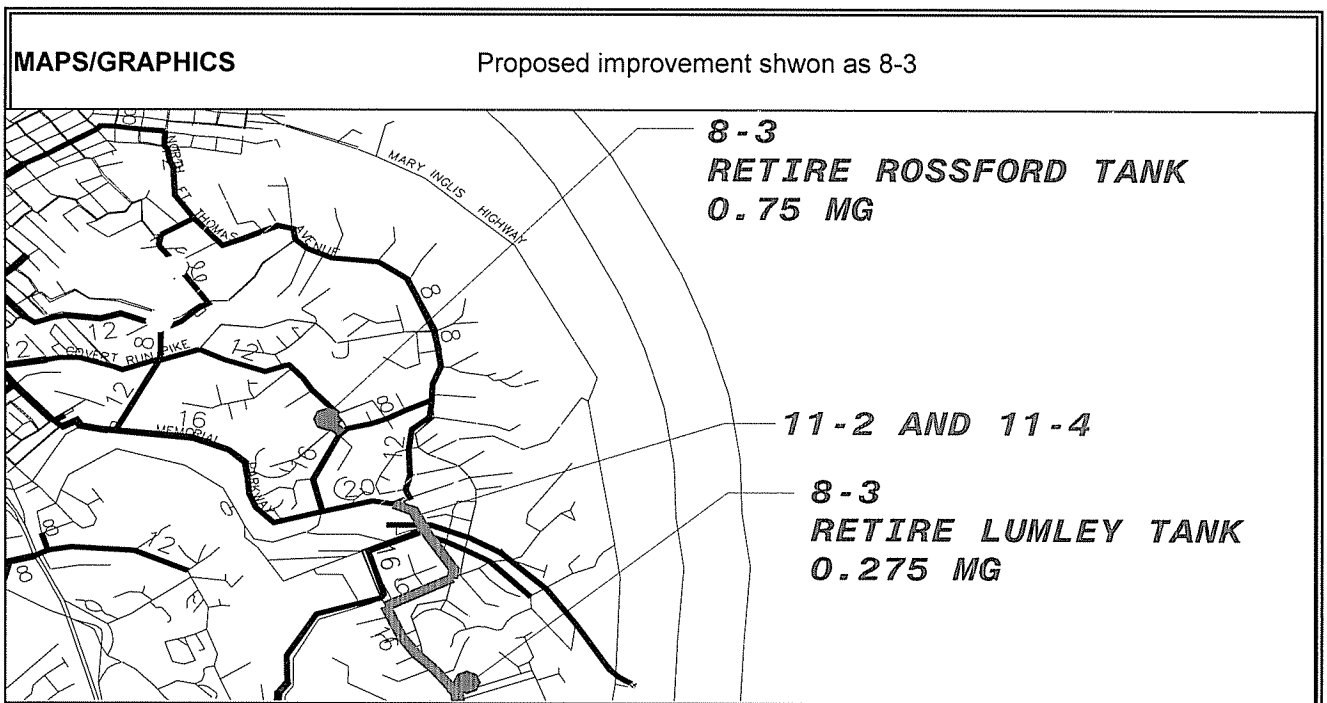
Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	<u>1,000,000</u>	BAN 2008
\$	<u>1,000,000</u>	Total Cost

BUDGET BY YEAR		
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	1,000,000
2009	\$	0
TOTAL COSTS	\$	1,000,000

PROJECT DESCRIPTION
 Construction of a new elevated storage tank (750,000 gallons) to replace Rossford (300,000 gallons) and Lumley (275,000 gallons) tanks in the City of Ft. Thomas, Campbell County, Kentucky. This project is designed to replace two existing tanks with one larger one which will reduce District maintenance and increase water storage capacities to meet growing needs. The District will need a Certificate of Need for this project. The District's Master Plan identified this as a needed hydraulic improvement.



CAPITAL ITEM NAME U.S. 27 from S.R.824 to Pendleton Co. meter

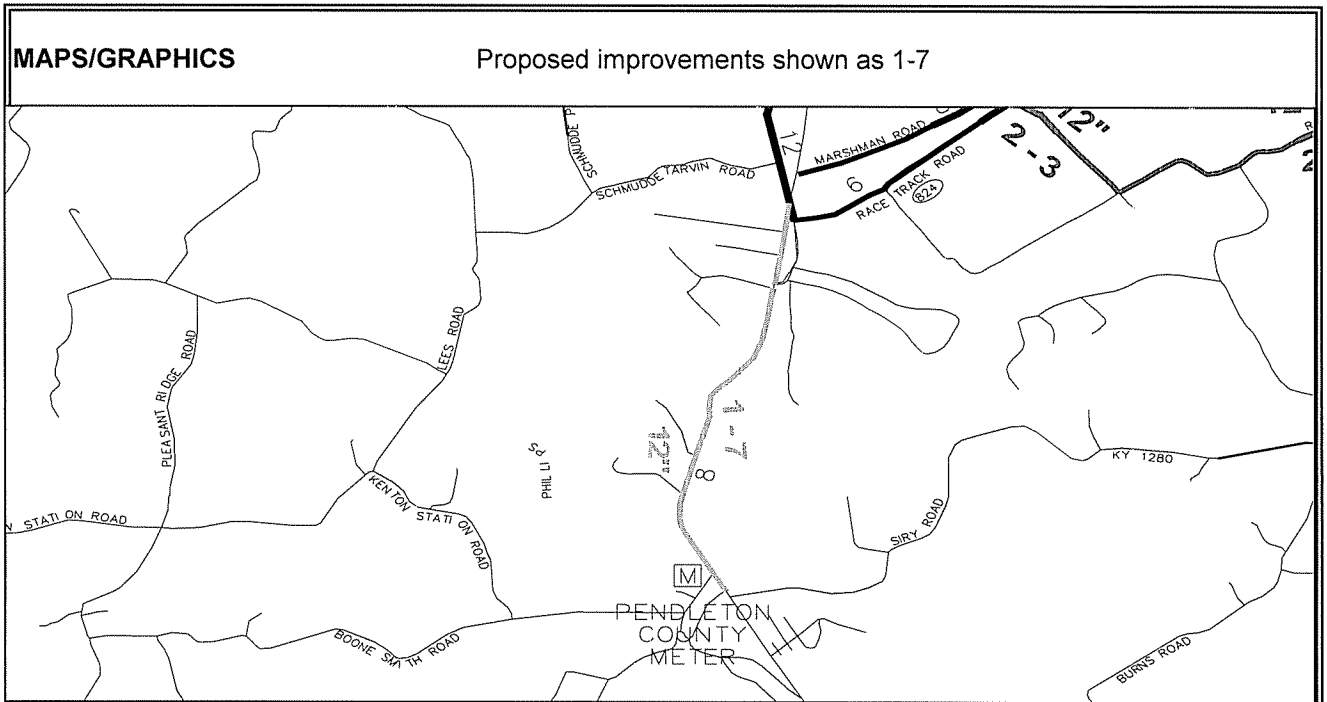
Proposed project in conjunction with KDOT Road Improvement Project
Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	770,000	2008 BAN
\$	770,000	Total Cost

BUDGET BY YEAR		
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	770,000
2009	\$	0
TOTAL COSTS	\$	770,000

PROJECT DESCRIPTION (184-0033)
The proposed project involves constructing a new 12 inch water main along U.S. 27 from Racetrack Road to Pendleton County Meter Pit, southern Campbell County, Kentucky. The length of this project is approx. 10,000 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$770,000. This project will be built with the KDOT road improvement project. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.



CAPITAL ITEM NAME Low Gap Road, (Ky. 9 to existing Dead-end)

Engineering and Distribution Project

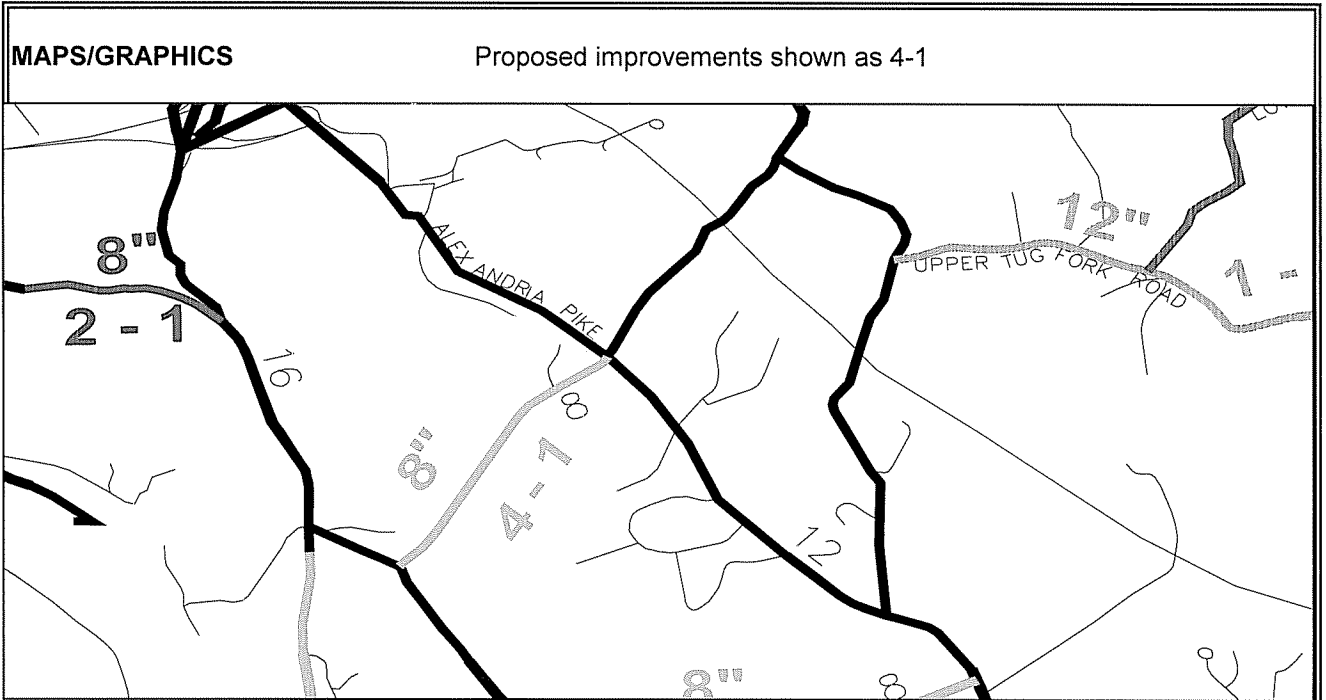
PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	192,000	2008 BAN
\$	192,000	Total Cost

BUDGET BY YEAR		
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	192,000
2009	\$	0
2010	\$	0
TOTAL COSTS	\$	192,000

PROJECT DESCRIPTION (184-0056)

The proposed project involves constructing a new 8 inch water main along Low Gap Road from Ky. 9 to existing water main dead-end in the City of Alexandria, Campbell County, Kentucky. The length of this project is approx. 1,300 LF. No new right-of-ways or easements will be needed. The estimated cost for the project is \$192,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to additional customers, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.



CAPITAL ITEM NAME Twelve Mile Road, from Ky. 10 to Ky. 1566

Engineering and Distribution Project

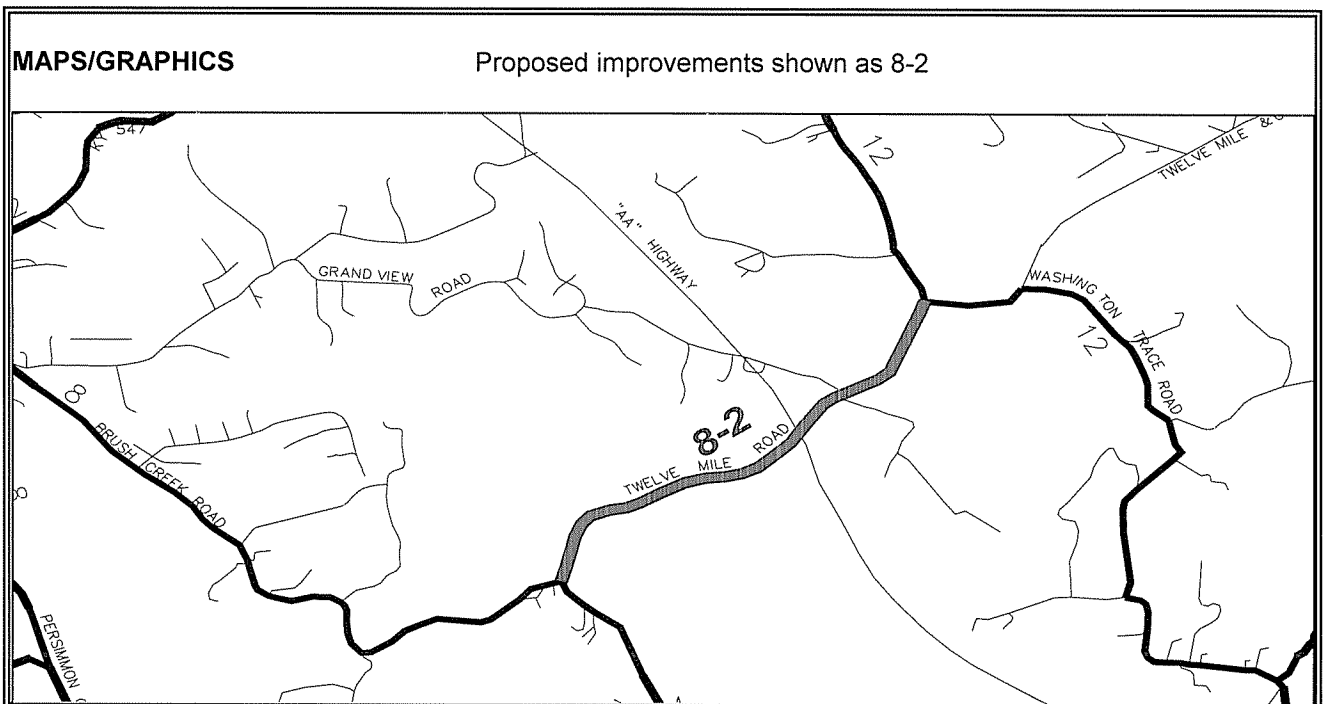
PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	450,000	2008 BAN
\$	450,000	Total Cost

BUDGET BY YEAR		
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	450,000
TOTAL COSTS	\$	450,000

PROJECT DESCRIPTION

The proposed project involves constructing a new 8 inch water main along Twelve Mile Road from Ky. 10 to Ky. 1566 in Campbell County, Kentucky. The length of this project is approx. 8,200 LF. No new right-of-ways of easements should be needed. The estimated cost for the project is \$450,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to additional customers, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.



CAPITAL ITEM NAME Water Main Replacement Program 2008

Engineering and Distribution Project

PROJECT TYPE: Water Main Replacement

FUNDING SOURCE		
\$	2,100,000	2008 BAN
\$	2,100,000	Total Cost

BUDGET BY YEAR		
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	2,100,000
TOTAL COSTS	\$	2,100,000

PROJECT DESCRIPTION

This proposed program involves working with various cities in the District's service area to replace old water mains which are deteriorating. The District plans to replace the existing water mains in conjunction with City Street Replacement Programs. Working together with Cities saves the District restoration cost and coordinates our work with the street work. This program is designed to replace existing 4", 6" or 8" unlined cast iron water mains, which the District has experienced some problems with. These funds are part of the District's proposed program designed to replace or rehabilitate 1% of the District's distribution system annually. Other funding sources will be the Operation Capital Budget for main replacement and the Operations & Maintenance Budget for main rehabilitation.

MAPS/GRAPHICS

N/A

CAPITAL ITEM NAME Mains into Unserved Areas 2008

Engineering and Distribution Project

PROJECT TYPE: Water Main Extension

FUNDING SOURCE		
\$	250,000	2008 BAN
\$	250,000	Total Cost

BUDGET BY YEAR		
2003	\$	0
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	250,000
TOTAL COSTS	\$	250,000

PROJECT DESCRIPTION
 These funds will be utilized to extend water mains into unserved areas. The total project funding may include these funds along with grant funds, county funds and surcharges.

MAPS/GRAPHICS
 N/A

CAPITAL ITEM NAME KY 2043, Banklick Station Road to KY 16

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	2,400,000	2008 BAN
\$	2,400,000	Total Cost

BUDGET BY YEAR		
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	0
2009	\$	2,400,000
TOTAL COSTS	\$	2,400,000

PROJECT DESCRIPTION

The proposed project involves constructing a new 24 inch water main along KY 2043 (Banklick Road) from Maher Road to KY 16 in Kenton County, Kentucky. The length of this project is approx. 14,400 LF. No new right-of-ways or easements should be needed. The estimated cost for the project is \$2,400,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to unserved areas, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

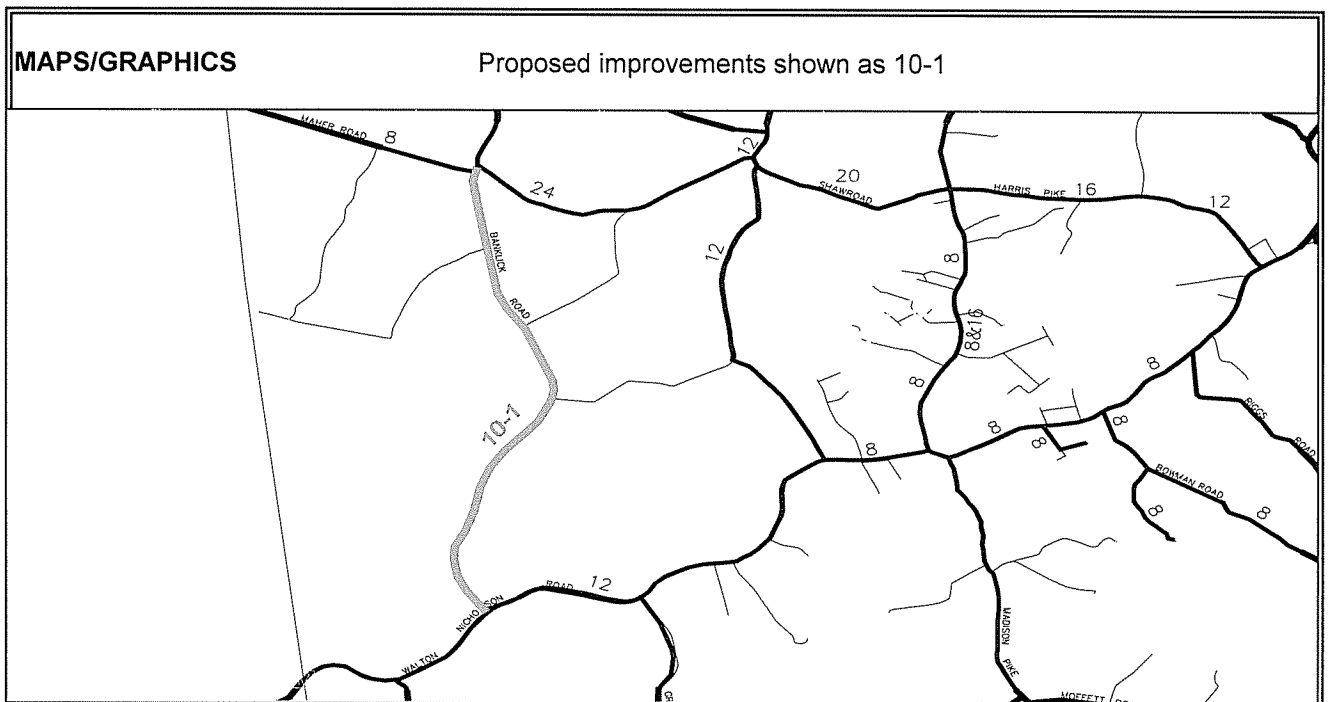


Exhibit R - 2008



CAPITAL ITEM NAME Kenton & Campbell Meter Change-Out

Customer Service Project

PROJECT TYPE: Meter Change Out

FUNDING SOURCE		
\$	800,000	2008 BAN
\$	800,000	Total Cost

BUDGET BY YEAR		
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	800,000
2009	\$	0
TOTAL COSTS	\$	800,000

PROJECT DESCRIPTION
 The project encompasses the systematic replacement of existing water meters with an AMR system.

FTTP Post-Filtration GAC

Water Quality and Production Project

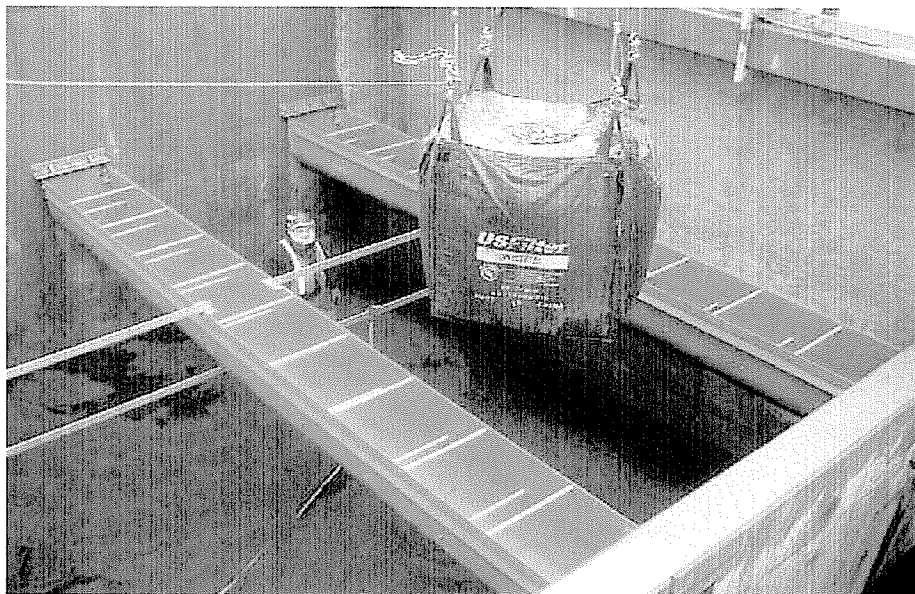
PROJECT TYPE: Water Treatment Plant Upgrade

FUNDING SOURCE		
\$	1,000,000	BAN 2009
\$	10,000,000	BAN 2010
\$	10,000,000	BAN 2011
\$	21,000,000	

BUDGET BY YEAR		
2009	\$	1,000,000
2010		10,000,000
2011		10,000,000
TOTAL COSTS	\$	21,000,000

PROJECT DESCRIPTION

Stage 2A of the Disinfection By-Products Rule (DBPR) will become effective 3 years after promulgation which is expected to be in 2005. DBPR Stage 2A will require all water systems to comply with locational running annual average (LRAA) THM and HAA5 maximum contaminant levels of 120 ug/L and 100 ug/L respectively. Stage 2B of the DBPR will become effective six years after the rule's promulgation which is expected to be in 2011. DBPR Stage 2B will require all water systems to comply with LRAA of 80 ug/L and 60 ug/L for THM and HAA5 respectively at revised sampling points in the distribution system. According to the May 2004 "Asset Management Program Final Report": "it will be difficult for the District to (meet DBPR Stage 2B) using current treatment/disinfection practices". Along with nanofiltration, Granular Activated Carbon (GAC) is identified by the EPA as the Best Available Technology to treat THM and HAA5.



Standby Generator at Taylor Mill Treatment Plant Pump Station

Water Quality and Production Project

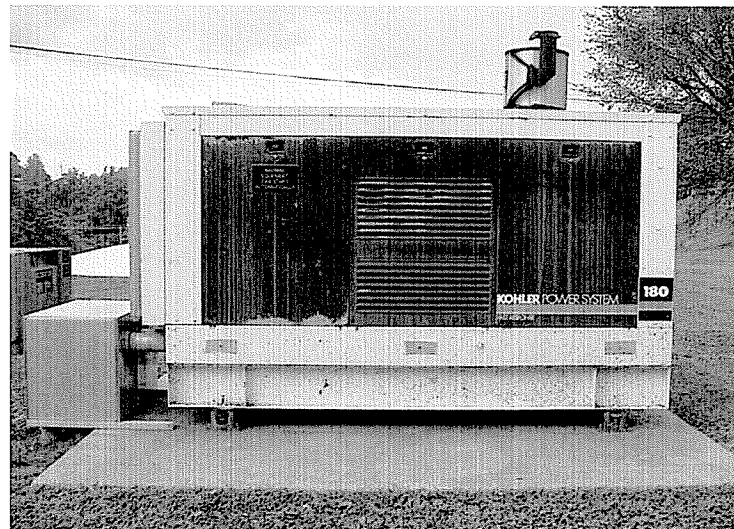
PROJECT TYPE: Pump Upgrade

FUNDING SOURCE		
\$	170,000	BAN 2009
\$	170,000	Total Cost

BUDGET BY YEAR	
2009	170,000
TOTAL COSTS	\$ 170,000

PROJECT DESCRIPTION

The Taylor Mill Treatment Plant Pump Station supplies finished water to about 45% of our customers. The station houses 6 pumps ranging in size from producing 8.1 to 10.0 million gallons per day. Although it is not cost-effective to try to provide emergency power through a generator to all 8 pumps located at the DPS, a generator that can supply two pumps will assist us in maintaining some water flow into our system in case of a long term electrical outage. This back-up generator was recommended in the District's 2003 "Vulnerability Assessment".



Back up generator located at Fort Thomas Treatment Plant.

CAPITAL ITEM NAME KY 536, U.S. 27 to Pond Creek Road - 12"

Engineering and Distribution Project

PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	1,990,000	2009 BAN
\$	1,990,000	Total Cost

BUDGET BY YEAR		
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	0
2009	\$	1,990,000
TOTAL COSTS	\$	1,990,000

PROJECT DESCRIPTION

The proposed project involves constructing a new 12 inch water main along KY 536 (Pond Creek Road) from U.S. 27 to KY 1936 (Pond Creek Road) in Campbell County, Kentucky. The length of this project is approx. 17,300 LF. No new right-of-ways or easements should be needed. The estimated cost for the project is \$1,990,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to extend water service to additional customers, support existing water systems, improve water quality, and improve fire protection in the area. The District's Master Plan identified this as a needed hydraulic improvement.

MAPS/GRAPHICS

Proposed improvements shown as 9-1



CAPITAL ITEM NAME Interconnect 1010/1017

Engineering and Distribution Project

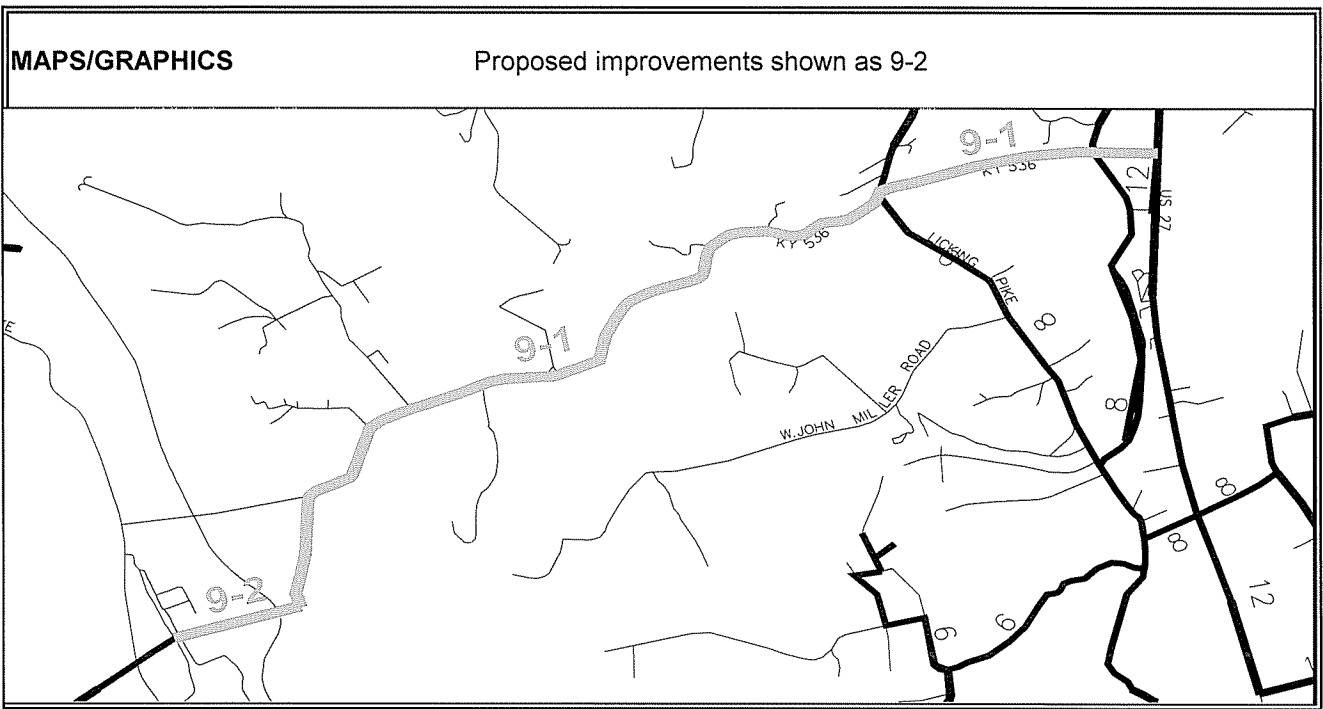
PROJECT TYPE: Hydraulic Master Plan

FUNDING SOURCE		
\$	500,000	2009 BAN
\$	500,000	Total Cost

BUDGET BY YEAR		
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	0
2009	\$	500,000
TOTAL COSTS	\$	500,000

PROJECT DESCRIPTION

The proposed project involves constructing a new 12 inch water main along KY 536 (Pond Creek Road) from KY 1936 (Pond Creek Road) to Decoursey Pike in Campbell & Kenton Counties, Kentucky. The length of this project is approx. 2,000 LF. New right-of-ways of easements should be needed. The estimated cost for the project is \$500,000. This project is designed to strengthen and improve the transmission system and local distribution system to meet population growth and commercial development needs. This project is designed to support existing water systems, improve water quality, and improve fire protection in the area. This water main will need to cross the Licking River. The District's Master Plan identified this as a needed hydraulic improvement.



CAPITAL ITEM NAME Water Main Replacement Program 2009

Engineering and Distribution Project

PROJECT TYPE: Water Main Replacement

FUNDING SOURCE		
\$	2,100,000	2009 BAN
\$	2,100,000	Total Cost

BUDGET BY YEAR		
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	0
2009	\$	2,100,000
TOTAL COSTS	\$	2,100,000

PROJECT DESCRIPTION

This proposed program involves working with various cities in the District's service area to replace old water mains which are deteriorating. The District plans to replace the existing water mains in conjunction with City Street Replacement Programs. Working together with Cities saves the District restoration cost and coordinates our work with the street work. This program is designed to replace existing 4", 6" or 8" unlined cast iron water mains, which the District has experienced some problems with. These funds are part of the District's proposed program designed to replace or rehabilitate 1% of the District's distribution system annually. Other funding sources will be the Operation Capital Budget for main replacement and the Operations & Maintenance Budget for main rehabilitation.

MAPS/GRAPHICS

N/A

CAPITAL ITEM NAME Mains into Unserved Areas 2009

Engineering and Distribution Project

PROJECT TYPE: Water Main Extension

FUNDING SOURCE		
\$	250,000	2009 BAN
\$	250,000	Total Cost

BUDGET BY YEAR		
2004	\$	0
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	0
2009	\$	250,000
TOTAL COSTS	\$	250,000

PROJECT DESCRIPTION
 These funds will be utilized to extend water mains into unserved areas. The total project funding may include these funds along with grant funds, county funds and surcharges.

MAPS/GRAPHICS
 N/A

Exhibit R - 2009



CAPITAL ITEM NAME Kenton & Campbell Meter Change-Out

Customer Service Project

PROJECT TYPE: Meter Change Out

FUNDING SOURCE		
\$	800,000	2009 BAN
\$	800,000	Total Cost

BUDGET BY YEAR		
2005	\$	0
2006	\$	0
2007	\$	0
2008	\$	0
2009	\$	800,000
TOTAL COSTS	\$	800,000

PROJECT DESCRIPTION
 The project encompasses the systematic replacement of existing water meters with an AMR system.



RECYCLED PAPER MADE FROM 20% POST CONSUMER CONTENT





AFFIDAVIT OF RONALD BARROW

County of Kenton)
Commonwealth of Kentucky)

Ronald Barrow, after being sworn, states that he is the vice president of finance for Northern Kentucky Water District and that the statements contained in the Petition are true and correct to the best of his information and knowledge.

Sworn and acknowledged before me by Ronald Barrow on the 23 day of May, 2005.



Ronald Barrow


Notary Public

My Commission Expires on: June 25, 2006



