

BRUCE E. SMITH LAW OFFICES, PLLC

201 SOUTH MAIN STREET

NICHOLASVILLE, KENTUCKY 40356

(859) 885-3393 + (859) 885-1152 FAX

BRUCE E. SMITH
bruce@smithlawoffice.net

HENRY E. SMITH
henry@smithlawoffice.net

March 7, 2014

RECEIVED

MAR 07 2014

PUBLIC SERVICE
COMMISSION

Mr. Jeff R. Derouen
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, Kentucky 40601

Re: Jessamine-South Elkhorn Water District CPCN Application

Dear Mr. Derouen:

Delivered under cover of this letter is an original and ten (10) copies of my client's Application to construct and finance an above-ground storage tank off Catnip Hill Road in Jessamine County, Kentucky. This tank was the subject of a previous CPCN filing in Case No. 2012-00470 which the Commission ultimately disapproved.

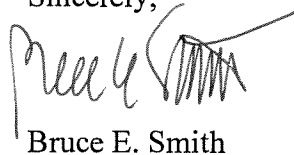
The tank project is financed in part by a grant from the Kentucky Legislature which will expire June 30, 2014 if not re-authorized. The initial grant totals \$1,000,000.00 and there is an excellent chance that another \$440,000.00 in grants will be added by the Legislature from other defunct projects. However, all of the grants have to be re-authorized by the Legislature in order to make them available to the District for the tank project.

My client believes that unless this current CPCN Application is decided by no later than June 1, 2014, the District is in jeopardy of losing the grant funds which will pay for approximately one-half (1/2) of the construction of the storage needed by my client and mandated by Commission regulations. Because these grants have been pending for some time, the District also believes that unless some progress is made on or before June 1, 2014 towards bringing this project closer to completion, the grant funds may be reallocated to other entities. Accordingly, my client asks that the Commission process and decide this Application in an expedited manner on or before June 1, 2014.

Mr. Jeff R. Derouen
March 7, 2014
Page Two

In Case No. 2012-00470, the Commission found that the District should investigate the possible alternative of contracting for storage capacity from Kentucky American Water Company. The Chairman of the District, Nick Strong, met today with Kentucky American Water Company President, Cheryl Norton, and Ms. Norton expressed Kentucky American's support for the District's proposal to construct more water storage and acknowledged that the water supply contract between the District and Kentucky American requires the District to provide its own water storage. Ms. Norton also acknowledged that Kentucky American is currently operating under a 50% deviation from PSC regulations as to its own water storage and that Kentucky American could not make any guarantees to the District as to storage in the event an emergency situation arises. A written statement from Kentucky American confirming the foregoing account will be provided to the Commission within the next two (2) weeks.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce E. Smith", with a stylized flourish extending to the right.

Bruce E. Smith

Enclosures

cc: Representative Robert R. Damron
Senator Tom Buford
Mr. Nick Strong

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

MAR 07 2014

**PUBLIC SERVICE
COMMISSION**

In the Matter of:

**APPLICATION OF JESSAMINE-SOUTH ELKHORN)
WATER DISTRICT FOR A CERTIFICATE OF)
PUBLIC CONVENIENCE AND NECESSITY TO)
CONSTRUCT AND FINANCE A WATERWORKS)
IMPROVEMENT PROJECT PURSUANT TO KRS)
278.020 AND 278.300)**

CASE NO 2014- _____

APPLICATION

The Jessamine-South Elkhorn Water District (the "District") by counsel and pursuant to KRS 278.020 and 278.300, petitions the Commission for a certificate of public convenience and necessity ("CPCN") to construct a waterworks improvement project and approval to finance said project. The following information is filed in accordance with the Commission's regulations:

1. The District's office address is P.O. Box 721, Nicholasville, Kentucky 40340-0721. Its principal officers are listed in its 2012 Annual Report, which is on file with the Commission. The contact person is Diana Clark (office manager); telephone (859)881-0589; fax (859)881-5080; and email: jessaminesouth@windstream.net;

2. The District is a non-profit water district organized under KRS Chapter 74 and has no separate articles of incorporation or by-laws (807 KAR 5:001 Section 14);

3. A description of the District's water system and its property, stated at original cost by accounts, is contained in its 2012 annual report, which is incorporated herein by reference. All required normal financial schedules and other data are in the Annual Report;

4. The Catnip Hill Pike Tank Project (the “Project”) consists of the construction of improvements to the waterworks system as described in **Group Exhibit “A”** attached hereto;

5. The District is applying for approval of a CPCN for a 750,000 gallon elevated water storage tank and related appurtenances. In the alternative, should the Commission determine that a CPCN cannot be granted at this time for a 750,000 gallon storage tank, the District requests that the PSC approve a CPCN for a 500,000 gallon elevated storage tank without requiring separate proceedings or a new application for each proposed alternative. The PSC has already determined that the District is deficient in storage capacity following extensive review in Case No. 2012-00470, the record of which the District hereby requests be incorporated by reference into the record in this new Application. The District asserts that the proposed 750,000 tank is fully justified, and that the proposed 750,000 gallon tank is the most cost-efficient alternative to meet the District’s present and future storage needs. However, the District respectfully requests that if the Commission finds that a CPCN should not be granted for a 750,000 gallon tank, that it grant a CPCN for a 500,000 gallon tank in this proceeding, so that the District may in a timely manner construct storage to assure that it can continue to meet its customers’ needs at the current high level of quality and reliability;

6. The Project is in the public interest and will improve the District’s system – see **Group Exhibit “A”** attached hereto. Group Exhibit “A” consists of a summary; a Storage Analysis prepared by Horne Engineering and dated March 1, 2014 and an Addendum that reviews PSC Orders relating to storage approved for Kentucky American Water Company (“KAW”), as it has been suggested that KAW could be viewed as an alternative storage supplier for the District;

7. The District is also applying for approval for the necessary financing of this Project. The total Project cost for a 750,000 gallon tank or a 500,000 gallon tank, whichever size the

Commission approves, will be determined and submitted for approval at a future point in time after plans and specifications have been drawn for the size authorized. The District believes that the Project cost will not be significantly different from the project cost submitted in Case No. 2012-00470. The project cost in Case No. 2012-00470 is attached as **Exhibit “B”** along with an email from the same contractor who was to construct said Project. This email demonstrates that the cost of either a 750,000 gallon tank or a 500,000 gallon tank will be less. To the extent that proceeding in this manner requires a deviation from any PSC requirement or regulation, the District requests that such deviation be approved, with the District to expeditiously file a specific project cost upon determination as to which tank size is granted a CPCN. Further, a letter from the same financing source as in Case No. 2012-00470 is attached as **Exhibit “C”** to demonstrate that the same level of financing is also available. Again, to the extent that proceeding in this manner requires a deviation from any PSC requirement or regulation, the District requests that such deviation be approved, with the District to expeditiously file a final approval of required financing upon determination as to which tank size is granted a CPCN. Additionally, there are three (3) legislative grants (355N-2007, 356N-2007 and 357N-2007) totaling \$440,000.00, which if reallocated and re-authorized by the Kentucky Legislature, will further offset the costs of the Project.

8. The District has obtained all of the easements for the project;

9. This service will not compete with any other utility in the area;

10. Based on these facts, the District believes that it is in the public interest that this CPCN be granted and that the plan of financing be conditionally approved;

11. The following information is provided in response to 807 KAR 5:001 Section 14:
Articles of Incorporation – none – the District is a statutorily created water district under KRS Chapter 74.

12. The following information is supplied in accordance with 807 KAR 5:001 Section 15;

a. Facts relied upon to show that the Project is in the public interest: See **Group Exhibit “A”** attached hereto;

b. The District seeks a waiver pursuant to 807 KAR 5:001 Section 22 of filing plans and specifications for the proposed construction until such time as the PSC determines which proposed alternative will be granted a CPCN, with plans and specifications to be promptly submitted for review following such approval. The preparation and filing of two sets of plans with this Application, one for the 750,000 gallon tank and another for the 500,000 gallon tank, would be unnecessarily expensive under the circumstances of this conditional request.

c. No new franchises are required. The District seeks a waiver pursuant to 807 KAR 5:001 Section 22 as to permits for the reason that the permits needed require the submission of plans and specifications, for which the District also seeks a waiver below. The District also submits that all necessary permits required herein will be issued for the proposed alternative projects since all permits were issued for the larger facility proposed in Case No. 2012-00470.

d. The proposed location of the facility is the same location as was proposed in Case No. 2012-00470, and fully reviewed in that case. A map of suitable scale showing the location of the facility proposed in this Application was filed of record in Case No. 2012-00470, and is incorporated herein by reference. The only difference in this Application is the proposed capacity of the facility.

e. Funding for the proposed tank is to be provided from the proceeds of (i) a Kentucky State Grant (HB 608 - 229N-2008) in the amount of \$1,000,000.00; (ii) three (3) legislative grants (355N-2007, 356N-2007 and 357N-2007) totaling \$440,000.00, which the

District has for sewer, but has requested reassignment to the Catnip Hill Tank Project; and (iii) the balance to be funded by a loan from the Kentucky Rural Water Finance Corporation (“KRWFC”) in a principal amount to be determined upon approval by the Commission of a CPCN for one of the alternatives proposed by the District in this proceeding. The District has previously received approval from KRWFC for a similar loan for the 1 million gallon water tank proposed in Case No. 2012-00470. The estimated cost of construction in that Case is attached as **Exhibit “B”** and it is anticipated that the cost of construction for either of the alternative proposals in this CPCN will not exceed the cost of the prior Case’s proposal based on the email from the contractor which is also attached as part of Exhibit “B”. Preliminary approval to finance the current alternative request is attached as **Exhibit “C”**. **See also Paragraph 7 above.**

g. The estimated cost of operation of the system after project completion will be the same as in Case No. 2012-00470 and attached as **Exhibit “D”** is the cost estimate for that Case.

13. Pursuant to 807 KAR 5:001, the District hereby responds as follows:

a. A general description of the District’s property is contained in the 2012 Annual Report on file with the Commission;

b. Financial information relating to the KRWFC loan in Case No. 2012-00470 is contained as **Exhibit “E”** attached.

c. All funds are to be used in accordance with the estimated Project Budget, see **Group Exhibit “B”**;

d. Section 18(1) (c) – the KRWFC loan will be secured by and paid out of the revenues of the District’s system;

e. Section 18(1) (e) – no real property is currently being acquired in connection with this project. The real property on which the tank will be constructed was previously acquired and paid for by the District in 2004;

f. Section 18(2) (b) – The District does have one (1) mortgage in effect as of the date hereof and it is attached as **Exhibit “F”**;

g. No proceeds of the KRWFC loan will be used to refund outstanding obligations.

14. The detailed statement of Revenues, Expenses and changes in Net Assets, Statement of Net Assets and Statement of Cash Flows for the twelve month period ending on December 31, 2012 is attached hereto as **Group Exhibit “G”**;

15. The District hereby requests and moves for a deviation from the requirements of 807 KAR 5:001, Section 12, which requires that financial data filed with the Application be for a twelve (12) month period ending within ninety (90) days of the filing of the application. The District states that there has been no change that is material in nature in the financial condition or operation of the District since December 31, 2012. This is the most recently published financial data available.

16. The District hereby requests that the Commission expedite its consideration of this Application. In particular, the District requests that the Commission issue an Order in this proceeding no later than June 1, 2014 because the funds allocated under HB 608 (\$1,000,000.00) and the three (3) legislative grants (355N-2007, 356N-2007 and 357N-2007) totaling \$440,000.00 are on the agenda for re-authorization in this year’s state legislative session and could be lost by the District on June 30, 2014 if progress towards the commencement of this Project is not made. In order to assist in expediting a decision, the District is pre-filing direct testimony of its witnesses

with the Application. The Direct Testimony of John G Horne is attached hereto as **Exhibit “H”**. The Direct Testimony of Christopher Horne is attached hereto as **Exhibit “I”**. The Direct Testimony of Dallam B. Harper and his study supporting his testimony is attached hereto as **Exhibit “J”**. The District requests that the Commission establish an expedited procedural schedule to assist in meeting this target date for a decision. The Commission has already conducted an extensive proceeding on the District’s prior request for a one million gallon tank on the same site in Case No. 2012-00470. As noted above, the District requests that the record in Case No. 2012-00470 be incorporated by reference herein, so as to further expedite review of the current Application.

17. No rate adjustment is necessary.

18. The District requests it be granted a deviation under 807 KAR 5:001(14) if necessary to accommodate any situation where inflexible compliance with a regulation would be impracticable, onerous or which would hinder the District’s daily operating.

WHEREFORE, the Applicant, Jessamine-South Elkhorn Water District, requests the Kentucky Public Service Commission to grant the following:

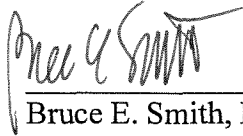
A. A certificate of public convenience and necessity permitting the Applicant to construct a water system improvement project conditional upon the submission of acceptable plans and specifications, satisfactory financing arrangements with Kentucky Rural Water Finance Corporation and the issuance of all necessary permits.

B. The Applicant’s requested deviations set forth herein.

SIGNATURES FOLLOW ON THE NEXT TWO PAGES

Anthony G. Martin, Esq.
P.O. Box 1812
Lexington, Kentucky 40588
agmlaw@aol.com
(859)268-1451

AND



Bruce E. Smith, Esq.
Henry E. Smith, Esq.
Bruce E. Smith Law Offices, PLLC
201 South Main Street
Nicholasville, Kentucky 40356
bruce@smithlawoffice.net
(859)885-3393

CO-COUNSEL FOR DISTRICT

Bes/JSEWD/Forest Hills/Application No. 2/Application/Application No. 2 Final - 030514

SUMMARY – EXHIBIT “A”

In Exhibit “A”, the Applicant Jessamine-South Elkhorn Water District (“JSEWD” or “the District”) provides detailed support for its request for a certificate of Public Convenience and Necessity (“CPCN”). The District is requesting approval of a CPCN for a 750,000 gallon water tank, which it believes is fully supported by the information and analyses in this application and in the attached exhibits. In the alternative, should the PSC determine that a CPCN should not be approved for a 750,000 gallon tank, the District requests approval in this proceeding for a 500,000 gallon tank.

In Case No. 2012-00470, the PSC determined that the District does not have sufficient storage to meet the PSC’s minimum storage requirement under 807 KAR 5:066 Section 4(4).¹ The District had requested approval of a CPCN for a one million gallon elevated storage tank. The PSC denied this request, stating that the District had not demonstrated the need for “a water storage facility of that capacity”.² In its Order on Rehearing, the PSC reiterated its finding as follows:

*JSEWD has shown that a need for storage capacity exists, but it has failed to demonstrate that, given its particular needs and service characteristics, the construction of an additional million gallons of storage capacity is required.*³

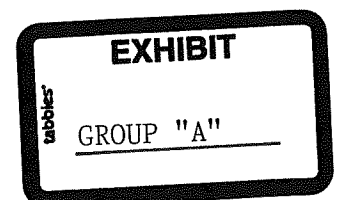
The PSC also stated as follows:

Our decision today should not be regarded as a rejection of JSEWD’s request for additional storage capacity. [fnt. omitted] As we have previously noted, the record demonstrates a need for additional storage capacity. JSEWD has failed to demonstrate that the level of storage capacity that the proposed facility will provide is necessary. To the extent that JSEWD can provide more convincing and reliable evidence on the customer growth and demand in the

¹ Order of April 30, 2013, at page 10; Order on Rehearing of January 3, 2014 at page 15.

² Order of April 30, 2013, at page 1.

³ Order on Rehearing of January 3, 2014 at page 15.



*Northwest Service Area or additional evidence on the suitability of smaller water storage facilities for that area, it may request rehearing on this Order to present such evidence or file a new application.*⁴

In response to the above PSC findings, the District has filed this Application. In this Application and Exhibits, the District has taken the following steps to comply with the PSC's findings in Case No. 2012-00470 and to demonstrate the necessity for the proposed storage facility:

1. The District has reduced the capacity of the proposed storage tank to 750,000 gallons, a reduction of 25% as compared to the tank proposed in Case No. 2012-00470;
2. The District has further considered a 500,000 gallon tank in the event that the PSC determines that the need for a 750,000 gallon tank has still not been established;
3. The District has retained the Bluegrass Area Development District ("BGADD") to perform a population growth study for its service area, and has utilized the BGADD's findings in analyzing the capacity to be proposed herein. The BGADD study is attached hereto, and the Testimony of Dallam B. Harper, Jr., AICP, is attached to the Application as "Exhibit J" Mr. Harper is currently the BGADD Senior Planner. His analysis demonstrates that there will indeed continue to be very significant population growth in the District's service area.
4. In considering the necessity for new storage, the District has incorporated the BGADD growth projections, and has further incorporated a reasonable requirement for fire flow. The District's analyses of required capacity are attached as part of Exhibit "A", and the

⁴ Order of April 30, 2013 at page 12.

testimony of John Horne and Christopher Horne with respect to these analyses are attached hereto as "Exhibit H" and "Exhibit I"

5. The District has further considered other suggested alternatives, including altering the District's long and successful agreement with Kentucky American Water Company (KAW) under which the District is specifically held responsible for meeting the District's storage needs. While the KAW alternative is addressed in detail in the attachments to the Application, the District would note in passing that the current model works very well – as the PSC noted in Case No. 2012-00470, the District operates with remarkably few complaints and service issues, despite very significant population and demand growth in its service area. There is no evidence of any need to change the relationship between the District and KAW – there is very substantial evidence to increase storage capacity on the JSEWD system so as to permit the District to continue to provide high quality and reliable service to its customers. KAW only meets its own storage capacity minimum requirements for its Main Service Zone due to a deviation that reduces its installed storage capacity requirement to 50% of its average daily consumption. In addition, KAW is projecting growth on its system at the same time that the District's population is projected to experience very significant growth.⁵ There is no rational basis to conclude that KAW has sufficient excess storage capacity available to meet the District's needs.

⁵ For KAW average daily demand growth projections, see Kentucky American Water Company Storage Capacity Analysis, November 15, 2002, referred to by the PSC in its Order of April 21, 2005 in Case No. 2005-00039, footnote 8; and a similar study dated December 21, 2005 and referred to repeatedly by the PSC in its Order in Case No. 2005-00546 JSEWD moves that these studies be incorporated herein by reference, since the District has been instructed to address the feasibility of a KAW "alternative".

The District has accepted and applied the PSC's findings in Case No. 2012-00470, and as demonstrated by the Application and attachments, a CPCN for this important project should be expeditiously granted, so as to enable to District to continue to provide high quality and reliable water service to its customers.

STORAGE ANALYSIS

Jessamine-South Elkhorn Water District

Jessamine County, Kentucky

March 1, 2014

Prepared by:
Horne Engineering, Inc
216 S. Main Street
Nicholasville, KY 40356
859.885.9441
email@horneeng.com

STORAGE ANALYSIS

Jessamine-South Elkhorn Water District

Jessamine County, Kentucky

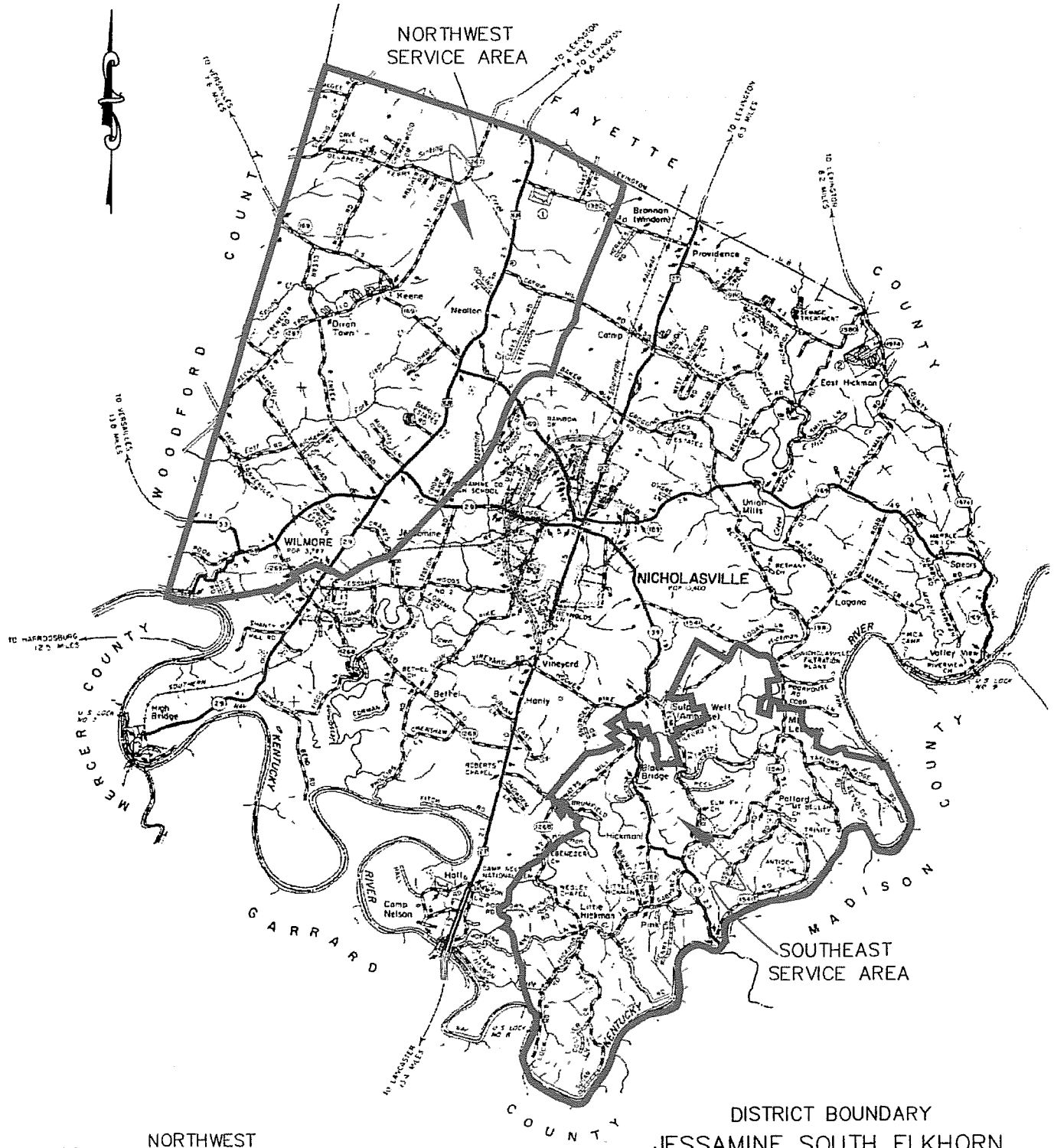
March 1, 2014



I. STATEMENT OF PURPOSE

The purpose of this study is to analyze the current and projected future demand of the Northwest Service Area of Jessamine-South Elkhorn Water District to determine the appropriate volume of the proposed elevated storage tank in order to reach compliance with 807 KAR 5:066, Section 4 (4). The projected demand shall be calculated based on future census projection of population and projected land use per Jessamine County, City of Nicholasville, City of Wilmore Comprehensive Plan, 2010. Insofar as the year 2010 is the most current year of an actual census survey, it has been determined as the base year of study. The District has retained the services of Mr. Dallam B. Harper, Jr., AICP, of the Bluegrass Area Development District to perform the census projections.

II. HISTORY OF THE DISTRICT

Figure 1 is a map of Jessamine County on which the current district boundary of Jessamine-South Elkhorn Water District is shown. This water district is unique in the fact that its service areas are not contiguous, are separated in opposite corners of the County, and



 NORTHWEST SERVICE AREA
 SOUTHEAST SERVICE AREA

DISTRICT BOUNDARY
 JESSAMINE SOUTH ELKHORN
 WATER DISTRICT
 JESSAMINE COUNTY, KENTUCKY
 NOVEMBER 2010

FIGURE 1

wholesale water is purchased from different water sources. The Northwest Service Area (shown in blue) is the resultant district boundary of the original Lexington South Elkhorn Water District and water is obtained from Kentucky-American Water Company. The Southeast Service Area (shown in red) is a recent addition to the water district with service having only begun in the year 2000. This area was created and added to Jessamine-South Elkhorn Water District in the late 1990's for the purpose of obtaining funding and extending waterlines to this area of the County, which until that time had no potable water available. The source of water for this area is the City of Nicholasville.

The first construction of distribution mains, booster pump station, and a 50,000 gallon elevated storage tank occurred in 1972. In 1972, there were 227 meters, and as of January 1, 2014, there are 2,298 meters with an additional estimated 50 irrigation meters inactive for the winter season.

The 862% increase of customers is the result of the pressure of extremely high demand and development which has occurred in the Northwest Service Area, which began in the mid 1970's shortly after the initial startup of the District. The vast majority of the District pipe-up has been accomplished by infrastructure installation by the developers. The first piping installation consisted of 118,500 lineal feet (22 miles) and five hydrants. Today, the totals are 749,579 lineal feet (142 miles) of piping and 634 fire hydrants, representing a 632% increase.

“It is generally best to locate storage on the opposite side of the major load center from the main source of water (e.g., pumping station or well). Tank location is often dictated by terrain and land availability.”¹ In a system with multiple storage tanks, it is best and more efficient to construct all tanks on the same hydraulic grade line. The two (2) existing storage tanks are so constructed, and the site for the proposed tank was restricted to elevations that would enable the proposed tank to operate on the same hydraulic gradient, thus precluding the requirement to add and/or change pumping.

In 2003, the District was able to negotiate purchase of a 1.0 acre site on the Sue Switzer farm, which was to be utilized for a proposed elevated storage tank. This site was hydraulically compatible with the original 50,000 gallon elevated storage tank and a 500,000 gallon elevated storage tank that was constructed in the mid 1990's. “If a tank is planned for a site, but is not to be constructed for several years, it is desirable to obtain the land for the tanks and the needed rights-of-way for pipes and roads well in advance.”² At the time of tank site purchase, all adjacent properties were farmland. However, several years later, the farm immediately north of the site was purchased and developed. The District cooperated with the developer to obtain dedicated access to the tank site and up sizing of the proposed watermains that would connect with the proposed tank.

On July 10, 2012, the District received bids for construction of a 1,000,000 gallon elevated storage tank on the site and a CPCN application was filed with the Public Service

¹ Distribution System Requirements for Fire Protection, Fourth Edition, AWWA @ 28

² Water Distribution Handbook, Larry W. Mays, McGraw-Hill Handbooks @ 10.4.5

Commission on October 12, 2012 (2012-00470). After two (2) days of hearings and several months of motions, the CPCN was denied.

In 2008, under HB608, the District received a \$1,000,000 non-coal Grant (229N-2008) toward the construction of the Catnip Hill Pike, 1.0 million gallon elevated storage tank. Previously in 2007, the District has received three (3) separate legislative grants (SX21113009, SX2113010, and SX21113011) for sanitary sewer projects in the Ichthus / Centennial Park area of the City of Wilmore. These projects were predicated on completion of an adjoining development that unfortunately due to the "bubble burst" never got off the ground. Consequently, the District has discussed with their legislative representatives the reallocation of these monies (total of \$440,000) to the Catnip Hill Pike elevated tank, and have been assured that this can be accomplished.

III. PURPOSE OF STORAGE

Jessamine-South Elkhorn Water District does not obtain its water from a well; neither does it own and/or operate a water treatment plant. Potable water for its customers is obtained by purchase from adjoining utilities. The District purchases water from the City of Wilmore to serve one customer (Francis Asbury Society) located in the northern area of Wilmore.

The remaining customers (2346) of the Northwest Service Area are served via purchase of water from Kentucky-American Water Company (KAWC).³ The District's distribution system is connected to KAWC's system at two metering locations.

1. Keene Road 500' north of the Fayette/Jessamine County line. Delivery shall not exceed an average of two-hundred (200) gallons per minute (service from this meter point is by gravity).
2. Harrodsburg Road 500' north of the Fayette/Jessamine County line. Delivery shall not exceed an average of six-hundred (600) gallons per minute. (Due to the four-lane widening of Harrodsburg Road, this connection and booster pump station was relocated to KAWC Clays Mill tank site area.)

The contract further defines deliver rate;

"In addition, the consumption at the meter near Harrodsburg Road [*sic* Clays Mill Road], paragraph 1 (1) shall never exceed 900 gallons for any one minute and the consumption at the meter near Keene Road, paragraph 1 (2), shall never exceed 300 gallons for any one minute. In the event either or both of the consumption limitations contained herein are exceeded, then and in that event, Company shall have the right, in addition to such remedies as may be otherwise provided, to place such consumption restrictive devices in

³ Jessamine-South Elkhorn Water District Tariff, Public Service Commission, Water Purchase Agreement, Kentucky-American Water Company @ 2

its system as will regulate District's demands within the limitation contained herein, both as to averages and per minute consumption."⁴

Insofar as, the District's source of supply is limited, any analysis and design of required storage must take into account the maximum peak day demand and provide sufficient storage that will allow the District to operate without violation of their contract with KAWC.

"The capacity of distribution storage is based on the maximum water demands in different parts of the system. Capacity varies for different systems and can only be determined by qualified engineers after careful analysis and study of a particular system."⁵

Consequently, the appropriate sizing of required storage must take into consideration the annual maximum daily demand.

"Purchasing systems must frequently provide a greater-than-average water storage capacity because of the possibility that they will temporarily lose their single source. Additional storage may also be required if the water purchasing agreement involves drawing water at only a limited rate of purchasing water at a cheaper rate during the night."⁶

⁴ *ibid* @ 3

⁵ Kentucky-American Water Company Storage Capacity Analysis, Nov. 15, 2002 @ 3 and Kentucky-American Water Company Storage Capacity Analysis, Dec. 21, 2005 @ 3

⁶ Water Transmission and Distribution, Principles and Practices of Water Supply Operations, 4th Edition, AWWA @ 3

Treated water storage in a water distribution system is provided for various purposes as quoted from the following sources:

1. Introduction to Water Distribution (Volume 3 of AWWA's Principles and Practices of Water Supply Operations).

Chapter 8, Section 8-1, under chapter heading "Purpose of Water Storage" states that "water storage in the distribution system is required for the following reasons:

- Equalizing supply and demand
- Increasing operating convenience
- Leveling out pumping requirements
- Providing water during source or pump failure
- Providing water to meet fire demands
- Providing surge relief
- Increasing detention times
- Blending water sources"

Under the chapter heading "Capacity Requirements", it also states:

"The capacity of distribution storage is based on the maximum water demands in different parts of the system. Capacity varies for different systems

and can only be determined by qualified engineers after a careful analysis and study of a particular system. Storage capacity needed for fire protection should be based on recommendation of fire underwriter's organizations. Because there are so many variables involved, operators should contact the Insurance Services Organization Office or the fire Insurance Rating Office in their state to obtain any available information.

Additional storage capacity may be necessary to meet emergencies such as pump failure, source failure, or transmission-line break. The need for emergency storage should be based on the reliability of the supply and pumping equipment and the availability of backup equipment and standby power resources.”

2. Recommended Standards for Water Works (Ten States Standards)

Chapter 7, Finished Water Storage states the following in chapter 7.0.1 “Sizing”:

“Storage facilities should have sufficient capacity, as determined from engineering studies, to meet domestic demand, and where fire protection is provided, fire flow demands.

- a. Fire flow requirements established by the appropriate state Insurance Services Office should be satisfied where fire protection is provided.

- b. The minimum storage capacity (or equivalent capacity) for systems not providing fire protection shall be equal to the average daily consumption. This requirement may be reduced when the source and treatment facilities have sufficient capacity with standby power to supplement peak demands of the system.”⁷

Redundancy is another factor for consideration in locating and sizing a proposed storage tank. Currently, the District has two (2) elevated storage tanks, a 50,000 gallon and a 500,000 gallon. Generally, the only time that a tank would be required to be taken offline is to clean and/or paint the interior. Fortunately, this maintenance is only required as needed, and generally after an extended period of time. However, it is a fact that it will occur in the future, and without another tank of comparable or larger size than the present 0.5 million gallon tank, removing it from service would be disastrous.

It is generally accepted in the engineering profession that water storage tanks should consist of three (3) volumes: (1) Equalization, (2) Fire, and (3) Emergency.^{8 9 10 11}

⁷ Kentucky-American Water Company Storage Capacity Analysis, Nov. 15, 2002 @ 4 and, Kentucky-American Water Company Storage Capacity Analysis, Dec. 21, 2005 @ 4

⁸ See Water Distribution System Handbook, Larry W. Mays, McGraw-Hill Handbook

⁹ See Principles and Practices of Water Supply Operations, Water Transmission and Distribution, Fourth Edition, AWWA

¹⁰ See Water Supply Systems and Evaluation Methods, Volume II, October 2008, US Fire Administration FEMA

¹¹ See Computer Modeling of Water Distribution Systems, M-32, Third Edition, AWWA

“5.3.4.1 Equalization Storage. Equalization storage is the amount of water required to meet demands in excess of the production and delivery capabilities. This storage is generally less expensive to provide than the production facilities, pumping, and piping that are required to meet all instantaneous demands. The amount of equalization storage maintained by a community should be determined based on a comparison of the projection capabilities versus the demands expected on the system. In most communities, this is based on the maximum day condition and ensuring that the equalization storage is sufficient to meet the demands that exceed the projection capabilities.

5.3.4.2 Fire Storage. The fire protection needs of a community typically are determined by the Insurance Service Office (ISO) in the United States and by the Insurance Advisory Organization (IAO) in Canada. The requirements calculated by these organizations are based on the building types, land use, water supply facilities, and the response capabilities of the local fire department. The fire storage volume is determined by multiplying the required flow duration by the maximum fire flows in each service area of the distribution system.

5.3.4.3 Emergency Storage. Emergency storage provides water during events such as pipeline failures, equipment failures, power outages, pumping system failures, water treatment plant failures, raw water contamination events, or natural disasters. The amount of emergency storage is a policy

decision based on an assessment of the risk of failures and the desired degree of system dependability. Some states or provincial regulations indicate the minimum emergency storage required for the community based on the average or maximum daily demands.”¹²

Emergency storage is a subjective opinion. However, in the Kentucky-American Water Company Storage Analysis, the author makes the statement, “In 1993, KAWC submitted a storage capacity analysis to the PSC that recommended the appropriate water storage needs for its system through the year 2005 that analysis evaluated the need for storage based on the Public Service Commission’s requirement of maintaining a supply equal to an average day demand (emergency storage).”¹³ (Emphasis added.)

“The Kentucky Public Service Commission Title 807, Chapter 5 – Utilities, Section 4 – Continuity of Service, paragraph (4) states “the minimum storage capacity for systems shall be equal to the average daily consumption”. Section 4 is entitled “Continuity of Service” and generally deals with provisions to provide continuous supply to customers during various emergency situations.”¹⁴

¹² *ibid* @ 116, 117

¹³ Kentucky-American Water Company Storage Capacity Analysis, Nov. 15, 2002 @ 4, and Kentucky-American Water Company Storage Capacity Analysis, Dec 21, 2005 @ 4

¹⁴ *ibid* @ 2

The key words in this regulation are “minimum” and “average daily consumption”. That is, the regulation simply sets a standard of minimum capacity that a utility must meet. However, it does not dictate how and in what manner that volume of storage shall be calculated. “Minimum storage requirements are sometimes specified by regulatory agencies in terms of gallons of storage per capita or connection. These numbers are usually more conservative than the volume that would be required by adding equalization storage plus fire storage, especially for larger pressure zones.”¹⁵

IV. ALTERNATES TO ELEVATED STORAGE

At its onset, the District adopted the principle and practice of elevated tanks to provide its in-system storage. “Water distribution storage is provided to ensure the reliability of supply, maintain pressure, equalize pumping and treatment rates, reduce the size of transmission mains, and improve operation flexibility and efficiency. Numerous decisions must be made in the design of a storage tank, including size, location, type, and expected operation.”¹⁶ The District operates under a single pressure zone. Therefore, it is preferable that any added storage operates in the same hydraulic gradient.

During the relocation of the original booster pump station, in conjunction with the four-lane widening of Harrodsburg Road, the new pumps were sized with the anticipation of adding additional elevated storage at the same hydraulic grade line and with an anticipated

¹⁵ Distribution System Requirements for Fire Protecting, Fourth Edition- AWWA @ 27

¹⁶ See Water Distribution System Handbook, Larry W. Mays, McGraw-Hill Handbook @ 10.2

growth in demand. To do otherwise would require separate pressure zones and/or extensive telemetering and altitude valve control. "When there are multiple tanks in a pressure zone, it is essential for all of them to have virtually the same overflow elevation. Otherwise, it may be impossible to fill the highest tank without overflowing or shutting off the lower tanks (thus causing water-quality problems in the lower tanks)."¹⁷

Ground Storage - Tanks constructed at ground level are termed ground storage and are located independent of the hydraulic grade line, except in areas of hilly or mountainous terrain, wherein they can be located on the ground at the hydraulic grade line, and in such cases, they operate as elevated storage. When the height of the tank far exceeds the diameter - it is termed a standpipe. The topography of the District's Northwest Service Area does not lend itself to ground storage. Whereas, that of the Southeast Service Area does, and in-system storage for that service area is provided by two (2) 100,000 gallon standpipes.

Pumped Storage - "If distribution storage tanks were not used, larger water transmission mains and larger treatment plant capacity would be required by most utilities to provide water needed for firefighting. Especially for smaller systems, storage tanks are a much more economical and operationally reliable means for meeting the short-term large demands placed on a water supply system during firefighting."¹⁸

¹⁷ ibid @ 10, 4.3

¹⁸ ibid @10, 2.3

In large multi pressure zone systems serving tens of thousands customers, it is feasible and sometimes preferable to augment elevated storage with pumped ground storage to augment required flows during peak use periods. The feasibility comes in the economy of scale, wherein peak uses are in terms of hundred thousand gallons per minute usage. In theory, this equates to the equalization flow of the elevated storage, which is provided by pumping, not storage. However, if the elevated storage is undersized, this will cause the pumps to cycle frequently (sometimes as frequent as 1-2 cycles per minute); therefore, creating dangerous hydraulic transients (water hammer) and increased wear and tear on pumps and transmission mains. “These extremely high or low pressures caused by transients can be significantly dampened by storage tanks, especially those that “float on the system”.”¹⁹

Kentucky-American Water Company Storage - Any allocated storage outside the District's distribution system would be contrary to system reliability and good engineering practices. A key to this principle is that the District would not own nor control their required storage. This then leads to the question who takes precedence in the case of a natural emergency which most likely would have equal detriment to both the Districts and Kentucky-American Water Company customers.

¹⁹ Water Distribution Handbook, Larry W. Mays, McGraw-Hill Handbook @ 10.3 and 10.4

In the scenario of pumping the District's daily requirement from Kentucky-American Water Company storage, should a disruption of service, such as a transmission main break, power failure, pump failure, etc., there would not be any available emergency backup storage. " There are times when power failure, mechanical breakdown, or maintenance work will prevent use of source water pumps, or even an entire treatment plant. In addition, sudden extreme increases in demand can be caused by main breaks, broken hydrants, or similar problems. Elevated storage will automatically provide additional water to the system during such emergencies. However, if only pumped storage is available, the utility must be able to begin pumping immediately in order to maintain system pressure."²⁰

As previously discussed, the current Water Purchase Agreement with Kentucky-American Water Company has a maximum delivery rate clause. Consequently, if the District were to rely on pumping from Kentucky-American Water Company designated storage, it could exceed this maximum limit, and consequently be in violation of its agreement, during periods of high peak and emergency usage. Also, the question arises. What happens if the District loses its sole source with Kentucky-American Water Company? "Purchasing systems must frequently provide a greater-than-average water storage capacity because of the possibility that they will temporarily lose their single source."²¹

²⁰ Water Transmission and Distribution Principles and Practices of Water Supply Operations, Fourth Edition, AWWA @ 47, 48

²¹ *ibid* @ 3

Paragraph 4 of the Water Purchase Agreement between Jessamine-South Elkhorn Water District and Kentucky-American Water Company states:

“4. It is further understood and agreed by the parties hereto that Company shall not be required to provide uniform flows or maintain pressures to District and that District shall provide such elevated tanks or standpipes as may be necessary to provide adequate service to its customers. However, Company shall endeavor to maintain 30 pounds per square inch of pressure at District’s service connections under normal conditions.”²²

Paragraph 5 of the Water Purchase Agreement between Jessamine-South Elkhorn Water District and Kentucky-American Water Company states:

“5. It is understood and agreed that Company does not by this agreement undertake or contract that the service rendered through these connections shall include fire protection or sufficient quantities of water for fire extinguishment, and that District is fully aware that if it or its customers desire fire protection or sufficient quantities of water for fire extinguishment, that the District must provide the same by the erection of elevated tanks, standpipes or ground storage with booster pumps for such service.”²³

²² Jessamine-South Elkhorn Water District Tariff, Public Service Commission, Water Purchase Agreement, Kentucky-American Water Company @ 2

²³ *ibid* @ 4

In the Storage Capacity Analysis conducted by Kentucky-American Water Company dated December 21, 2005, submitted in Case No. 2005-00546 on page 11, it states:

“The above analysis continues to indicate that additional storage is needed in the Main Service and High Service gradients to meet the emergency storage requirement based on 100% of average day demand.”

This indicates that Kentucky-American Water Company does not have sufficient storage to fully meet emergency (i.e., fire and disruptions) demand on an average day, much less during peak hour or peak day demands. What happens if the District has an emergency demand? According to the reasoning of the requested deviation, Kentucky American Water Company has the capability of speeding up treated water production to meet emergency demands within their service area, to a limit. However, on page 12 under discussion of the more stringent rule of water turbidity, it is pointed out that; “The ability to operate the treatment plants with minimal flow variations to avoid treatment upsets is critical in meeting this more stringent regulation.” The report goes on to say, “Thus, maintaining storage in the distribution system that does not significantly exceed the equalization needs is preferred.” This along with language in Paragraph 4 of the Water purchase Agreement seems to definitely state that it is preferred that Jessamine-South Elkhorn Water District’s system water usage storage occur in the District’s system, not in Kentucky-American Water Company’s system.

Supervisory control of a water system is controlled by:

1. Personnel
2. Telemetry
3. Supervisory Control and Data Acquisition (SCADA)

Kentucky American Water Company, being a large multi-zone utility with three (3) treatment plants servicing several counties and hundreds of employees, has an extensive supervisory control system that incorporates all three (3) of these factors. Jessamine-South Elkhorn Water District, on the other hand, is a small rural water district with four (4) full-time employees and a part-time operator, and only employs telemetry. To further exacerbate the problem, the telemetry systems of the two systems are not compatible. All these factors culminate to the situation that, as is, it would be implausible to simultaneously operate the two systems under an emergency situation.

Even if Kentucky-American Water Company had sufficient storage to provide for its own needs and the District's, due to its location, storage provided by Kentucky-American Water Company would be inferior to the proposed elevated tank. "Storage tanks are best placed on the downstream side of the largest demand from the source. An advantage of this is that if a pipe breaks near the source, or the break will not result in disconnecting all the storage from the customers. A second advantage is

that if flow reaches the center of demand from more than one direction, the flow carried by any individual pipe will be lower and pipe sizes will generally be smaller with associated cost savings. Of course, adequate capacity must be available to refill the tank in off-peak hours.”²⁴ If storage is provided by Kentucky-American Water Company, then the increased flows, and therefore velocities to serve the centroid of demand will create increased headloss and will denigrate service to all customers, especially those on the downstream side of the centroid.

AWWA summarizes the benefits of elevated storage over pumped storage, which is directly applicable in this case. “Both elevated and high-ground storage tanks can maintain the system hydraulic grade line without the need for continuous pumping, which results in a simpler operation. Both are considered more reliable because water is delivered to the system from the tank by gravity and can provide water during a power failure. Finally, both also provide more stable system pressures.”²⁵

Conservation - “There are many reasons for water utilities to pursue wise water use and establish a water conservation program. The specific reasons will be different for each utility and the appropriate level of conservation for a utility should be tailored to local needs.”²⁶ Although not titled as such, the District has been involved in a Conservation Plan for a number of years. One highly touted factor of a conservation

²⁴ Water Distribution System Handbook, Larry W. Mays, McGraw-Hill Handbook @ 10.8

²⁵ Computer Modeling of Water Distribution Systems, M-32, Third Edition, AWWA @ 118

²⁶ Water Conservation Programs – A planning Manual, M52, First Edition, AWWA @ 3

plan is “fixture retrofit”, wherein a utility pays a customer to replace high flush toilets and install water saver showerheads and faucets. Until recently, the entirety of the District was serviced by septic tanks. During the 1980’s, the plumbing code was changed to require all structures served by septic tanks to have low flush (1.0 gpf) toilets and flow restrictor faucets/showerheads. The vast majority of present day water demand is to residents and structures that were constructed under this revised plumbing code. Consequently, there would only be a small number of structures not complying, and it would not be feasible for the District to implement and fund a purchase retrofit program. When in reality, the cost of approval of the tariff would probably exceed any potential savings.

Unaccounted for water use, primarily line leakage is a conservation item that all utilities, both large and small, should pursue. This is one the District has been most aggressive in pursuing. Following is a listing of line loss percentages for the past eight (8) years.

2006	8.3%
2007	9.7%
2008	14.7%
2009	20.3%
2010	16.8%
2011	20.7%
2012	14.1%
2013	10.2%

In 2008, a new maintenance contractor was retained by the District with direction to implement an aggressive leak detection and repair program. The results of same being demonstrated by the 2013 average of 10.2%

“Not all conservation measures will be practically, politically, or economically feasible for a given utility. For example, drought tolerant landscaping is not suitable for some climates or utilities; and capital – intensive reclamation facilities will not provide an economic return in smaller communities.”²⁷

One of the strongest engines driving the need for additional storage was the huge increase of high-end residential homes. The majority of which have installed irrigation systems that in some cases use 3-5 times their domestic use. Common sense tells one that if they have incurred this large expense of installation and operation for a green grass yard and landscape plantings, they are not going to be receptive to converting to rock gardens and cacti.

V. FUTURE DEMAND PROJECTIONS – POPULATION AND LAND USE

Population Projection and Report – Appendix A – Population Projections, Jessamine County South Elkhorn Water District, 2015 – 2050, Dallam B. Harper, Jr., AICP

Land Use (Projections of Demand) – See Storage Based on Future Land Uses, page 33 of this report.

²⁷ ibid @ 6

VI. STORAGE REQUIREMENTS

Storage Volume Components Based on Industry Standards -Based on methods that are standard to the industry, the storage requirement of a distribution system is made up of the sum of three (3) components. They include (1) Equalization Storage, (2) Fire Storage, and (3) Emergency Storage.

Equalization Storage – the first component of required storage that is typically considered is equalization storage. Equalization storage is the volume of water required to allow the system to operate with a supply of an average demand for the maximum day. Therefore, during the peak hours of usage during a maximum day, the tank would lose volume only to gain the volume back during the slack hours of usage during that same maximum day. If the equalization volume is sized correctly, the system continues to operate even through a maximum day demand. “In most communities this is based on the maximum day condition...”.²⁸ “The largest volume type is operational (or equalization) storage... Operational capacity is the volume of water supplied during a maximum water use day that is required during periods when the demand is greater than the maximum day average.”²⁹

²⁸ Computer Modeling of Water Distribution Systems, Third Edition, AWWA Manual M 32, @ 116

²⁹ The Comprehensive Water Distribution Systems Analysis Handbook for Engineers and Planners by Boulos, Lansey, and Karney @ 7.34

Equalization volume is typically calculated by multiplying a factor times the maximum day demand. This factor can vary based on the size of the system and circumstances surrounding the source. “The amount of equalization storage maintained by a community should be determined based on comparison of the production capabilities versus the demands expected on the system. In most communities, this is based on the maximum day condition and ensuring that the equalization storage is sufficient to meet the demands that exceed the production capabilities. ...equalization storage could exceed 30% for small service areas or arid climates.”³⁰

In a chapter titled, “Hydraulic Design of Water Distribution Storage Tanks,” Thomas M. Walski, who at the time was working for Pennsylvania-American Water Company, a sister company of Kentucky-American Water Company, lists equalization volume needed as a fraction of maximum daily demand being 0.25 to 0.50 for systems using off-peak pumping.³¹ Off-peak pumping refers to systems that rely on slack demand periods to fill the tanks, which is applicable to Jessamine-South Elkhorn Water District. “Typically the equalization storage requirement is between 15% and 30% of the MDD.”³²

³⁰ Computer Modeling of Water Distribution Systems M32, Third Edition, AWWA @ 116

³¹ Water Distribution System Handbook, Larry W. Mays, McGraw-Hill Handbook @ 10.13

³² CDM Smith, Preliminary Engineering Report, Spring Hill Water System Reliability Improvements in Norwalk, Connecticut, Dec. 2012, @ 3-3

The Comprehensive Water Distribution Systems Analysis Handbook for Engineers and Planners by Boulos, Lansley, and Karney (CWDSAHA) states, "... this storage typically varies between 25 and 35 percent of the maximum day demand. Thus, the operational storage requirements of a given zone or system are sized for a maximum day demand plus some 'insurance' value as supplied by the local agency."³³ This handbook is endorsed by Dr. Don J. Wood, the creator of KYPIPE Hydraulic Modeling Software.

The following table summarizes these various sources with regard to the recommended equalization factor that should be applied for equalization volume calculations.

SOURCE	Referenced Equalization Factor
AWWA Manual M 32	Greater than 30%
Walski	0.25 to 0.50
CDM Smith	15% to 30%
CWDSAHA	25% to 35%

If one were to assume the low end of the recommendation from AWWA of 0.30, then the average of all four of these recommendations is 0.30. Therefore 0.30 was selected to be used for calculation of equalization storage for the Jessamine-South Elkhorn Water District proposed tank. The calculation therefore goes as follows:

³³ The Comprehensive Water Distribution Systems Analysis Handbook for Engineers and Planners by Boulos, Lansley, and Karney @ 7-34

Calculation of Equalization Storage

$$ES = MDD \times 0.30 = 1,784,250 \times 0.30 = \underline{535,275 \text{ gallons}}$$

where,

ES = Equalization Storage (gallons)

MDD = Maximum Day Demand: 1,784,250 gallons
(July 6, 2010)

Fire Storage – “A major purpose of distribution system storage is to meet fire demands. Although fire demand may not occur often, the rate of water use is usually much greater than for domestic peak demands. Water systems are usually designed to meet fire demand in addition to normal customer needs. Fire demand can account for as much as 50% of the total capacity of a storage system.”³⁴ “Fire flow is usually the second factor to consider when determining tank capacity. Insurance Underwriters have developed formulas to determine desirable quantities, pressures, and flow durations. Using these formulas, all classes and uses of all buildings within the area served are considered. Frequently, storage requirements for fire flow are greater than the storage required for system regulation,”³⁵ “The system shall be designed and constructed to be capable of delivering the maximum-day demand and fire flow for individual and public fire requirements.”³⁶ Also the Ten States

³⁴ Water Transmission and Distribution, Fourth Edition, ASSA @ 48

³⁵ Steel Water Storage Tanks, M-42, Revised Edition, AWWA @ 58

³⁶ Distribution Systems Operation and Management, AWWA Standard @ 11

Standards addresses storage sizing:

7.0.1 Sizing

Storage facilities should have sufficient capacity, as determined from engineering studies, to meet domestic demands, and where fire protection is provided, fire flow demands.

- C. Fire Flow requirements established by the appropriate state Insurance Service Office (ISO) should be satisfied where fire protection is provided.³⁷

“It is noted by the AWWA that elevated storage provides the best, most reliable and most useful form of storage, particularly for fire protection.”³⁸ “If distribution storage tanks were not used, larger water transmission mains and larger treatment plant capacity would be required by most utilities to provide water needed for firefighting. Especially for smaller systems, storage tanks are a much more economical and operationally reliable means for meeting the short-term large demands placed on a water supply system during firefighting.”³⁹

³⁷ Recommended Standards for Waterworks, Ten States Standard, 2012 Edition @ 7

³⁸ Water Supply Systems and Evaluations Methods, Volume II, US Fire Administration, FEMMA @ 7

³⁹ Water Distribution Systems Handbook, Larry W. Mays, McGraw-Hill Handbooks, @ 10, 2.3

“All fires are basically different because of random variations in the structure and contents of the burning building, exposures (configuration of adjacent structures not involved in a fire but that are to be protected to prevent the fire from spreading), Weather, temperature, and length of time the fire has been burning. Consequently, numerous methods have been proposed for determining how much water is enough to suppress a fire.”⁴⁰ However, “a water utility cannot be expected to perform a detailed cost-benefit analysis of potential fire loss.”⁴¹

The ISO method is the industry standard for calculating Needed Fire Flow (NFF) for any type building. On the following is the formula by which this flow value is determined.⁴²

(See next page)

⁴⁰Distribution System Requirements for Fire Protection, M 31, AWWA @ 2

⁴¹ ibid @ 31

⁴² Guide for Determination of Needed Fire Flow, Edition 05-2008, Insurance Service Office (ISO) @ 1 & 2

Needed Fire Flow Formula

To estimate the amount of water needed to fight a fire in an individual, nonsprinklered building, ISO uses the formula:

$$\text{NFF} = (C_i)(O_i)[(1.0 + (X+P)_i)]$$

where,

NFF_i = the needed fire flow in gallons per minute (gpm)

C_i = a factor related to the type of construction
($C_i = 18F (A_i)^{0.5}$)

O_i = a factor related to the type of occupancy

X = a factor related to the exposure of buildings

P = a factor related to the communication between buildings

To calculate the needed fire flow of a building, you will need to determine the predominant type (class) of occupancy, exposure from the property, and the factor for communication to another building.

Utilizing this ISO method the NFF for thirteen (13) buildings in the Jessamine-South Elkhorn Water District Northwest Service Area was calculated. A table summarizing those calculations and required fire storage is located on the following page, along with a map indicating the location of the buildings.

**Required Fire Storage
Jessamine-South Elkhorn Water District
Northwest Service Area
2014**

ID #	PVA #	Location	Use	Area (SF) ⁽³⁾	F	O	X	P	NFF (Gals)	Duration (Min) ⁽⁴⁾	Req'd Fire Storage (Gals)	
1	041-10-04-010.00	103 Windhaven	Office	8,320	1.5	0.85	0.08	0	2,500	120	300,000	
2	043-00-00-004.12	201 Eagle Drive	Residential	5,080	1.0	0.85	0.00	0	1,000	120	120,000	
3	020-40-05-020.00 ⁽¹⁾	Keene-Troy Pike	Historic	4,558	1.5	0.85	0.17	0	1,800	120	216,000	
4	032-00-00-007.00	Harrodsburg Road	Stable	6,820	1.5	1.15	0.15	0	3,000	180	540,000	
5	020-30-03-011.00 ⁽²⁾	Keene-Troy Pike	Historic	13,718	1.5	1.00	0.00	0	3,000	180	540,000	
6	041-10-02-010.00	101 Windward	Residential	4,620	1.0	0.85	0.15	0	1,200	120	144,000	
7	042-00-00-006.00	101 Brannon	Church	11,560	1.5	0.85	0.18	0	3,000	180	540,000	
8	043-00-00-001.17	724 Chinkapin Drive	Residential	3,360	1.0	0.85	0.10	0	1,000	120	120,000	
9	044-00-00-003.00	Rhineheimer Lane	Stable	4,224	1.5	1.15	0.00	0	2,000	120	240,000	
10	044-00-00-001.01	Catnip Hill Pike	Stable	15,824	1.0	1.50	0.06	0	2,750	120	330,000	
11	030-10-02-007.00	56 Ave. of Champions	Residential	8,000	1.0	0.85	0.00	0	1,500	120	180,000	
12	042-00-00-007.00	5075 Harrodsburg Rd.	Church	(See Note 1 - Sprinkler System)						700	90	63,000
13	041-40-06-001.01	130 Bellerive Rd.	Retail	(See Note 1 - Sprinkler System)						700	90	63,000

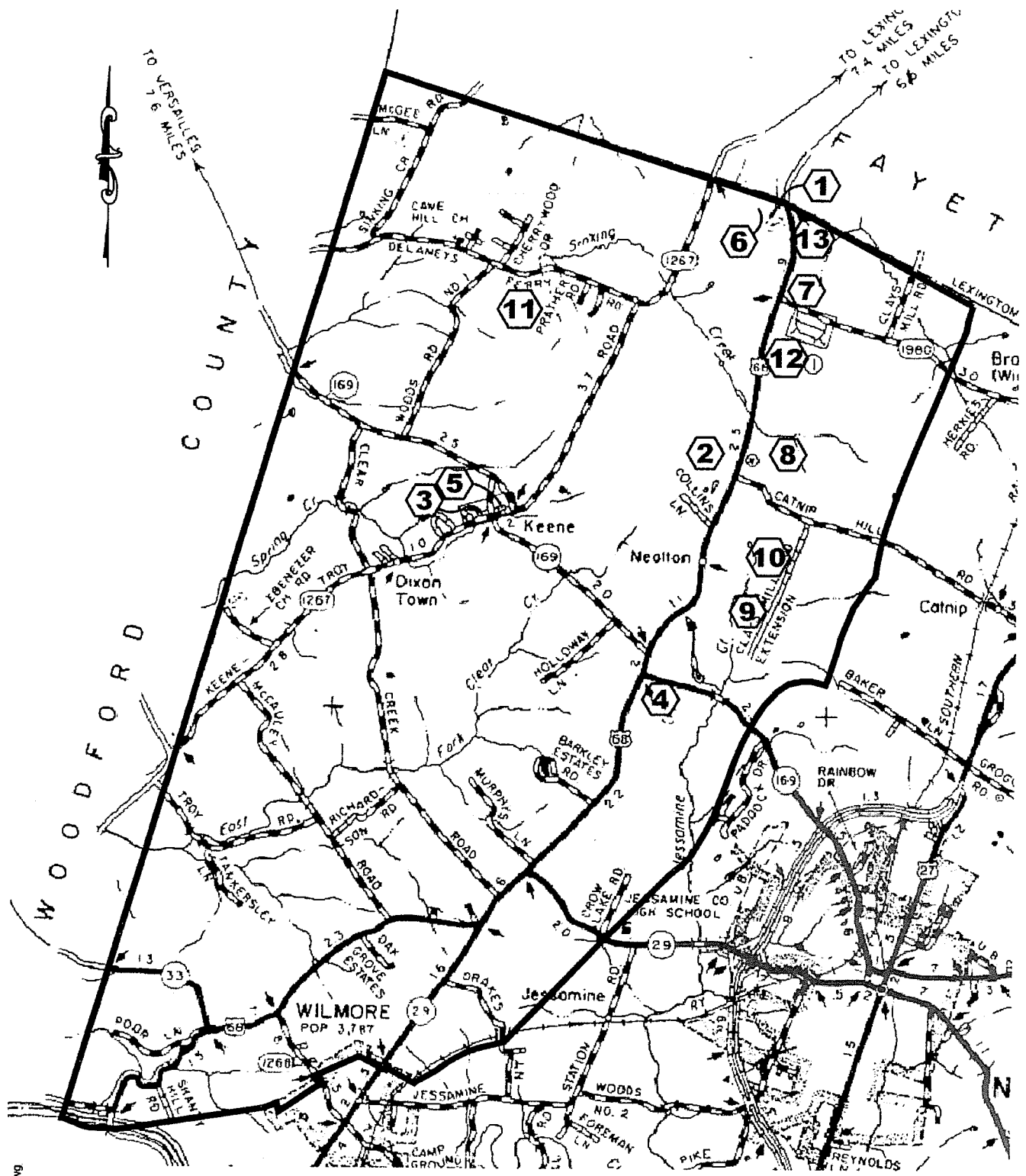
⁽¹⁾ Good Samaritan Lodge, Keene, KY

⁽²⁾ Keene Springs Hotel, Keene, KY

⁽³⁾ Area of structure obtained from records of Jessamine County (PVA) Property Valuation Administration office

⁽⁴⁾ AWWA Distribution System Requirements for Fire Protection, M31, Fourth Edition, 1998, Table 1-1, Fire Flow Duration @ 3

Note 1: Distribution System Requirements for Fire Protection, AWWA Manual - M31, Fourth Edition, 1998: Fig. 5-1, @ 41 classes retail as Ordinary Group 1 and for 4,000SF, the sprinkler density is 0.10 gpm/ft² giving a flow of 400 gpm plus a friction loss of 10% equaling 440 gpm. Table 5-1, @ 42 designates a hose stream allowance of 250 gpm which totals 690 gpm rounded to 700 gpm for duration of 90 minutes, or a NFF of 63,000 gallons.



JESSAMINE SOUTH ELKHORN
WATER DISTRICT BONDARY

① ID NUMBER

FIRE STORAGE STUDY LOCATIONS

JESSAMINE SOUTH ELKHORN
WATER DISTRICT
JESSAMINE COUNTY, KENTUCKY
FEBRUARY, 2014

Emergency Storage – “In addition to fires, other emergencies such as power outages, equipment failures, water main breaks, and temporary loss of water supply facilities can result in insufficient water supply within the distribution system. Storage provides a mechanism for providing water under such emergency conditions.”⁴³

“Another situation in which a relatively large amount of storage may be required involves a water system that depends on a single, long transmission main as its only water source. These systems usually provide storage equal to at least one average day’s water use to allow for possible repair or maintenance of the transmission main.”⁴⁴

“Emergency storage provides water during events, such as pipeline failures, equipment failures, power outages, pumping system failures, water treatment plant failures, raw water contamination events, or national disasters. The amount of emergency storage is a policy decision based on an assessment of the risk of failures and the desired degree of system dependability.”⁴⁵ “No formula exists for determining the amount of emergency storage required. The decision will have to be made on a judgment about the perceived

⁴³ Water Supply Systems and Evaluations Methods, Volume II, October 2008, US Fire Administration, FEMA @ 123

⁴⁴ Water Transmission and Distribution, Fourth Edition, AWWA @ 48

⁴⁵ Computer Modeling of Water Distribution Systems M32, Third Edition, AWWA @ 16

vulnerability of the utility's water supply."⁴⁶ "Water requirements during disasters can be assumed or estimated only in terms of the nature and magnitude of the disaster, user needs, and the capabilities of the system itself."⁴⁷

"If detailed information is not available to substantiate otherwise, it is common practice to allocate an emergency storage volume of approximately one maximum day demand for a typical water system. An extreme example of emergency storage requirements are areas that are wholly dependent upon imported water that must guard against potential failures in the delivery system."⁴⁸

Based on past experience of the District and in consultation with various personnel, they are of the opinion that emergency storage should be established as 25% of average daily demand. Therefore, for the base year of 2010, having an Average Daily Demand of 743,659 gallons, the emergency storage should be 185,915 gallons.

⁴⁶ Water Distribution Systems Handbook, Larry W. Mays, McGraw-Hill Handbook @ 10, 2.4

⁴⁴ Emergency Planning for Water Utilities, M 19, Fourth Edition, AWWA @ 32

⁴⁸ The Comprehensive Water Distribution Systems Analysis Handbook for Engineers and Planners by Boulos, Lansey, and Karney @ 7.36

The sum of Equalization, Fire, and Emergency Storage is the total required storage for the Jessamine-South Elkhorn Water District system. The calculations are as follows:

Total Required Storage (TRS)	
TRS	= ES + NFS + EM
TRS	= 535,275 + 540,000 + 185,915 = <u>1,261,190</u>
where,	
ES	= Equalization Storage (gallons)
NFS	= Needed Fire Storage (gallons)
EM	= Emergency Storage

The Total Required Storage for Jessamine-South Elkhorn Water District Northwest Distribution System is 1,261,190 gallons. It currently has 550,000 of existing storage. Therefore, it currently has a deficit of 711,190 gallons below the required storage as determined by industry standards. Based on this analysis, a 750,000 gallon tank would be necessary to meet the storage requirements.

Storage Based on PSC Regulations – Based on 807 KAR 5:066, Section 4(4), the minimum storage capacity for systems shall be equal to the average daily consumption. For the purpose of this analysis, the average daily demand used will be

for the calendar year 2010. The reason for that year being selected is that 2010 is the most recent actual census data available. A report entitled, "Population Projections, Jessamine County South Elkhorn Water District 2015 – 2050 written by Dallam B. Harper, Jr. AICP with the Bluegrass Area Development District is contained in Appendix A.

Those population projections are used herein to project the demands of the Jessamine-South Elkhorn Water District in order to analyze the future needs of storage on the system. In order to correlate the population projections with a base population, the year 2010 was used so that the correlation can be made consistent with Mr. Harpers report. His report noted that the population within the Jessamine-South Elkhorn Water District Northwest Distribution System in 2010 was 6100 people. With an average daily demand of 743,659 gallons, the usage per capita is calculated to be 121.9 gallons per day. The following table summarizes the future projections and storage requirements for Jessamine-South Elkhorn Water District (JSEWD) Northwest Distribution System based on PSC regulatory requirements.

Year	Population within JSEWD Boundary	ADD per capita (GPD)	ADD Total	Storage Deficit Based on current storage of 550,000 gallons	Tank Size Req'd
2010	6,100	121.9	743,659	193,659	250,000
2020	8,091	121.9	986,293	436,293	500,000
2025	9,067	121.9	1,105,267	555,267	750,000
2040	11,825	121.9	1,441,468	891,468	1,000,000

AWWA Manual M32 states, “Typically Master Plans are developed for the 5, 10, and 25 year projects. They include the assessment of the most cost effective solutions for the locations of new production or storage facilities...”⁴⁹ The table above includes data for 2010, but since a proposed tank would not be completed and put into service until the year 2015, the projections for years 2020, 2025, and 2040 correspond to 5, 10, and 25 year projections.

It appears, based on Mr. Harper’s projections that the Jessamine-South Elkhorn Water District-Northwest Distribution System will require in excess of 500,000 gallons of additional storage on top of its existing storage by the year 2023; which would be 8 years after the construction of the proposed tank currently under consideration. This would refer to only the minimum storage capacity requirement based on PSC Regulations, but does not refer to the storage capacity requirements based on industry standard calculations as detailed in the previous section.

Storage Based on Future Land Uses – The Comprehensive Water Distribution Systems Analysis Handbook for Engineers and Planners by Boulos, Lansey, and Karney includes a section entitled, “Determining Future Water Demands.” In that section it states, “Regardless of the demand allocation technique utilized in the creation and calibration of existing system demands, future demands are normally determined by two methodologies. The first approach is to calculate the water

⁴⁹ Computer Modeling of Water Distribution Systems, M-32, Third Edition, AWWA @ 120

demands from population projections, while the second is to use water duty factors from the general land use designations.”⁵⁰ AWWA Manual M 50, Water Resources Planning includes a section under water demand forecasting methods land use models. In that section it states, “Growth rates are established (in concert with city planning departments) for each land use segment usually by census tract allowing for public land, in field development and growth into undeveloped areas. Water use factors are developed for each land use segment and applied to the projections of populations, households, employment, and other variables used to forecast the segments.”⁵¹

Following this page is a letter from Jessamine County Planning Commission Administrator, Chris Woodall that details the future land uses within the boundary of the Northwest Distribution Systems of the Jessamine-South Elkhorn Water District. As is stated in his letter, the Comprehensive Plan is a 20-year planning document, and was adopted in 2010.

In order to convert the future land use areas to future demand forecasts, the areas are converted to total units based on Mr. Woodall’s letter, and then the average usage per customer is applied to the total units for each land use category. The average use per customer is calculated based on the actual average daily demand in 2010 which is

⁵⁰ The Comprehensive Water Distribution Systems Analysis Handbook for Engineers and Planners by Boulos, Lansey, and Karney @ 7-38

⁵¹ Water Resources Planning M 50, Second Edition AWWA @ 46

JESSAMINE COUNTY - CITY OF WILMORE
JOINT PLANNING COMMISSION
JOINT BOARD OF ADJUSTMENTS

103 North Main Street
Nicholasville, Kentucky 40356
Phone (859) 885-6415
Fax (859) 885-9681

February 27, 2014

Bruce E. Smith, Esq.
Bruce E. Smith Law Offices, PLLC
201 S. Main Street
Nicholasville, KY 40356

Re: Future Land Uses within the Jessamine-South Elkhorn Water District Boundary

Dear Mr. Smith:

Pursuant to your request, I have attached to this letter an exhibit of future and existing land uses within the Jessamine-South Elkhorn Water District's Northwest Service Boundary prepared by Bluegrass Area Development District broken down into various land use categories. On it is a table listing the acres within that boundary. I understand that you are requesting this information to convert these future land uses into a future water demand forecast.

Chapter 10 of the Comprehensive Plan entitled *Land Use* defines the residential categories and lists the minimum size lot in each.

- Very low residential -1-acre lots (typically 1 unit per acre).
- Low density residential - 22,000 SF lots (typically 2 units per acre).
- Medium density residential -15,000 SF lots (typically 2.75 units per acre).
- High density residential - 6,500 SF lots (typically 6.7 units per acre).

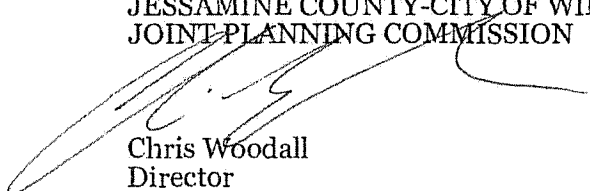
The majority of areas designated for future land use changes in Jessamine-South Elkhorn Water District's Northwest Service Area are residential. The only parcel designated for future land use change that is not residential is a 5.11 acre future professional office parcel that has been developed since the adoption of the plan. I will also note that in addition to the future land uses shown on the Land Use Map, there are over 800 potential lots that have been re-zoned residential and are shown in the exhibit as "existing land uses," though they are not currently utilizing utility services and are not developed.

The 2010 Wilmore - Nicholasville - Jessamine County Joint Comprehensive Plan is the single most complete and inclusive statement of this community's vision of itself and its goals in the coming years. It also represents the long-range plan of what this community wants to become, presenting a vision of the future of the community over the next 20-years.

I hope that this provides you with the information you need to develop your future projections. However, if you have any questions or need any further information, please feel free to contact me.

Sincerely,

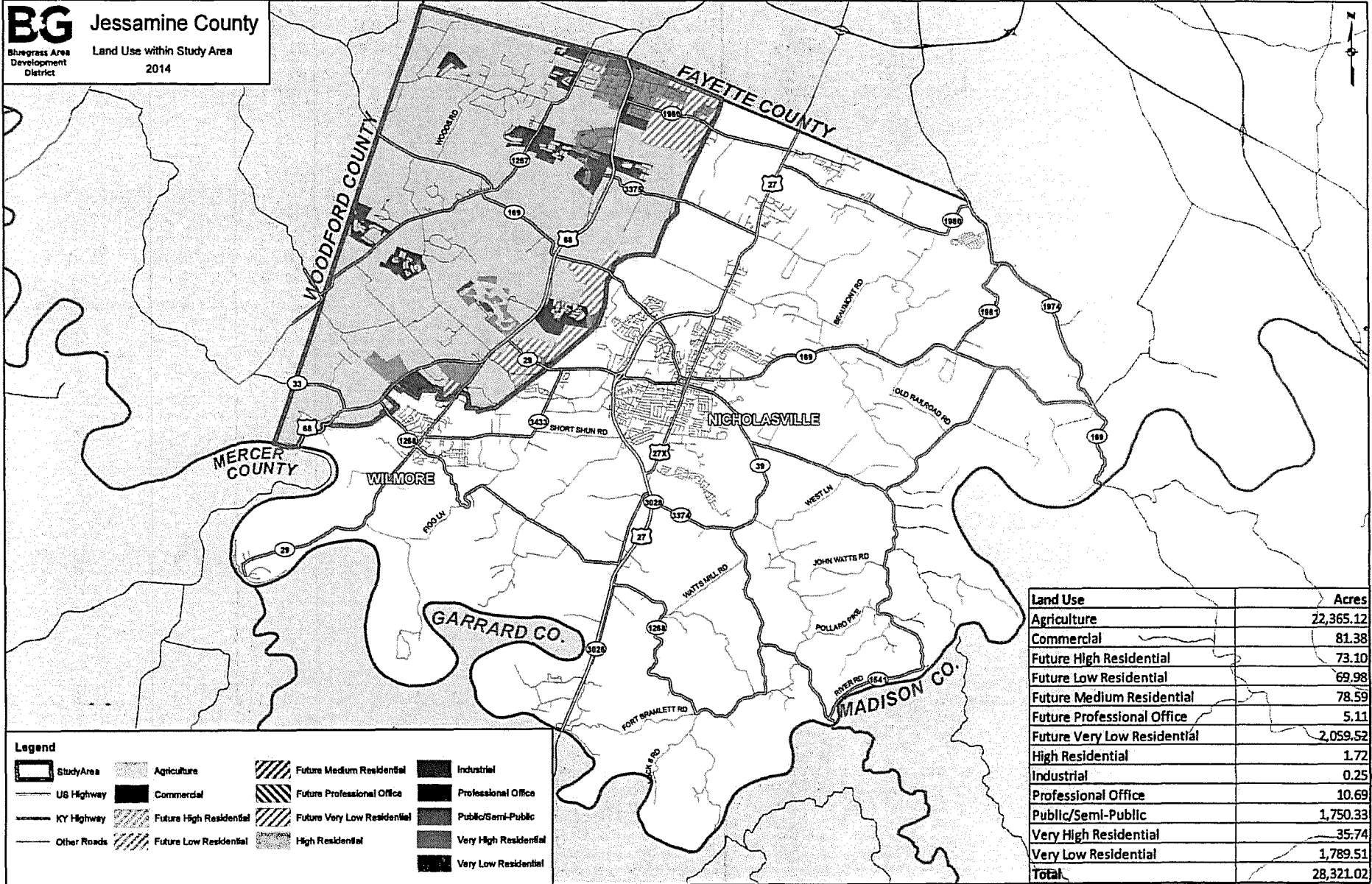
JESSAMINE COUNTY-CITY OF WILMORE
JOINT PLANNING COMMISSION



Chris Woodall
Director

CW/jt
enc.

cc: L. Christopher Horne
Corr.



Land Use	Acres
Agriculture	22,365.12
Commercial	81.38
Future High Residential	73.10
Future Low Residential	69.98
Future Medium Residential	78.59
Future Professional Office	5.11
Future Very Low Residential	2,059.52
High Residential	1.72
Industrial	0.25
Professional Office	10.69
Public/Semi-Public	1,750.33
Very High Residential	35.74
Very Low Residential	1,789.51
Total	28,321.02

Legend

Study Area	Agriculture	Future Medium Residential	Industrial
UG Highway	Commercial	Future Professional Office	Professional Office
KY Highway	Future High Residential	Future Very Low Residential	Public/Semi-Public
Other Roads	Future Low Residential	High Residential	Very High Residential
			Very Low Residential

743,659 gallons per day divided by the average number of customers in the District in 2010 which is 2226, leaving an average of 334 gallons/day/customer. The table below calculates the total demand forecasted for the District over the next 20-years based on the Comprehensive Plan.

2030 LAND USE PROJECTION					
Land Use Category	Units/Acres	Acres	Total Units	Average Use per Customer (GPD)	New Usage
Future High Residential	6	73.10	438	334	146,292
Future Med. Residential	2.75	78.59	216	334	72,144
Future Low Residential	1.9	69.98	132	334	44,088
Future Very Low Residential	1	2059.52	2,059	334	637,706
Lots Zoned but Not Developed	---	---	800	334	267,200
Total					1,270,430

Based on this forecast, the District can expect to add an additional 1,270,430 gallons/day to its Average Daily Use by the year 2030 (coincidentally the Comprehensive Plan was adopted in 2010 which is the same base line year for all other future demand methods used in this report). So, based on this methodology, an additional 1,217,430 gallons per day, on top of the existing 743,569 gallons per day, would yield a total average daily demand of 1,961,089 GPD by the year 2030. By subtracting 550,000 gallons of existing storage from that total leaves a balance of 1,411,089 gallons that would need to be added to the system by the year 2030 in order to provide the minimum storage required by the PSC Regulations.

VII. PRESENT WORTH COST ANALYSIS

In order to make an objective cost comparison of alternatives, a Present Worth Cost Analysis is performed. For the purposes of this analysis, two alternatives will be considered.

- 1) Build a 750,000 gallon tank now.

- 2) Build a 500,000 gallon tank now and a 250,000 gallon tank in the year 2023.

Considering the storage requirements based on standards of the industry, the 750,000 gallon tank is justified now. The rationale behind Alternative #2 is based on the storage requirements of PSC Regulations. Based solely on PSC Regulations, the minimum sized tank that could be built in 2010 was 250,000 gallons. However, demand projections based on the population projections provided by Bluegrass Area Development District show a need for over 300,000 gallons by the year 2015 (The 2015 District Population Projection of 7,074 with an Average Use Rate Per Capita of 121.9 yields an average daily demand of 862,320 GPD. Therefore, the smallest tank considered to be built now to meet PSC Regulations is 500,000 gallons. Based on the aforementioned Population Projections and using PSC Regulations as a minimum requirement, the District's capacity will be exceeded by the year 2023 if a 500,000 gallon tank is built now, therefore requiring an additional 250,000 gallons in 2023.

Prices for the new tank construction and for maintenance over a 60-year span were given by Caldwell Tanks, Inc. for 250,000 gallons, 500,000 gallons, and 750,000 gallons tanks. These cost details are included as Appendix B. In order to compare the two alternatives, the Present Worth Cost of maintenance for all three tanks is converted to an annualized uniform series (A/P, i%, n). The interest rate used in this analysis is 4.6% based on a February 25, 2014 email from Kristen Mallard on behalf of Kentucky Rural Water Association. (See Appendix C).

Converting Present Worth (PW) of Tank Maintenance	
To Annualized Uniform Series (A)	
(A/P, i%, n), Calculating a Capital Recovery Factor	
$[(i(1+i)^n) / (i(1+i)^n - 1)]$	
where	
i	= 4.6%
n	= 60-years
Therefore	
A_{250k}	= 248,434 x 0.04932 = \$12,253
A_{500k}	= 344,941 x 0.04932 = \$17,012
A_{750k}	= 432,529 x 0.04932 = \$21,332

Source of formulas⁵²

Since the 250,000 gallon tank in Alternative #2 will be built 8-years after the 500,000 gallon tank, its annual maintenance costs must be converted to a PW in year 2023) and then converted from a Future Worth (F) to P over 8-years.

⁵² Principals of Engineering Economy, Eighth Edition, Grant, Ireson, Leavenworth @ front insert

Annual Maintenance Costs Converted to PW

$$P_{250k} = A_{250k} [(i(1+i)^n - 1) / (i(1+i)^n)] = 12,253 \times 19.6421 = \$240,675$$

where

$$i = 4.6\%$$

$$n = 52$$

(Since both alternatives are considered over 60-years $n=52$)

$$\text{Maintenance } P_{250k} = F_{250k} [1 / (1+i)^n] = 240,675 \times 0.6978 = \$167,949$$

where

$$i = 4.6\%$$

$$n = 8$$

So Maintenance P_{250k} is the cost of annual maintenance converted to a Present Worth in year 2015.

Present Worth Cost Conversion for Alternative # 1

$$P_{alt1} = P_{750k} + (P/A_{750k}, 4.6\%, 60)$$

$$P_{alt1} = 1,350,000 + 432,529 = \underline{\underline{\$1,782,579}}$$

where

P_{750k} = initial cost of construction

$(P/A_{750k}, i\%, n)$ = Annual Maintenance converted to Present Worth

Present Worth Cost Conversion for Alternative # 2

$$\begin{aligned} P_{\text{alt2}} &= P_{500k} + (P/A_{500k}, 4.6\%, 60) + (P/F_{250k}, 4.6\%, 8) + (\text{Maintenance } P_{250}) \\ &= 1,0250,000 + 344,941 + 775,000[1/(1+0.046)^8] + 167,949 \\ &= \underline{\underline{\$2,078,704}} \end{aligned}$$

where

P_{500k} = initial cost of construction (500k tank)

$(P/A_{500k}, 4.6\%, 60)$ = Annual Maintenance converted to Present Worth

$(P/A_{250k}, 4.6\%, 8)$ = initial cost of 250k tank converted from Future Worth to Present Worth over 8 years

$(\text{Maintenance } P_{250})$ = Maintenance Cost of 250k converted to Present Worth for 2015

The Present Worth Cost of building the 750,000 gallon tank now is \$295,175.00, less than Alternative #2. Therefore, Alternative # 1 is preferred.

(Note: Salvage value is considered insignificant for this analysis)

APPENDIX A
Population Projections
Jessamine-South Elkhorn Water District
2015 - 2050

Population Projections
Jessamine County South Elkhorn Water
District
2015- 2050

Dallam B. Harper, Jr., AICP
Bluegrass Area Development District
699 Perimeter Drive
Lexington, KY 40517

Executive Summary

The Bluegrass Area Development District, one of fifteen Area Development Districts in the Commonwealth of Kentucky, has been engaged to produce population projections for the northwest area of the Jessamine County South Elkhorn Water District (JCSEWD). The area studied is identified (shaded on the attached two maps) and spans 28,321 acres of Jessamine County's 110,156 acre land mass.

Dallam B. Harper, Jr., AICP, the ADD's Senior Planner, has researched the historical population trends, denoted what percent of the County's total population increase occurred in each of the last two decades within the JCSEWD, made a share determination for the future and applied that (share) factor to the Kentucky State Data Center's county population projections to generate a reliable population projection for the JCSEWD.

Below are the outcomes:

JSCEWD	Population**	Increase	Growth (10 yr)
Population Projection 2015	7074	974	
Population Projection 2020	8091	1017	32.63%
Population Projection 2025	9067	976	
Population Projection 2030	10017	950	23.80%
Population Projection 2035	10939	922	
Population Projection 2040	11825	886	18.04%
Population Projection 2045	12672	847	
Population Projection 2050	13503	831	14.19%

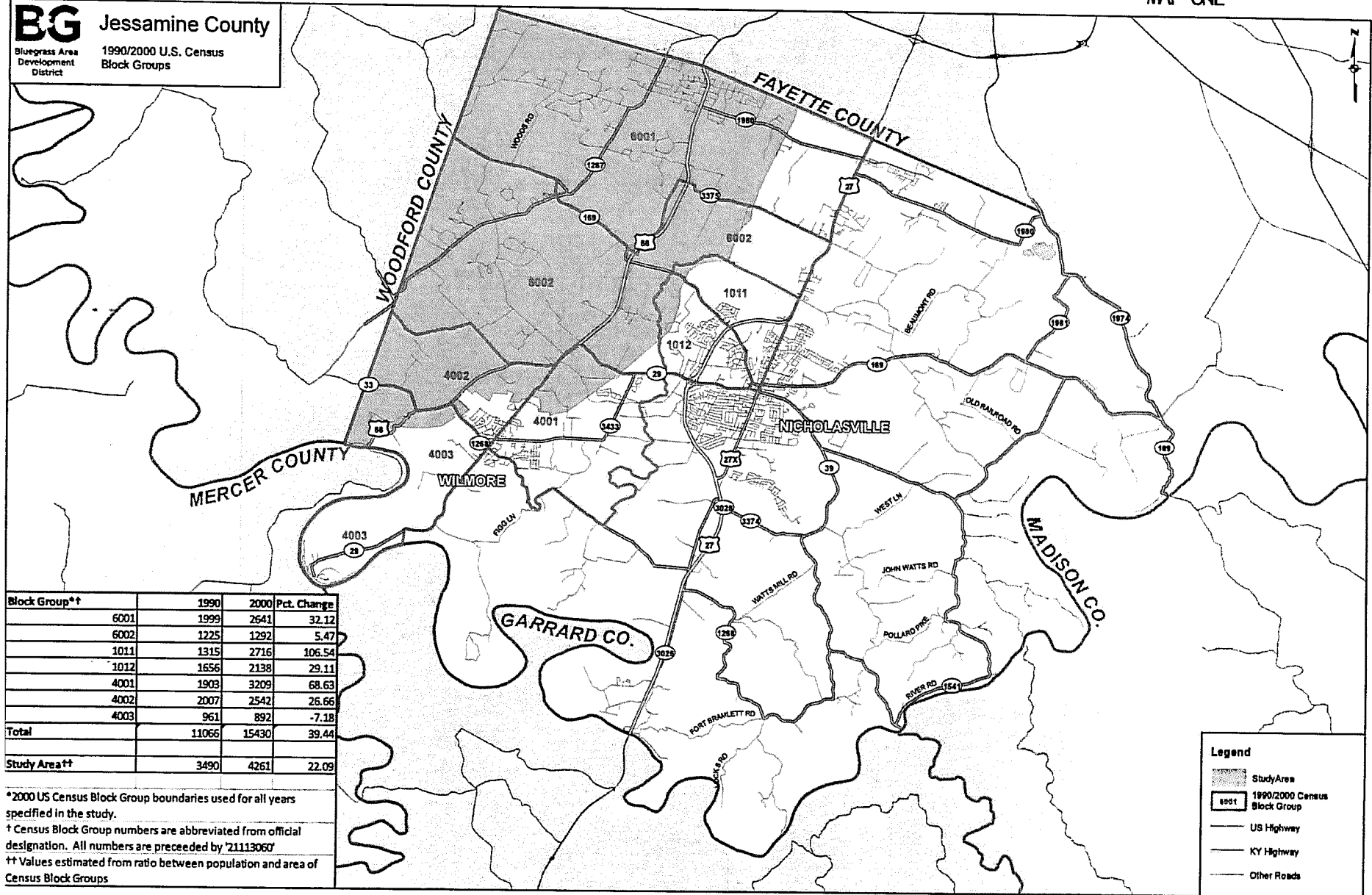
** BGADD projections using a 19.26% share of total population growth

Discussion – Maps

Historical population information is readily available from the US Census Bureau and/or the Kentucky State Data Center (KSDC) for legislative jurisdictions like Jessamine County. The Census Bureau does not, however, specifically bundle their data along the boundary lines of the Jessamine County South Elkhorn Water District (JSCEWD). When this information is needed, we capture census block group data and add them together.

The Group Census Block Boundaries remained the same during the 1990 and 2000 census so the population data for both census years appear on the first map. In 2010 there were more block groups so that population information is presented on the second map.

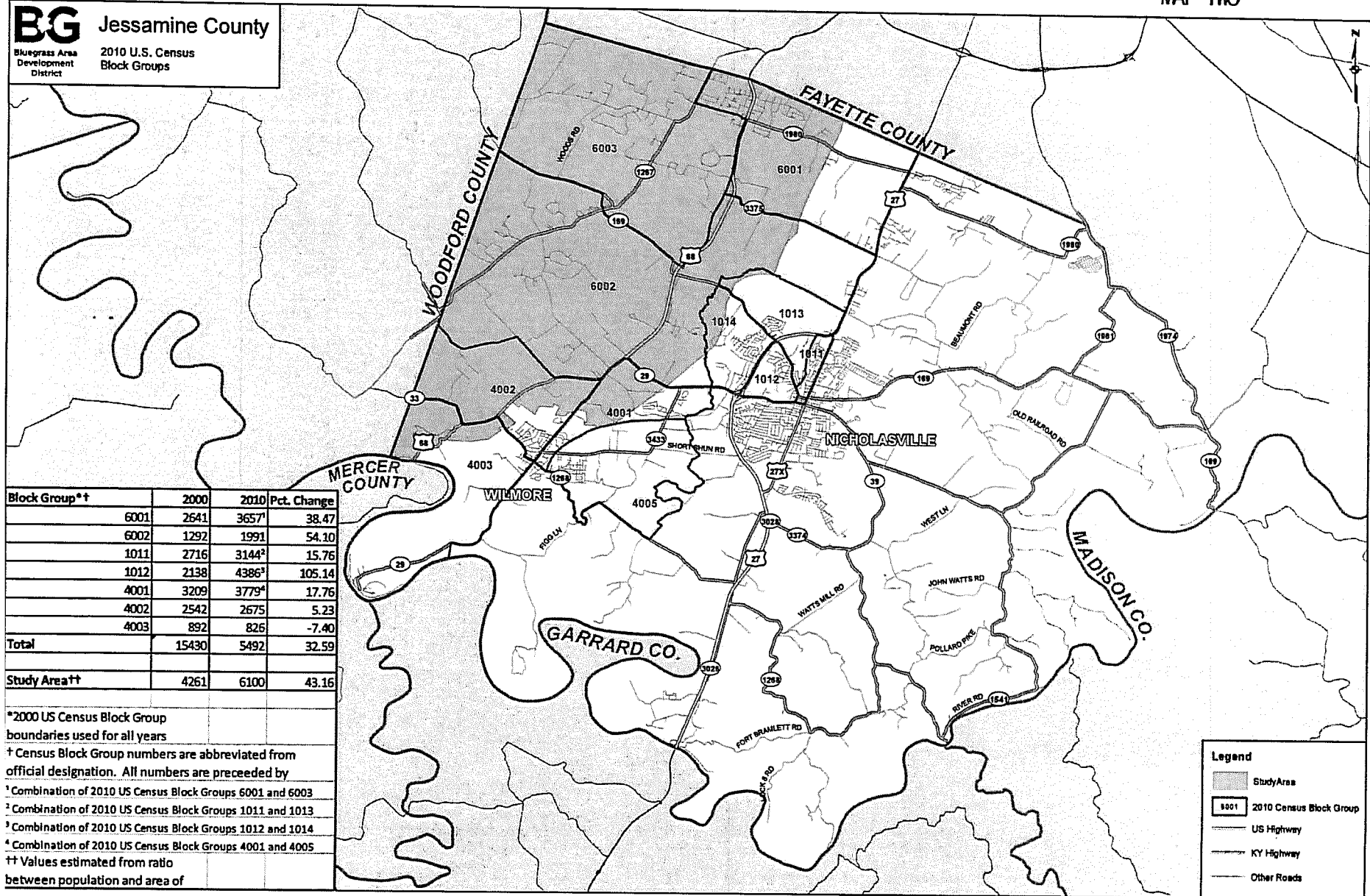
BG Jessamine County
 Bluegrass Area Development District
 1990/2000 U.S. Census Block Groups



Block Group*†	1990	2000	Pct. Change
6001	1999	2641	32.12
6002	1225	1292	5.47
1011	1315	2716	106.54
1012	1656	2138	29.11
4001	1903	3209	68.63
4002	2007	2542	26.66
4003	961	892	-7.18
Total	11066	15430	39.44
Study Area**	3490	4261	22.09

*2000 US Census Block Group boundaries used for all years specified in the study.
 † Census Block Group numbers are abbreviated from official designation. All numbers are preceded by '21113060'
 ** Values estimated from ratio between population and area of Census Block Groups

BG Jessamine County
 Bluegrass Area Development District
 2010 U.S. Census Block Groups



Block Group*†	2000	2010	Pct. Change
6001	2641	3657 ¹	38.47
6002	1292	1991	54.10
1011	2716	3144 ²	15.76
1012	2138	4386 ³	105.14
4001	3209	3779 ⁴	17.76
4002	2542	2675	5.23
4003	892	826	-7.40
Total	15430	5492	32.59
Study Area**	4261	6100	43.16

*2000 US Census Block Group boundaries used for all years
 † Census Block Group numbers are abbreviated from official designation. All numbers are preceded by
¹ Combination of 2010 US Census Block Groups 6001 and 6003
² Combination of 2010 US Census Block Groups 1011 and 1013
³ Combination of 2010 US Census Block Groups 1012 and 1014
⁴ Combination of 2010 US Census Block Groups 4001 and 4005
 ** Values estimated from ratio between population and area of

Discussion – Historic Growth Trends

Historically, Jessamine County has grown fast in the past two decades (1990 – 2010) but the Jessamine County South Elkhorn Water District has grown faster:

	Jessamine County**	Population Increase	Percent Growth
Census 1990 Population	30,508		
Census 2000 Population	39,041	8,533	27.97%
Census 2010 Population	48,586	<u>9,545</u>	24.45%
20 Year Growth - Jessamine County		18078	59.36%

** US Census Bureau

	H2O District**	Population Increase	Percent Growth
Census 1990 Population	3,490		
Census 2000 Population	4,261	771	22.09%
Census 2010 Population	6,100	<u>1,839</u>	43.16%
20 Year Growth - JCSEWD		2,610	74.78%

** see Map Citations

The Water District's share of the total population increase of Jessamine County during the last two decades is:

H2O District Share of Growth	1990 - 2000	2000 - 2010
	9.04%	19.26%

Discussion – Future Growth Trends

Released in December, 2011, these Jessamine County KSDC population forecasts incorporate the results of the 2010 Census:

KY Data Center Projections for the County	Population**	Increase	Growth (10 yr)
Population Projection 2015	53,645	5,059	
Population Projection 2020	58,928	5,283	21.29%
Population Projection 2025	63,999	5,071	
Population Projection 2030	68,933	4,934	15.28%
Population Projection 2035	73,722	4,789	
Population Projection 2040	78,323	4,601	13.62%
Population Projection 2045	82,721	4,398	
Population Projection 2050	87,040	4,319	11.12%

By factoring in JSCEWD's share of the projected population increase, the District can forecast its future population base to predict demand and storage capacity.

H2O District - 19.26% Share	Population	Increase	Growth
Population Projection 2015	7074	974	
Population Projection 2020	8091	1017	32.63%
Population Projection 2025	9067	976	
Population Projection 2030	10017	950	23.80%
Population Projection 2035	10939	922	
Population Projection 2040	11825	886	18.04%
Population Projection 2045	12672	847	
Population Projection 2050	13503	831	14.19%

These projections will produce the following growth rates:

Projected Rates of growth	1990-2010 Actual	2010 - 2030	2030-2050
County	59.36%	41.87%	26.26%
H2O District	74.78%	64.21%	34.80%

APPENDIX B

Tank Costs Initial and Maintenance

From: Rusty Spangler [<mailto:rspangler@caldwelltanks.com>]
Sent: Friday, February 14, 2014 3:10 PM
To: john@horneeng.com
Subject: Jessamine-South Elkhorn Water District, KY

Good afternoon Mr. Horne. I appreciate the call today and the opportunity to talk with you about the Jessamine-South Elkhorn Water District elevated tank.

I am happy to provide updated budget pricing on the proposed elevated tank that original bid in July of 2012. Our budget pricing is assuming the same scope of work as originally detailed in the project plans and specifications. As requested, we have also provided budget pricing on alternate tank capacities. The pricing below is based on a Multi-Column style elevated tank with a high water elevation of 148' as measured from top of tank foundation. If alternate tank styles are considered, please advise and we will be happy to provide.

1,000,000 Gallon 70.0' diameter x 38.75' operating head range = \$1,675,000
750,000 Gallon 60.0' diameter x 38.75' operating head range = \$1,350,000
500,000 Gallon 50.0' diameter x 37.00' operating head range = \$1,025,000
400,000 Gallon 50.0' diameter x 30.00' operating head range = \$ 925,000

As I mentioned in our phone conversation, I will be happy to meet with you and the water district if I can be of any help.

Again, thank you for the call. It was a pleasure to talk with you again.

Rusty

C. R. Spangler
Sales Manager - Water Division



Caldwell Tanks, Inc.
4000 Tower Road
Louisville, KY 40219
(502) 964-3361
(502) 810-0963 {Fax to my inbox}
(502) 966-8732 {FAX to Louisville, KY Office}
rspangler@CaldwellTanks.com

www.caldwellwatertanks.com
www.caldwell1887.com

Net Present Value Initial Construction and Major Repaint Operations

Input:

Date: 2/26/2014
 Job Name: Jessamine County, KY
 Capacity: 250,000 gallons
 Style: Multi-Column
 Initial Cost: \$ 775,000

Surface Areas	Surface Area (sf)	Repaint Cost (\$/sf)	Coating Life Expectency (yrs)
Interior Wet	8,000	7.00	15
Interior Dry	0	7.00	15
Topcoat Only		2.75	
Exterior	15,000	6.50	15
Topcoat Only		2.75	

Interest Rates
 Inflation: 3.00%
 Discount: 5.00%

Output:

Interior Wet

Year	Activity	Future Value	Net Present Value
15	Full Repaint	\$ 87,246	\$ 41,967
30	Full Repaint	\$ 135,927	\$ 31,450
45	Full Repaint	\$ 211,769	\$ 23,569
60	Full Repaint	\$ 329,930	\$ 17,663
TOTAL			\$ 114,649

Interior Dry

Year	Activity	Future Value	Net Present Value
15	Topcoat	\$ -	\$ -
30	Full Repaint	\$ -	\$ -
45	Topcoat	\$ -	\$ -
60	Full Repaint	\$ -	\$ -
TOTAL			\$ -

Exterior

Year	Activity	Future Value	Net Present Value
15	Topcoat	\$ 64,266	\$ 30,913
30	Full Repaint	\$ 236,658	\$ 54,757
45	Topcoat	\$ 155,991	\$ 17,361
60	Full Repaint	\$ 574,431	\$ 30,752
TOTAL			\$ 133,784

Initial Cost \$ 775,000
 NPV Repaint \$ 248,434

Total \$ 1,023,434

The information above summarizes the Net Present Value of initial construction and major repaint operations over a 60 year period. The cycles are based on the "Expected Service Life" document produced by KTA-Tator, Inc. over a 60 year period.

Notes: (\$/sf) values are entered as a budget price in 2014 dollars; routine maintenance and inspection is not included in this analysis though should not vary widely based on the tank style; changing coatings life expectancy or interest rates (both inflation and discount) would have a significant impact.

Net Present Value Initial Construction and Major Repaint Operations

Input:

Date: 2/26/2014
 Job Name: Jessamine County, KY
 Capacity: 500,000 gallons
 Style: Multi-Column
 Initial Cost: \$ 1,025,000

Surface Areas	Surface Area (sf)	Repaint Cost (\$/sf)	Coating Life Expectency (yrs)
Interior Wet	11,000	7.00	15
Interior Dry	0	7.00	15
Topcoat Only		2.75	
Exterior	21,000	6.50	15
Topcoat Only		2.75	

Interest Rates	
Inflation:	3.00%
Discount:	5.00%

Output:

Interior Wet

Year	Activity	Future Value	Net Present Value
15	Full Repaint	\$ 119,963	\$ 57,704
30	Full Repaint	\$ 186,899	\$ 43,244
45	Full Repaint	\$ 291,183	\$ 32,408
60	Full Repaint	\$ 453,653	\$ 24,287
TOTAL			\$ 157,643

Interior Dry

Year	Activity	Future Value	Net Present Value
15	Topcoat	\$ -	\$ -
30	Full Repaint	\$ -	\$ -
45	Topcoat	\$ -	\$ -
60	Full Repaint	\$ -	\$ -
TOTAL			\$ -

Exterior

Year	Activity	Future Value	Net Present Value
15	Topcoat	\$ 89,973	\$ 43,278
30	Full Repaint	\$ 331,321	\$ 76,660
45	Topcoat	\$ 218,387	\$ 24,306
60	Full Repaint	\$ 804,204	\$ 43,053
TOTAL			\$ 187,298

Initial Cost \$ 1,025,000
 NPV Repaint \$ 344,941

Total **\$ 1,369,941**

The information above summarizes the Net Present Value of initial construction and major repaint operations over a 60 year period. The cycles are based on the "Expected Service Life" document produced by KTA-Tator, Inc. over a 60 year period.

Notes: (\$/sf) values are entered as a budget price in 2014 dollars; routine maintenance and inspection is not included in this amount though should not vary widely based on the tank style; changing coatings life expectancy or interest rates (both inflation and discount) would have a significant impact.

Net Present Value Initial Construction and Major Repaint Operations

Input:

Date: 2/26/2014

Job Name: Jessamine County, KY

Capacity: 750,000 gallons

Style: Multi-Column

Initial Cost: \$ 1,350,000

Surface Areas	Surface Area (sf)	Repaint Cost (\$/sf)	Coating Life Expectency (yrs)
Interior Wet	14,000	7.00	15
Interior Dry	0	7.00	15
Topcoat Only		2.75	
Exterior	26,000	6.50	15
Topcoat Only		2.75	

Interest Rates	
Inflation:	3.00%
Discount:	5.00%

Output:

Interior Wet

Year	Activity	Future Value	Net Present Value
15	Full Repaint	\$ 152,681	\$ 73,442
30	Full Repaint	\$ 237,872	\$ 55,038
45	Full Repaint	\$ 370,596	\$ 41,246
60	Full Repaint	\$ 577,377	\$ 30,910
TOTAL			\$ 200,637

Interior Dry

Year	Activity	Future Value	Net Present Value
15	Topcoat	\$ -	\$ -
30	Full Repaint	\$ -	\$ -
45	Topcoat	\$ -	\$ -
60	Full Repaint	\$ -	\$ -
TOTAL			\$ -

Exterior

Year	Activity	Future Value	Net Present Value
15	Topcoat	\$ 111,395	\$ 53,583
30	Full Repaint	\$ 410,207	\$ 94,913
45	Topcoat	\$ 270,384	\$ 30,093
60	Full Repaint	\$ 995,681	\$ 53,304
TOTAL			\$ 231,893

Initial Cost \$ 1,350,000

NPV Repaint \$ 432,529

Total \$ 1,782,529

The information above summarizes the Net Present Value of initial construction and major repaint operations over a 60 year period. The cycles are based on the "Expected Service Life" document produced by KTA-Tator, Inc. over a 60 year period.

Notes: (\$/sf) values are entered as a budget price in 2014 dollars; routine maintenance and inspection is not included in this amount though should not vary widely based on the tank style; changing coatings life expectancy or interest rates (both inflation and discount) would have a significant impact.

APPENDIX C

E-mail from Kristen Millard
with Interest Rate Information

Horne, Christopher

From: Kristen Millard [kristen.millard@RaymondJames.com]
Sent: Tuesday, February 25, 2014 11:47 AM
To: christopher@homeeng.com
Cc: Andy Lange
Subject: RE: Jessamine South Elkhorn
Attachments: Jessamine S Elkhorn 20 2.25.14.XLS; Jessamine S Elkhorn 25 2.25.14.XLS; Jessamine S Elkhorn 30 2.25.14.XLS

Hi Christopher, Since you have a variety of options, I just used the \$1,675,000. The average rates and debt service will depend on how long JSE wants to take out the debt, so I attached numbers for a 20, 25 and 30 year term. Also, open market bonds have ascending rates, but I've listed the average rates for each term below. Feel free to call or email me with any questions. When do you think that funding will be needed?

20: 4.12%
 25: 4.38%
 30: 4.60%

Kristen Millard
 First Vice President

Public Finance
 T: 859.232.8249 F: 859.232.8255
 489 East Main Street, Lexington KY 40507

RAYMOND JAMES[®]

From: Horne, Christopher [mailto:christopher@homeeng.com]
Sent: Tuesday, February 25, 2014 9:57 AM
To: Kristen Millard
Subject: RE: Jessamine South Elkhorn

Kristen,

I need to do some present worth analysis on various alternatives and I am not yet sure which alternatives I will need to consider. So I am including the budget prices for various sized tanks as provided by Caldwell Tanks below. What I need is an interest rate for the PW analysis.

1,000,000 Gallon 70.0' diameter x 38.75' operating head range = \$1,675,000
 750,000 Gallon 60.0' diameter x 38.75' operating head range = \$1,350,000
 500,000 Gallon 50.0' diameter x 37.00' operating head range = \$1,025,000
 400,000 Gallon 50.0' diameter x 30.00' operating head range = \$ 925,000
 250,000 Gallon 43.0' diameter x 25.5' operating head range = \$775,000

The Project Profile currently listed with the KIA is for a 1 million gallon tank and shows project expenses in addition to construction as \$567K. Let me know if you need anything else. Thanks for your quick response, we are under a deadline.

Christopher Horne
 Horne Engineering

3/1/2014

216 South Main Street
Nicholasville, Kentucky 40356
(859) 885-9441 office

From: Kristen Millard [<mailto:kristen.millard@RaymondJames.com>]
Sent: Tuesday, February 25, 2014 9:32 AM
To: Christopher@Horneeng.com
Subject: FW: Jessamine South Elkhorn

Hi Christopher,

Andy Lange with KY Rural Water emailed that you're looking for some numbers for Jessamine South Elkhorn's PSC application. Do you have a construction amount that I can use in the numbers?

Kristen Millard
First Vice President

Public Finance
T: 859.232.8249 F: 859.232.8255
489 East Main Street, Lexington KY 40507

RAYMOND JAMES*

From: Andy Lange [<mailto:a.lange@krwa.org>]
Sent: Monday, February 24, 2014 4:20 PM
To: Kristen Millard
Subject: Jessamine South Elkhorn

Kristen,

Could you send Christopher Horne of Horne Engineering an estimate of interest rates for their tank project? He said he needs something in writing to include in his PSC filing.

His email is: Christopher@Horneeng.com

Thank you!

--

Andy Lange
Assistant Director
Kentucky Rural Water Association
270.843.2291

This electronic mail transmission is intended solely for the named individual or entity to which it is addressed and may contain information that is confidential, proprietary and/or legally privileged. If you are not the intended recipient, do not read, copy, retain, forward or otherwise disseminate this message or any attachment. If you have received this transmission in error, please notify the Kentucky Rural Water Association via reply e-mail and delete all copies of the message and any attachment from your system.

Raymond James & Associates, Inc. The information contained herein is solely intended to suggest/discuss potentially applicable financing applications and is not intended to be a specific buy/sell recommendation, nor is it an official confirmation of terms. Any terms discussed herein are preliminary

3/1/2014

until confirmed in a definitive written agreement. Changes to any prices, levels, or assumptions contained herein may have a material impact on results. Any estimates or assumptions contained herein represent our best judgment as of the date indicated and are subject to change without notice. Examples are merely representative and are not meant to be all-inclusive. Investors, borrowers, or other market participants should not rely upon this information in making their investment/financing decisions. The information set forth herein was gathered from sources which we believe, but do not guarantee, to be accurate.

Preliminary

\$1,745,000

Jessamine South Elkhorn Water District

Potential Loan through the Kentucky Rural Water Finance Corporation

Sources & Uses

Dated 03/19/2014 | Delivered 03/19/2014

Sources Of Funds

Par Amount of Bonds	\$1,745,000.00
---------------------	----------------

Total Sources	\$1,745,000.00
----------------------	-----------------------

Uses Of Funds

Original Issue Discount (OID)	4,936.05
-------------------------------	----------

Total Underwriter's Discount (1.750%)	30,537.50
---------------------------------------	-----------

Costs of Issuance	31,175.00
-------------------	-----------

Deposit to Project Construction Fund	1,675,000.00
--------------------------------------	--------------

Rounding Amount	3,351.45
-----------------	----------

Total Uses	\$1,745,000.00
-------------------	-----------------------

Preliminary

\$1,745,000

Jessamine South Elkhorn Water District

Potential Loan through the Kentucky Rural Water Finance Corporation

Debt Service Schedule

Date	Principal	Coupon	Interest	Total P+I	Fiscal Total
03/19/2014	-	-	-	-	-
08/01/2014	-	-	27,465.17	27,465.17	-
12/31/2014	-	-	-	-	27,465.17
02/01/2015	30,000.00	2.050%	37,452.50	67,452.50	-
08/01/2015	-	-	37,145.00	37,145.00	-
12/31/2015	-	-	-	-	104,597.50
02/01/2016	35,000.00	2.150%	37,145.00	72,145.00	-
08/01/2016	-	-	36,768.75	36,768.75	-
12/31/2016	-	-	-	-	108,913.75
02/01/2017	35,000.00	2.300%	36,768.75	71,768.75	-
08/01/2017	-	-	36,366.25	36,366.25	-
12/31/2017	-	-	-	-	188,135.00
02/01/2018	35,000.00	2.500%	36,366.25	71,366.25	-
08/01/2018	-	-	35,928.75	35,928.75	-
12/31/2018	-	-	-	-	187,295.00
02/01/2019	35,000.00	2.600%	35,928.75	70,928.75	-
08/01/2019	-	-	35,473.75	35,473.75	-
12/31/2019	-	-	-	-	106,482.50
02/01/2020	35,000.00	3.850%	35,473.75	70,473.75	-
08/01/2020	-	-	34,940.00	34,940.00	-
12/31/2020	-	-	-	-	185,413.75
02/01/2021	40,000.00	3.850%	34,940.00	74,940.00	-
08/01/2021	-	-	34,170.00	34,170.00	-
12/31/2021	-	-	-	-	109,110.00
02/01/2022	40,000.00	4.000%	34,170.00	74,170.00	-
08/01/2022	-	-	33,370.00	33,370.00	-
12/31/2022	-	-	-	-	187,540.00
02/01/2023	40,000.00	4.050%	33,370.00	73,370.00	-
08/01/2023	-	-	32,560.00	32,560.00	-
12/31/2023	-	-	-	-	185,938.00
02/01/2024	40,000.00	4.050%	32,560.00	72,560.00	-
08/01/2024	-	-	31,750.00	31,750.00	-
12/31/2024	-	-	-	-	104,310.00
02/01/2025	45,000.00	4.050%	31,750.00	76,750.00	-
08/01/2025	-	-	30,838.75	30,838.75	-
12/31/2025	-	-	-	-	107,588.75
02/01/2026	45,000.00	4.050%	30,838.75	75,838.75	-
08/01/2026	-	-	29,927.50	29,927.50	-
12/31/2026	-	-	-	-	105,766.25
02/01/2027	50,000.00	4.100%	29,927.50	79,927.50	-
08/01/2027	-	-	28,902.50	28,902.50	-
12/31/2027	-	-	-	-	108,830.00
02/01/2028	50,000.00	4.100%	28,902.50	78,902.50	-
08/01/2028	-	-	27,877.50	27,877.50	-
12/31/2028	-	-	-	-	186,780.00
02/01/2029	50,000.00	4.150%	27,877.50	77,877.50	-
08/01/2029	-	-	26,840.00	26,840.00	-
12/31/2029	-	-	-	-	104,717.50
02/01/2030	55,000.00	4.200%	26,840.00	81,840.00	-
08/01/2030	-	-	25,685.00	25,685.00	-
12/31/2030	-	-	-	-	107,525.00
02/01/2031	55,000.00	4.350%	25,685.00	88,685.00	-
08/01/2031	-	-	24,488.75	24,488.75	-
12/31/2031	-	-	-	-	185,173.75
02/01/2032	60,000.00	4.350%	24,488.75	84,488.75	-
08/01/2032	-	-	23,183.75	23,183.75	-
12/31/2032	-	-	-	-	187,672.50
02/01/2033	60,000.00	4.450%	23,183.75	83,183.75	-
08/01/2033	-	-	21,848.75	21,848.75	-
12/31/2033	-	-	-	-	105,032.50
02/01/2034	65,000.00	4.450%	21,848.75	86,848.75	-
08/01/2034	-	-	20,402.50	20,402.50	-
12/31/2034	-	-	-	-	107,251.25
02/01/2035	65,000.00	4.550%	20,402.50	85,402.50	-
08/01/2035	-	-	18,923.75	18,923.75	-
12/31/2035	-	-	-	-	104,926.25
02/01/2036	70,000.00	4.650%	18,923.75	88,923.75	-
08/01/2036	-	-	17,296.25	17,296.25	-
12/31/2036	-	-	-	-	186,220.00
02/01/2037	75,000.00	4.650%	17,296.25	92,296.25	-
08/01/2037	-	-	15,552.58	15,552.58	-
12/31/2037	-	-	-	-	187,848.75
02/01/2038	88,000.00	4.750%	15,552.58	95,552.58	-
08/01/2038	-	-	13,652.50	13,652.50	-
12/31/2038	-	-	-	-	109,205.00
02/01/2039	80,000.00	4.850%	13,652.58	93,652.58	-
08/01/2039	-	-	11,712.50	11,712.50	-
12/31/2039	-	-	-	-	105,365.00
02/01/2040	85,000.00	4.900%	11,712.50	96,712.50	-
08/01/2040	-	-	9,638.00	9,638.00	-
12/31/2040	-	-	-	-	106,342.50
02/01/2041	90,000.00	4.900%	9,638.00	99,638.00	-
08/01/2041	-	-	7,425.00	7,425.00	-
12/31/2041	-	-	-	-	187,855.00
02/01/2042	95,000.00	4.950%	7,425.00	102,425.00	-
08/01/2042	-	-	5,073.75	5,073.75	-
12/31/2042	-	-	-	-	187,498.75
02/01/2043	100,000.00	4.950%	5,073.75	105,073.75	-
08/01/2043	-	-	2,598.75	2,598.75	-
12/31/2043	-	-	-	-	187,672.50
02/01/2044	105,000.00	4.950%	2,598.75	107,598.75	-
12/31/2044	-	-	-	-	107,598.75
Total	\$1,745,000.00	-	\$1,485,582.67	\$3,230,582.67	-

Yield Statistics

Bond Year Dollars	532,227.33
Average Life	18.468 Years
Average Coupon	4.6096978%
Net Interest Cost (NIC)	4.7197787%
True Interest Cost (TIC)	4.7306676%
Bond Yield for Arbitrage Purposes	4.5788371%
All Inclusive Cost (AIC)	4.8887641%
IRS Form 8038	
Net Interest Cost	4.6769735%
Weighted Average Maturity	18.315 Years

Raymond James

Public Finance

Preliminary

\$1,745,000

Jessamine South Elkhorn Water District

Potential Loan through the Kentucky Rural Water Finance Corporation

Net Debt Service Schedule

Date	Principal	Coupon	Interest	Total P+I	Net New D/S
12/31/2014	-	-	27,465.17	27,465.17	27,465.17
12/31/2015	30,000.00	2.050%	74,597.50	104,597.50	104,597.50
12/31/2016	35,000.00	2.150%	73,913.75	108,913.75	108,913.75
12/31/2017	35,000.00	2.300%	73,135.00	108,135.00	108,135.00
12/31/2018	35,000.00	2.500%	72,295.00	107,295.00	107,295.00
12/31/2019	35,000.00	2.600%	71,402.50	106,402.50	106,402.50
12/31/2020	35,000.00	3.050%	70,413.75	105,413.75	105,413.75
12/31/2021	40,000.00	3.850%	69,110.00	109,110.00	109,110.00
12/31/2022	40,000.00	4.000%	67,540.00	107,540.00	107,540.00
12/31/2023	40,000.00	4.050%	65,930.00	105,930.00	105,930.00
12/31/2024	40,000.00	4.050%	64,310.00	104,310.00	104,310.00
12/31/2025	45,000.00	4.050%	62,588.75	107,588.75	107,588.75
12/31/2026	45,000.00	4.050%	60,766.25	105,766.25	105,766.25
12/31/2027	50,000.00	4.100%	58,830.00	108,830.00	108,830.00
12/31/2028	50,000.00	4.100%	56,780.00	106,780.00	106,780.00
12/31/2029	50,000.00	4.150%	54,717.50	104,717.50	104,717.50
12/31/2030	55,000.00	4.200%	52,525.00	107,525.00	107,525.00
12/31/2031	55,000.00	4.350%	50,173.75	105,173.75	105,173.75
12/31/2032	60,000.00	4.350%	47,672.50	107,672.50	107,672.50
12/31/2033	60,000.00	4.450%	45,032.50	105,032.50	105,032.50
12/31/2034	65,000.00	4.450%	42,251.25	107,251.25	107,251.25
12/31/2035	65,000.00	4.550%	39,326.25	104,326.25	104,326.25
12/31/2036	70,000.00	4.650%	36,220.00	106,220.00	106,220.00
12/31/2037	75,000.00	4.650%	32,848.75	107,848.75	107,848.75
12/31/2038	80,000.00	4.750%	29,205.00	109,205.00	109,205.00
12/31/2039	80,000.00	4.850%	25,365.00	105,365.00	105,365.00
12/31/2040	85,000.00	4.900%	21,342.50	106,342.50	106,342.50
12/31/2041	90,000.00	4.900%	17,055.00	107,055.00	107,055.00
12/31/2042	95,000.00	4.950%	12,498.75	107,498.75	107,498.75
12/31/2043	100,000.00	4.950%	7,672.50	107,672.50	107,672.50
12/31/2044	105,000.00	4.950%	2,598.75	107,598.75	107,598.75
Total	\$1,745,000.00	-	\$1,485,582.67	\$3,230,582.67	\$3,230,582.67

Raymond James

Public Finance

Preliminary

\$1,745,000

Jessamine South Elkhorn Water District

Potential Loan through the Kentucky Rural Water Finance Corporation

Pricing Summary

Maturity	Type of Bond	Coupon	Yield	Maturity Value	Price	Dollar Price
02/01/2015	Serial Coupon	2.050%	1.030%	30,000.00	100.877%	30,263.10
02/01/2016	Serial Coupon	2.150%	1.220%	35,000.00	101.710%	35,598.50
02/01/2017	Serial Coupon	2.300%	1.420%	35,000.00	102.462%	35,861.70
02/01/2018	Serial Coupon	2.500%	1.740%	35,000.00	102.829%	35,990.15
02/01/2019	Serial Coupon	2.600%	2.040%	35,000.00	102.580%	35,903.00
02/01/2020	Serial Coupon	3.050%	2.460%	35,000.00	103.203%	36,121.05
02/01/2021	Serial Coupon	3.850%	2.820%	40,000.00	106.386%	42,554.40
02/01/2022	Serial Coupon	4.000%	3.160%	40,000.00	105.807%	42,322.80
02/01/2023	Serial Coupon	4.050%	3.420%	40,000.00	104.780%	41,912.00
02/01/2024	Serial Coupon	4.050%	3.570%	40,000.00	103.958%	41,583.20
02/01/2025	Serial Coupon	4.050%	3.740%	45,000.00	102.743%	46,234.35
02/01/2026	Serial Coupon	4.050%	3.870%	45,000.00	101.696%	45,763.20
02/01/2027	Serial Coupon	4.100%	4.010%	50,000.00	100.893%	50,446.50
02/01/2028	Serial Coupon	4.100%	4.140%	50,000.00	99.577%	49,788.50
02/01/2029	Serial Coupon	4.150%	4.230%	50,000.00	99.119%	49,559.50
02/01/2030	Serial Coupon	4.200%	4.340%	55,000.00	98.402%	54,121.10
02/01/2031	Serial Coupon	4.350%	4.430%	55,000.00	99.051%	54,478.05
02/01/2032	Serial Coupon	4.350%	4.540%	60,000.00	97.686%	58,611.60
02/01/2033	Serial Coupon	4.450%	4.600%	60,000.00	98.116%	58,869.60
02/01/2034	Serial Coupon	4.450%	4.670%	65,000.00	97.166%	63,157.90
02/01/2035	Serial Coupon	4.550%	4.710%	65,000.00	97.883%	63,623.95
02/01/2036	Serial Coupon	4.650%	4.770%	70,000.00	98.376%	68,863.20
02/01/2037	Serial Coupon	4.650%	4.810%	75,000.00	97.790%	73,342.50
02/01/2038	Serial Coupon	4.750%	4.840%	80,000.00	98.728%	78,982.40
02/01/2039	Serial Coupon	4.850%	4.990%	80,000.00	98.012%	78,409.60
02/01/2040	Serial Coupon	4.900%	5.020%	85,000.00	98.266%	83,526.10
02/01/2041	Serial Coupon	4.900%	5.030%	90,000.00	98.089%	88,280.10
02/01/2042	Serial Coupon	4.950%	5.040%	95,000.00	98.654%	93,721.30
02/01/2043	Serial Coupon	4.950%	5.040%	100,000.00	98.632%	98,632.00
02/01/2044	Serial Coupon	4.950%	5.040%	105,000.00	98.612%	103,542.60
Total	-	-	-	\$1,745,000.00	-	\$1,740,063.95

Bid Information

Par Amount of Bonds	\$1,745,000.00
Reoffering Premium or (Discount)	(4,936.05)
Gross Production	\$1,740,063.95
Total Underwriter's Discount (1.750%)	\$(30,537.50)
Bid (97.967%)	1,709,526.45
Total Purchase Price	\$1,709,526.45
Bond Year Dollars	\$32,227.33
Average Life	18.468 Years
Average Coupon	4.6096978%
Net Interest Cost (NIC)	4.7197707%
True Interest Cost (TIC)	4.7300675%

Raymond James

Public Finance

**“Exhibit A” Addendum
Analysis of Prior PSC Orders
Availability and Sufficiency of KAW Storage**

In Case No. 2014-00470, the PSC found that JSEWD failed to adequately address the possibility of obtaining water storage capacity from KAW, stating “At a minimum, JSEWD should have demonstrated that such capacity was unavailable or insufficient to address the water district’s requirements.”¹ In compliance with this directive, JSEWD has investigated this alleged alternative source of storage capacity. In addition to the analysis contained in the Storage Capacity Analysis attached to Exhibit “A”, JSEWD submits this analysis of prior PSC Orders as they relate to whether KAW storage capacity is available or sufficient to meet JSEWD’s storage needs.

PSC Orders remain in effect unless revoked or modified by the PSC, or until vacated in whole or in part by a court of competent jurisdiction. KRS 278.390. KAW’s storage capacity for its Central Division has been the subject of a series of PSC cases and Orders dating back to 1988. The history of such cases and Orders is summarized by the PSC in its final Order in Case No. 2005-00546.² In its Order, the PSC repeatedly cited to and relied upon KAW’s Storage Capacity Analysis dated December 21, 2005, which was attached to KAW’s Application in that case. JSEWD requests that this Application and Study be incorporated by reference into this proceeding. As JSEWD is required to address the availability and sufficiency of KAW’s storage capacity, reference to this Study is required.

The Order establishes that even after extensive construction of new storage facilities for

¹ Order of April 30, 2013, Case No. 2012-00470 at page 11, fn. 41.

² Order of July 31, 2007 in Case No. 2005-00546.

its Main Service Zone, KAW does not have sufficient finished storage capacity to meet even the minimum requirement established by 807 KAR 5:066, Section 4(4). Indeed, KAW has received permission from the PSC to operate under a unique “50/50” plan. Under this plan, KAW maintains only 50% of the minimum storage requirement through actual installed storage capacity, “. . .with up to one-half provided by standby production and pumping facilities at the treatment plant (“the 50/50 plan”). Even as adjusted by the 50/50 plan, KAW still only maintains enough storage capacity to meet the bare minimum required for its own Main Service Zone. This Order does not provide for any additional storage capacity or excess storage capacity to be available for providing service to nearby utilities.

JSEWD is unaware of any proceeding under this line of KAW Main Service Area storage cases where KAW included any reservation of storage for JSEWD in finally approaching or meeting its Main Service Area minimum storage requirements. This is consistent with the longstanding agreement between KAW and JSEWD that JSEWD is responsible for meeting its own system storage requirements. KAW has no storage capacity available to be reserved for JSEWD or any purpose other than meeting the storage needs of its Main Service Zone. The one exception is that KAW must also supplement storage to its High Service Zone from its Main Service Zone storage, since the High Service Zone was determined to be significantly deficient in its own minimum storage capacity requirements.³ As KAW is already required to supplement its own High Service Zone, it has even less capacity for taking on additional storage capacity sales outside of its own system.

These findings are from a final Order that remains in effect. JSEWD is unaware of any

³ Order of July 31, 2007, Case No. 2005-00546 at page 6.

PSC finding that KAW has sufficient storage capacity to serve other systems, or that any of the approved capacity is available to serve storage needs for other systems. Further, JSEWD is unaware of any PSC finding that KAW has excess storage capacity of any amount, let alone sufficient excess capacity to supply JSEWD's needs. The PSC Orders demonstrate that KAW barely meets its own minimum storage requirements, and cannot provide available and sufficient storage capacity to JSEWD. JSEWD is entitled to rely on these PSC Orders with respect to system storage capacity, which did not consider or approve any excess capacity reservation to be available for sale to other utilities.

As part of its review of alternatives, JSEWD has investigated whether KAW storage capacity is available to JSEWD and sufficient to meet JSEWD's needs. The answer in both cases is no.

There is no rational, logical or reasonable basis for JSEWD and KAW to modify their current contract⁴, which rightly requires that JSEWD furnish its own storage capacity. As further shown as part of JSEWD's Storage Capacity Study, there is no engineering or system operation advantage to be realized by JSEWD relying on KAW for storage, and in fact JSEWD maintaining its own storage capacity is the superior alternative

⁴ The supply contract is on file with the Commission and of record in Case No. 2012-00470. A copy is attached hereto for ease of reference.

AGREEMENT

THIS AGREEMENT, made and entered into this 25TH day of FEBRUARY, 1986, by and between KENTUCKY-AMERICAN WATER COMPANY, a Kentucky corporation having its office at 2300 Richmond Road, Lexington, Kentucky (hereinafter sometimes called "COMPANY"), Party of the First Part, and LEXINGTON-SOUTH ELKHORN WATER DISTRICT, a Water District duly organized and existing under and by virtue of the laws of Kentucky, having an office at 200 W. Maple Street, Nicholasville, Kentucky 40356 (hereinafter sometimes called "DISTRICT"), Party of the Second Part;

W I T N E S S E T H:

THAT, WHEREAS, the District has been formed for the purpose of supplying water for the inhabitants of District, and wishes to purchase, upon the terms and conditions hereinafter set forth, water in the quantities hereinafter mentioned from the Company for resale by District to its customers, and

WHEREAS, the Company is willing to sell water, in the quantities and upon the terms and conditions hereinafter stated, to District for resale by District to inhabitants of said District, and

WHEREAS, the parties entered into an Agreement on the 15th day of April, 1970, for the purchase and sale of water, and

WHEREAS, Company and District have mutually agreed to increase the amount of water to be supplied by the Company to the District,

NOW, THEREFORE, in consideration of the mutual covenants of the parties hereto as hereinafter contained, it is hereby agreed by and between the parties hereto as follows, to-wit:

1. Company agrees to sell to District, and District agrees to purchase from Company at the rates hereinafter mentioned, such quantities of water as the District may hereafter from time to time require, not to exceed an average of Eight Hundred (800) gallons per minute, said water to be furnished at two connections to the water mains of the Company at:

(1) A point on the Harrodsburg Road Five Hundred (500) feet North of the Fayette-Jessamine County line. The amount to be supplied at this connection shall not exceed an average of Six Hundred (600) gallons per minute, and

(2) At a point on the Keene Road Five Hundred (500) feet North of the Fayette-Jessamine County line, in Fayette County, Kentucky. The amount to be supplied at this connection shall not exceed an average of Two Hundred (200) gallons per minute.

2. It is understood and agreed by the parties hereto that all of the limitations on consumption by District as set forth in paragraph 1 are of the essence, as well as the limitations contained in this paragraph. The per minute average limitations mentioned in paragraph 1 shall be computed using the entire consumption at each meter for a regular billing period of Kentucky-American Water Company for these types of connections, one month, and dividing by the number of minutes in the billing

period. In addition, the consumption at the meter near Harrodsburg Road, paragraph 1(1), shall never exceed 900 gallons for any one minute and the consumption at the meter near Keene Road, paragraph 1(2), shall never exceed 300 gallons for any one minute. In the event either or both of the consumption limitations contained herein are exceeded, then and in that event, Company shall have the right, in addition to such remedies as may be otherwise provided, to place such consumption restrictive devices in its system as will regulate District's demands within the limitations contained herein, both as to averages and per minute consumption.

3. It is understood by the parties hereto that District has constructed and is maintaining within said District a system of water works for the purpose of supplying inhabitants of the District with water for domestic, farm, public and manufacturing purposes and that District shall have its water distribution system connected with existing water mains of the Company at the delivery points referred to in Paragraph 1 above, each such connection to be a single meter connection. All such master meters, including vaults, shall be furnished, installed, operated, and maintained by the Company.

4. It is further understood and agreed by the parties hereto that Company shall not be required to provide uniform flows or maintain pressures to District and that District shall provide such elevated tanks or standpipes as may be necessary to provide adequate service to its customers; however, Company

shall endeavor to maintain ^{30 (Rd)} 25 pounds per square inch of pressure at District's service connections under normal conditions.

5. It is understood and agreed that Company does not by this agreement undertake or contract that the service rendered through these connections shall include fire protection or sufficient quantities of water for fire extinguishment; and that District is fully aware that if it or its customers desire fire protection or sufficient quantities of water for fire extinguishment, that District must provide the same by the erection of elevated tanks, standpipes or ground storage with booster pumps for such service.

6. The obligation of Company to supply water hereunder is further limited by the understanding that Company shall undertake to use reasonable care and diligence in order to prevent and avoid interruptions and fluctuations in the supply of water, but that it cannot and does not guarantee or warrant that such interruptions and fluctuations will not occur, or that because of emergencies due to breaks, leaks, defects, construction or necessary repairs in its facilities, or caused by fires, strikes, acts of God, or other causes, there may not be periods during which the supply may be curtailed or interrupted. In event of such interruptions or fluctuations, no liability of any nature shall be imposed upon Company. Notwithstanding the foregoing, however, Company will not, in event of water shortages, discriminate against District and its customers by unreasonably curtailing service to District.

7. District agrees to pay to Company for water furnished under the terms of this agreement in accordance with the rates established by Company from time to time and approved by the Public Service Commission of Kentucky. All statements rendered by Company to District for water furnished under this agreement shall be paid at the offices of the Company within ten (10) days from date rendered. This agreement is specifically made subject to the Rules and Regulations of the Company as approved by the Public Service Commission of Kentucky, as the same now exist or may hereafter be amended. Company shall not increase its rates to District without obtaining approval of the Public Service Commission of Kentucky or instituting appropriate proceedings seeking approval of any revision in its rate schedule.

8. If at any time hereafter any statement for water furnished hereunder is not paid within ten (10) days from date rendered, Company shall have the right to discontinue service hereunder.

9. Unless terminated sooner as hereinabove set forth this contract shall be for a period of forty (40) years, with an option in District to renew the same thereafter for an additional term of thirty (30) years.

10. During the term of this Agreement, Company shall have the right of first refusal to purchase all of the assets of the District should District determine that it is for sale. Company shall be notified in writing of any bona fide offer that District may have and Company shall have ninety (90) days thereafter to meet any such offer.

11. In the event all or any part of the waterworks plant and facilities of the Company which are used in the furnishing of water hereunder are hereafter acquired by a municipal corporation or other governmental entity, then the Company shall be relieved of its obligations hereunder, and, in such event, this agreement shall be binding upon the municipality or governmental entity making such acquisition. This contract may be assigned by District to the United States of America, acting through the Farmers Home Administration, U.S. Department of Agriculture, or to the bondholders of said District, or to a receiver for their benefit in event of default of any payment of bond interest or principal, but any such assignment shall be subject to the terms and conditions herein stated.

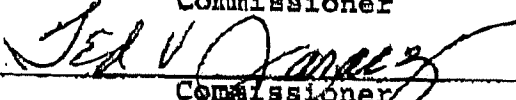
IN WITNESS WHEREOF, the parties hereto have caused their corporate signatures to be affixed hereto by their duly authorized officers, all the day and year first above written.


KENTUCKY-AMERICAN WATER COMPANY

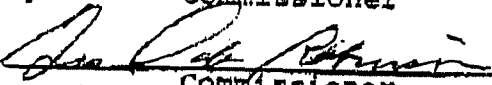
BY: 
Vice President

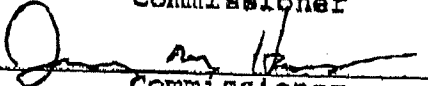
LEXINGTON-SOUTH ELKHORN WATER DISTRICT

BY: 
Commissioner

BY: 
Commissioner

BY: 
Commissioner

BY: 
Commissioner

BY: 
Commissioner

FUNDING/CONSTRUCTION BUDGET

CATNIP HILL PIKE 1.0 MG
ELEVATED STORAGE TANK, PROJECT # 3569
Jessamine County, Kentucky

Jessamine-South Elkhorn Water District
802 S. Main Street
Nicholasville, KY 40356

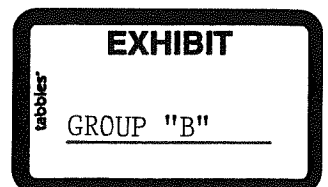
CONSTRUCTION

<u>Project Cost Classification</u>	<u>Amount</u>
Administrative	\$10,000
Legal	\$5,000
⁽¹⁾ Land, Appraisals, Easements	\$0
Relocation Expense	\$0
Planning	\$30,000
Design Fee	\$131,600
Construction Engineering	\$25,000
Inspection Fee	\$80,910
Engineering Fees - Other	* \$70,000
Construction	\$1,624,700
Equipment	\$0
Miscellaneous - Other	\$50,000
Contingencies	\$164,790
TOTAL PROJECT COST	\$2,192,000

⁽¹⁾ The tank site consisting of one (1) acre and access easement was purchased in 2004.

FUNDING

HB 608 Non Coal Grant (Grant ID# 229N-2008)	\$1,000,000
KRW - Bond Issue	\$1,192,000
TOTAL FUNDING	\$2,192,000



From: Rusty Spangler [<mailto:rspangler@caldwelltanks.com>]
Sent: Friday, February 14, 2014 3:10 PM
To: john@horneeng.com
Subject: Jessamine-South Elkhorn Water District, KY

Good afternoon Mr. Horne. I appreciate the call today and the opportunity to talk with you about the Jessamine-South Elkhorn Water District elevated tank.

I am happy to provide updated budget pricing on the proposed elevated tank that original bid in July of 2012. Our budget pricing is assuming the same scope of work as originally detailed in the project plans and specifications. As requested, we have also provided budget pricing on alternate tank capacities. The pricing below is based on a Multi-Column style elevated tank with a high water elevation of 148' as measured from top of tank foundation. If alternate tank styles are considered, please advise and we will be happy to provide.

1,000,000 Gallon 70.0' diameter x 38.75' operating head range = \$1,675,000
750,000 Gallon 60.0' diameter x 38.75' operating head range = \$1,350,000
500,000 Gallon 50.0' diameter x 37.00' operating head range = \$1,025,000
400,000 Gallon 50.0' diameter x 30.00' operating head range = \$ 925,000

As I mentioned in our phone conversation, I will be happy to meet with you and the water district if I can be of any help.

Again, thank you for the call. It was a pleasure to talk with you again.

Rusty

C. R. Spangler
Sales Manager - Water Division



Caldwell Tanks, Inc.
4000 Tower Road
Louisville, KY 40219
(502) 964-3361
(502) 810-0963 {Fax to my inbox}
(502) 966-8732 {FAX to Louisville, KY Office}
rspangler@CaldwellTanks.com

www.caldwellwatertanks.com
www.caldwell1887.com



Kentucky Rural Water Finance Corporation

Helping utilities finance infrastructure improvements

February 14, 2014

Mr. Bruce Smith
Jessamine South Elkhorn Water District
802 South Main Street
Nicholasville, KY 40356

RE: Funding through the Kentucky Rural Water Finance Corporation

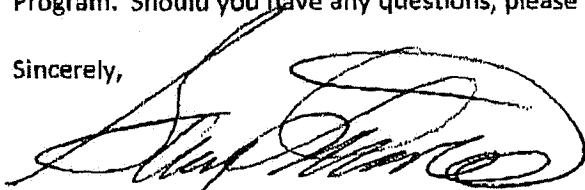
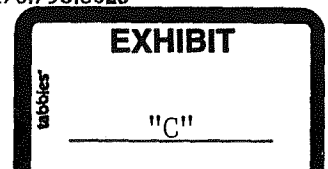
Dear Mr. Smith:

It is my understanding that the Water District would like to pursue financing for an upcoming project and would like to consider borrowing funds through the Kentucky Rural Water Finance Corporation's Flexible Term Finance Corporation.

Please accept this document as a letter of intent to provide financing to the Jessamine South Elkhorn Water District. This commitment is contingent upon receipt and execution of all final loan documents, as well as the Water District's ability to meet debt service coverage of 1.20x using Maximum Annual Debt Service including the new debt. Once a bond sale occurs to lock in the rate, the executed loan documents (prepared by bond counsel, Rubin & Hays) are returned to the Kentucky and all regulatory conditions met, funding for your project will be available.

Thank you for your interest in the Kentucky Rural Water Finance Corporation's Flexible Term Finance Program. Should you have any questions, please feel free to contact Kristen Millard at 859-232-8249.

Sincerely,


Gary Larimore
Secretary/Treasurer

COST OF OPERATION

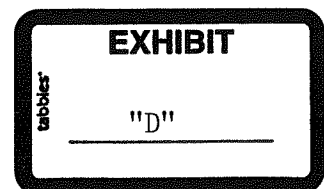
CATNIP HILL PIKE 1.0 MG
ELEVATED STORAGE TANK, PROJECT # 3569
Jessamine County, Kentucky

Jessamine-South Elkhorn Water District
802 S. Main Street
Nicholasville, KY 40356

<u>DESCRIPTION</u>	<u>COST</u>
Mowing & Grounds Maintenance	\$300.00
Electrical	\$400.00
	<hr/>
Total Annual Cost	\$700.00

Note:

- a. Tank will be filled via existing booster pumps, which were sized to accommodate this proposed storage tank.
- b. Mowing and electrical costs are based on actual cost for similar tank currently in operation.
- c. Pumping cost will not increase since demand stays unchanged.
- d. All other operation costs remain unchanged.



Preliminary

\$1,240,000

Jessamine South Elkhorn Water District

Potential Loan through the Kentucky Rural Water Finance Corporation

Sources & Uses

Dated 12/15/2012 | Delivered 12/15/2012

Sources Of Funds

Par Amount of Bonds	\$1,240,000.00
Reoffering Premium	1,729.75
Total Sources	\$1,241,729.75

Uses Of Funds

Total Underwriter's Discount (1.750%)	21,700.00
Costs of Issuance	23,600.00
Deposit to Project Construction Fund	1,192,000.00
Rounding Amount	4,429.75
Total Uses	\$1,241,729.75

9/27/2012 | 5:20 PM

Public Finance

Raymond James I Morgan Keegan

EXHIBIT

tabbles

"E"

Preliminary
\$1,240,000

Jessamine South Elkhorn Water District
Potential Loan through the Kentucky Rural Water Finance Corporation

Debt Service Schedule

Date	Principal	Coupon	Interest	Total P+I	Fiscal Total
12/15/2012	-	-	-	-	-
06/01/2013	-	-	29,912.04	29,912.04	-
12/31/2013	-	-	-	-	29,912.04
02/01/2014	25,000.00	3.500%	21,023.75	46,023.75	-
08/01/2014	-	-	33,386.25	33,386.25	-
12/31/2014	-	-	-	-	72,210.00
02/01/2015	35,000.00	3.500%	23,386.25	58,386.25	-
08/01/2015	-	-	22,773.75	22,773.75	-
12/31/2015	-	-	-	-	81,160.00
02/01/2016	35,000.00	3.800%	22,713.75	57,713.75	-
08/01/2016	-	-	22,108.75	22,108.75	-
12/31/2016	-	-	-	-	79,882.58
03/01/2017	35,000.00	3.300%	32,108.75	57,188.75	-
08/01/2017	-	-	21,531.25	21,531.25	-
12/31/2017	-	-	-	-	78,640.00
07/01/2018	35,000.00	3.250%	21,531.25	56,531.25	-
08/01/2018	-	-	20,962.50	20,962.50	-
12/31/2018	-	-	-	-	77,493.75
07/01/2019	40,000.00	3.350%	28,562.50	68,562.50	-
08/01/2019	-	-	20,257.50	20,257.50	-
12/31/2019	-	-	-	-	81,255.00
02/01/2020	40,000.00	3.500%	30,292.50	60,292.50	-
08/01/2020	-	-	19,622.50	19,622.50	-
12/31/2020	-	-	-	-	79,815.00
07/01/2021	40,000.00	3.350%	19,622.50	59,622.50	-
08/01/2021	-	-	18,952.50	18,952.50	-
12/31/2021	-	-	-	-	76,575.00
07/01/2022	40,000.00	3.350%	28,352.50	58,952.50	-
08/01/2022	-	-	18,282.50	18,282.50	-
12/31/2022	-	-	-	-	77,233.00
02/01/2023	45,000.00	3.400%	18,282.50	63,282.50	-
08/01/2023	-	-	17,512.50	17,512.50	-
12/31/2023	-	-	-	-	88,800.00
07/01/2024	45,000.00	3.500%	17,512.50	62,512.50	-
08/01/2024	-	-	16,730.00	16,730.00	-
12/31/2024	-	-	-	-	79,247.50
07/01/2025	45,000.00	3.600%	16,730.00	61,730.00	-
08/01/2025	-	-	15,950.00	15,950.00	-
12/31/2025	-	-	-	-	77,850.00
07/01/2026	45,000.00	3.800%	35,970.00	60,970.00	-
08/01/2026	-	-	25,085.00	25,085.00	-
12/31/2026	-	-	-	-	75,385.00
07/01/2027	50,000.00	3.800%	18,085.00	68,085.00	-
08/01/2027	-	-	14,115.00	14,115.00	-
12/31/2027	-	-	-	-	79,180.00
02/01/2028	50,000.00	3.900%	14,115.00	64,115.00	-
08/01/2028	-	-	13,140.00	13,140.00	-
12/31/2028	-	-	-	-	77,255.00
07/01/2029	55,000.00	3.900%	13,140.00	68,140.00	-
08/01/2029	-	-	12,887.50	12,887.50	-
12/31/2029	-	-	-	-	80,207.50
07/01/2030	55,000.00	3.900%	12,067.50	67,067.50	-
08/01/2030	-	-	30,995.00	18,295.00	-
12/31/2030	-	-	-	-	79,852.50
07/01/2031	55,000.00	4.000%	10,995.00	65,995.00	-
08/01/2031	-	-	9,895.00	9,895.00	-
12/31/2031	-	-	-	-	75,890.00
07/01/2032	60,000.00	4.000%	9,895.00	69,895.00	-
08/01/2032	-	-	8,695.00	8,695.00	-
12/31/2032	-	-	-	-	78,590.00
02/01/2033	60,000.00	4.150%	8,695.00	68,695.00	-
08/01/2033	-	-	7,450.00	7,450.00	-
12/31/2033	-	-	-	-	76,145.00
07/01/2034	65,000.00	4.150%	7,450.00	72,450.00	-
08/01/2034	-	-	6,101.25	6,101.25	-
12/31/2034	-	-	-	-	78,551.25
07/01/2035	65,000.00	4.150%	6,101.25	71,101.25	-
08/01/2035	-	-	4,752.50	4,752.50	-
12/31/2035	-	-	-	-	75,853.75
07/01/2036	70,000.00	4.150%	4,752.50	74,752.50	-
08/01/2036	-	-	3,300.00	3,300.00	-
12/31/2036	-	-	-	-	78,053.75
02/01/2037	75,000.00	4.400%	3,300.00	78,300.00	-
08/01/2037	-	-	1,850.00	1,850.00	-
12/31/2037	-	-	-	-	79,950.00
07/01/2038	75,000.00	4.400%	1,650.00	76,650.00	-
12/31/2038	-	-	-	-	76,650.00
Total	\$1,240,000.00	-	\$744,348.29	\$1,884,348.29	-

Yield Statistics

Bond Year On/Years	518.01844
Average Life	15.015 Years
Average Coupon	3.9979081%
Net Interest Cost (NIC)	4.1851686%
True Interest Cost (TIC)	4.1175771%
Bond Yield for Arbitrage Purposes	3.9530000%
All Inclusive Cost (AIC)	4.3051245%
JRS Form 8038	
Net Interest Cost	4.0215695%
Weighted Average Maturity	24.871 Years
12/31/2012 1:30 PM	

Raymond James | Morgan Keegan

MORTGAGE, ASSIGNMENT OF RENTS AND LEASES AND SECURITY AGREEMENT

This Mortgage, Assignment of Rents and Leases and Security Agreement (the "Mortgage") is made by **Jessamine-South Elkhorn Water District**, a Kentucky rural water district, ("Mortgagor"), with an address of P.O. Box 731, Nicholasville, Kentucky 40356, for the benefit of **The Farmers Bank, Nicholasville, Kentucky**, a Kentucky banking corporation, ("Mortgagee"), with an address of 200 North Main Street, Nicholasville, Jessamine County, Kentucky 40356 as follows:

1. GRANT.

1.1 Property. Mortgagor hereby grants, bargains, mortgages, warrants, sells, encumbers, conveys, assigns and transfers to Mortgagee, its successors and assigns forever, all estate, title and interest of Mortgagor in and to the following, now existing or hereafter arising (collectively, the "Property"):

1.1.1 the real estate described in Exhibit A attached hereto ("Real Estate") and by reference made a part hereof, all of the estate, title and interest of Mortgagor in law or equity, of, in and to such Real Estate and all of the privileges, easements and appurtenances belonging to such Real Estate, and all heretofore or hereafter vacated streets or alleys which abut such Real Estate;

1.1.2 all buildings and improvements of every kind and description now existing or hereafter placed on such Real Estate and all fixtures, machinery, appliances, equipment, furniture and personal property of every kind whatsoever owned by Mortgagor and located in or on, or attached to, and used or intended to be used in connection with the operation of such Real Estate, or the buildings, structures or other improvements thereon or in connection with any construction being conducted or which may be conducted thereon, including but not limited to the electric, water, laundry, incinerating and power equipment; engines; pipes; pumps; tanks; motors; conduits; switchboards; plumbing, lifting, cleaning, fire prevention, fire extinguishing, refrigerating, ventilating and communications apparatus; boilers, ranges, furnaces, oil burners or units thereof; radiators; heaters; air-cooling and air conditioning apparatus; elevators; escalators; awnings, doors, and windows; attached cabinets; partitions; ducts and compressors; rugs and carpets; draperies; and all other furniture and furnishings; together with all building materials and equipment owned by Mortgagor now or hereafter delivered to the Real Estate and intending to be installed therein;

1.1.3 all rents, leases, issues and profits arising out of any of the foregoing, including all insurance policies and payments made under insurance policies relating directly or indirectly to any of the items comprising the Property;

1.1.4 all contracts for or related to the design, development, construction, management, maintenance or operation, leasing, sale or refinancing of such Real Estate, all licenses and permits relating to construction of any such contracts, any bonds or warranties assuring payment or performance thereunder, and all plans, designs,

specifications, books, records and escrow accounts related thereto;

1.1.5 all damages, claims, losses, judgments, awards and settlements previously or hereafter made or occurring relating to, directly or indirectly, the Real Estate or any of the other items comprising the Property, including but not limited to those resulting from: (i) condemnation proceedings; (ii) the taking under the power of eminent domain; (iii) any award for change of grade or streets; and (iv) claims in contract or tort, including but not limited to those relating to items described in Section 1.1.4, above;

1.1.6 all moneys, credits and other property of any nature whatsoever of Mortgagor now or hereafter in the possession of, in transit to or from, under the custody or control of, or on deposit with (whether held by Mortgagor individually or jointly with another) Mortgagee or any affiliate of Mortgagee, including but not limited to cash collateral accounts, construction disbursement accounts and reserve accounts;

1.1.7 all of the following relating, directly or indirectly, to the Real Estate or any of the other items comprising the Property: Mortgagor's accounts, inventory, equipment and general intangibles as such terms are defined under the applicable version of the Uniform Commercial Code; and

1.1.8 all extensions, additions, improvements, betterments, renewals, substitutions and replacements to any of the foregoing, and the proceeds of all of the foregoing.

1.2 Security. The grant described in Section 1.1, above, to have and to hold the Property is given to Mortgagee and its successors and assigns forever, for the uses and purposes herein set forth to secure the payment of the Indebtedness as defined in Section 2, below, and the performance of all of the obligations of Mortgagor hereunder.

2. INDEBTEDNESS. This conveyance is made to secure: (i) the payment of the promissory note of Mortgagor of even date herewith payable to the order of Mortgagee in the original principal amount of \$450,000.00 (the "Note"), which Note has a maturity date of March 28, 2013, and all extensions, renewals, reamortizations, modifications, and amendments thereof and thereto; (ii) all additional indebtedness as set forth more fully in Section 8, if marked, hereof and all advances or expenses of any kind made by Mortgagee pursuant to the provisions of this Mortgage; and (iii) all advances or expenses of any kind made by Mortgagee pursuant to the provisions of any document executed in connection with the Note (the foregoing collectively referred to as the "Indebtedness"). All references to the Note will mean the Note, and any amendments, modifications or restatements thereof or thereto from time to time.

3. REPRESENTATIONS, WARRANTIES AND COVENANTS

Mortgagor covenants, represents, warrants and agrees with Mortgagee as follows:

- 3.1 Title.** Mortgagor is the lawful owner of the Property; title to the Property is vested in Mortgagor and is free, clear and unencumbered except for easements and restrictions of record, non-delinquent real estate taxes and assessments ("Permitted Exceptions"); there has been no prior assignment of any of Mortgagor's rights in the Property except for Permitted Exceptions; Mortgagor has good right and full power to convey and encumber the Property and to execute this Mortgage; Mortgagor will make such further assurances of title as Mortgagee may require; and Mortgagor will warrant and defend the Property against all claims and demands whatsoever, except for the Permitted Exceptions.
- 3.2 Indebtedness.** Mortgagor will promptly pay, or cause to be paid, the Indebtedness when due.
- 3.3 Impositions.** Mortgagor will pay, or cause to be paid, when due:
- 3.3.1** All of the following (hereinafter collectively called the "Impositions"): all real estate taxes, personal property taxes, assessments, water and sewer rates and charges, and all other governmental levies and charges, of every kind and nature whatsoever, general and special, ordinary and extraordinary, which are assessed, levied, confirmed, imposed or become a lien upon or against the Property or any portion thereof, and all taxes, assessments and charges upon the rents, issues, income or profits of the Property, or which become payable with respect thereto or with respect to the occupancy, use or possession of the Property, whether such taxes, assessments or charges are levied directly or indirectly. If Mortgagee is not establishing an escrow for Impositions, then within 20 days after demand therefor, Mortgagor will deliver to Mortgagee the original, or a photostatic copy, of the official receipt evidencing payment of Impositions or other proof of payment satisfactory to Mortgagee. Notwithstanding the provisions of this Section, any tax or special assessment that is a lien on the Property may be paid in installments provided that each installment is paid on or prior to the date when the same is due without the imposition of any penalty.
- 3.3.2** On the first day of each month after the occurrence of any one or more Events of Default (as that term is defined below), a deposit with Mortgagee equal to one-twelfth of the annual charges, as estimated by Mortgagee, for the Impositions and premiums for insurance required under Section 3.7, below. Such amount will be held by or on behalf of Mortgagee and will be applied to pay such Impositions and premiums when the same becomes due. Mortgagee will not be required to pay any interest or earnings on such sums. Mortgagor hereby pledges all such sums as additional collateral for the Indebtedness. If the amount held by Mortgagee is not sufficient to pay the Impositions and premiums when due, Mortgagor will, promptly upon request of Mortgagee, pay to Mortgagee any amount necessary to make up

such deficiency.

- 3.4 Compliance with Laws.** Mortgagor will promptly comply or cause compliance with all present and future laws, ordinances, rules, regulations and other requirements of all governmental authorities having or claiming jurisdiction of or with respect to the Property or any portion thereof or the use or occupancy thereof. Mortgagor will observe and comply with all conditions and requirements necessary to preserve and extend any and all rights, licenses, permits (including but not limited to zoning variances, special exceptions and non-conforming uses), privileges, franchises and concessions which are applicable to the Property. Mortgagor will take appropriate measures to prevent, and will not engage in or knowingly permit, any illegal activities at the Property that could endanger tenants or visitors, result in damage to the Property, result in forfeiture of the Property, or otherwise materially impair the lien created by this Mortgage or Mortgagee's interest in the Property. Mortgagor represents and warrants to Mortgagee that no portion of the Property has been or will be purchased with the proceeds of any illegal activity.
- 3.5 Condition of Property.** Mortgagor will keep and maintain, or cause to be kept and maintained, the Property (including all improvements thereon and the sidewalks, sewers, and curbs) in good order and condition, will make or cause to be made, as and when the same becomes necessary, all structural and nonstructural and all ordinary and extraordinary repairs and all maintenance necessary to that end, will make all repairs and maintenance to the Property in a good and workmanlike manner, and will not permit, commit or suffer any waste, impairment or deterioration of the Property.
- 3.6 Improvements.** Mortgagor will not remove or demolish, or suffer or permit others to remove or demolish, any improvements installed or placed on the Property (other than tenant improvements) or, subject to the provisions of Section 3.5, cause or permit such improvements to be materially changed or altered without the prior written consent of Mortgagee, as well as Mortgagee's prior written consent to the plans and specifications relating thereto. Mortgagor will not institute or cause to be instituted any proceedings that could change the permitted use of the Property from the use or uses permitted as of the date hereof.
- 3.7 Insurance.** Mortgagor will keep all improvements, if any, now on, or that hereafter may be put upon, the Property, including fixtures and all personal property owned by Mortgagor and used in the operation of the Property, insured at all times for the benefit of Mortgagee and Mortgagor, as their respective interests may appear, against loss or damage by fire, flood, and such other risks of damage, hazards, casualties and contingencies and in the manner and form and in the amounts as specified in writing by Mortgagee from time to time, subject to the following additional terms and conditions:
- 3.7.1** Such insurance will be issued by a company or companies and in amounts acceptable to, and in every respect satisfactory to, Mortgagee and will contain a

provision requiring that the coverage evidenced thereby will not be terminated or materially modified without 10 days' prior written notice to Mortgagee. If Mortgagor fails to carry any insurance required to be carried by Mortgagor under the terms of this Mortgage, Mortgagee, at its option, may procure and maintain such insurance and Mortgagor will promptly reimburse Mortgagee for any premiums paid by Mortgagee for such insurance. The originals or appropriate certificates of all policies of insurance required to be carried under this Mortgage, bearing notations evidencing the payment of premiums or accompanied by other evidence satisfactory to Mortgagee of such payment, will be delivered to Mortgagee concurrently with the execution and delivery hereof. Mortgagor will deliver to Mortgagee a new policy (or certificate, in the case of insurance for which only certificates have been previously furnished) bearing such notation or accompanied by such other evidence as replacement for any expiring policy at least 30 days before the date of such expiration.

3.7.2 All policies of insurance required by this Section will contain a standard mortgagee clause in favor of Mortgagee and a waiver of insurer's right of subrogation against funds paid under the standard mortgagee endorsement. In case of a loss payable under such insurance for damage to or destruction of the Property, the right to adjust all claims under such insurance policies (jointly with Mortgagor), and the application of the proceeds of any such claim, are assigned to Mortgagee. Mortgagor hereby assigns to Mortgagee all amounts recoverable under any such policy. Except as may be otherwise provided in tenant leases approved by Mortgagee, the amount collected by Mortgagee, at the option of Mortgagee, may be used in any one or more of the following ways: (i) applied to the payment of any sums then in default to Mortgagee hereunder; (ii) used to fulfill any of the covenants contained herein which Mortgagor has failed to fulfill, as Mortgagee may determine; (iii) unless the insurer denies liability to any insured, used to restore the Property to a condition satisfactory to Mortgagee; (iv) applied upon the Indebtedness, whether the Indebtedness is then matured or unmatured; or (v) released to Mortgagor. Mortgagee is hereby irrevocably appointed by Mortgagor as attorney-in-fact of Mortgagor to assign any policy in the event of the foreclosure of this Mortgage or other extinguishment of the Indebtedness, and Mortgagor will have no right to reimbursement for premiums unearned at the time of any such assignment.

3.7.3 In the event of either a partial or total loss, all proceeds and rights of action are hereby assigned to Mortgagee. At its option, in its own name, Mortgagee will be entitled to commence, appear in and prosecute any action or proceedings or to make any compromise or settlement in connection with any such loss. The payment to Mortgagee of such insurance proceeds will not cure or waive any Event of Default hereunder. Notwithstanding such total or partial loss, all payments of the Indebtedness will be made without reduction, modification or interruption and all applicable terms and conditions of this Mortgage will be applicable to Mortgagor

without modification or interruption.

- 3.8 Sale, Transfer or Encumbrance.** Mortgagor will not, voluntarily or involuntarily, further mortgage, sell or convey, grant a deed of trust, pledge, grant a security interest in, lease, execute a land contract or installment sales contract, or otherwise dispose of, further encumber or suffer the encumbrance of, whether by operation of law or otherwise, any or all of its interest in the Property without Mortgagee's prior written consent.
- 3.9 Mechanics Liens.** Mortgagor will keep and maintain the Property free from all liens of persons supplying labor and materials for the construction, modification, repair or maintenance of any building or improvements whether on the Property or not. If any such lien is filed against the Property, Mortgagor will discharge the same of record within 30 days after the lien is filed or, if not filed, within 30 days after Mortgagor has notice thereof, provided that, in connection with any such lien or claim that Mortgagor may in good faith desire to contest, Mortgagor may contest the same by appropriate legal proceedings, diligently prosecuted, upon the posting of a bond or other security satisfactory to Mortgagee.
- 3.10 Eminent Domain.** Mortgagor will give Mortgagee immediate written notice of the actual or threatened commencement of any proceedings under eminent domain affecting all or any part of the Property, and will deliver to Mortgagee copies of any and all documents relating to such proceedings. All awards heretofore or hereafter made by any public or quasi-public authority to the present and any subsequent owner of the Property by virtue of an exercise of the right of eminent domain by such authority, including any award for a taking of title, possession or right of access to a public way, or for any change of grade of streets affecting the Property, are hereby assigned to Mortgagee and Mortgagee, at its option, is hereby authorized, directed and empowered to collect and receive the proceeds of any such award from the authorities making the same and to give proper receipts and acquittances therefor. The proceeds may be used, at Mortgagee's election, in any one or more of the following ways: (i) applied to the payment of any sums then in default to Mortgagee hereunder; (ii) used to fulfill any of the covenants contained herein which Mortgagor has failed to fulfill, as Mortgagee may determine; (iii) used to replace or restore the Property to a condition satisfactory to Mortgagee; (iv) applied upon the Indebtedness, whether the Indebtedness is then matured or unmatured; or (v) released to Mortgagor. Mortgagee will have the right to intervene and participate (jointly with Mortgagor) in any proceedings for and in connection with any such taking. Upon request of Mortgagee, Mortgagor will make, execute, and deliver all assignments and other instruments sufficient for the purpose of assigning all such awards to Mortgagee free, clear and discharged of all encumbrances. Mortgagee will not be, in any event or circumstance, liable or responsible for failure to collect or exercise diligence in connection with any proceeds, judgments, decrees, or awards.
- 3.11 Unpaid Impositions.** In the event that any governmental agency claims that any tax or other governmental charge or Imposition is due, unpaid or payable by Mortgagor or

Mortgagee upon the Indebtedness (other than income tax, franchise tax or similar tax on the interest or premium receivable by Mortgagee thereunder) and including any recording tax, documentary stamps or other tax or imposition on the Note or this Mortgage, Mortgagor forthwith will pay such tax and, within a reasonable time thereafter, deliver to Mortgagee satisfactory proof of payment thereof or if Mortgagor is contesting the same in good faith, Mortgagor will establish with Mortgagee security in form, substance and amount reasonably acceptable to Mortgagee for the payment thereof.

3.12 Environmental Matters. Qualified, however, as to Section 3.12.3, below, by those matters, if any, set forth in the environmental site assessment of the Property in form and substance satisfactory to Lender and delivered to Lender in connection with the execution of this document:

3.12.1 Mortgagor and the activities or operations at the Property are in compliance in all material respects with all applicable federal, state and local, statutes, laws, regulations, ordinances, policies and orders relating to regulation of the environment, health or safety, or contamination or cleanup of the environment (collectively "Environmental Laws").

3.12.2 Mortgagor has obtained and will maintain all approvals, permits, licenses, certificates, or satisfactory clearances from all governmental authorities required under Environmental Laws with respect to the Property and any activities or operations at the Property.

3.12.3 To the best of Mortgagor's knowledge, after an investigation meeting the standard set forth at 42 U.S.C. Section 9601 (35)(B)(1986) and any similar standards for environmental investigations under state Environmental Laws ("Due Investigation"), there have not been and are not now any solid waste, hazardous waste, hazardous or toxic substances, pollutants, contaminants, or petroleum in, on, under or about the Property. The use which Mortgagor makes and intends to make of the Property will not result in the deposit or other release of any hazardous or toxic substances, solid waste, pollutants, contaminants or petroleum on, to or from the Property.

3.12.4 To the best of Mortgagor's knowledge, after Due Investigation, there have been no complaints, citations, claims, notices, information requests, orders or directives on environmental grounds or under Environmental Laws (collectively "Environmental Claims") made or delivered to, pending or served on, or anticipated by Mortgagor or its agents, or of which Mortgagor or its agents, are aware or should be aware (i) issued by any governmental department or agency having jurisdiction over the Property or the activities or operations at the Property, or (ii) issued or claimed by any third party relating to the Property or the activities or operations at the Property.

3.12.5 To the best of Mortgagor's knowledge, after Due Investigation, no asbestos-

containing materials are installed, used, or incorporated into the Property, and no asbestos-containing materials have been disposed of on the Property.

- 3.12.6** To the best of Mortgagor's knowledge, after Due Investigation, no polychlorinated biphenyls ("PCBs") are located at, on or in the Property in the form of electrical equipment or devices, including, but not limited to, transformers, capacitors, fluorescent light fixtures with ballasts, cooling oils or any other device or form.
- 3.12.7** To the best of Mortgagor's knowledge, after Due Investigation, there have not been and are not now any underground storage tanks located within or about the Property.
- 3.12.8** The Property does not contain any wetlands as that term is defined by relevant governmental agencies under Environmental Laws and, to the best of Mortgagor's knowledge, after Due Investigation, there has been no filling of wetlands on the Property in violation of Environmental Laws.
- 3.12.9** In the event that any hazardous or toxic substances, pollutants, contaminants, solid waste or hazardous waste, or petroleum are released (as that term is defined under Environmental Laws) at the Property, or are otherwise found to be in, on, under or about the Property in violation of Environmental Laws or in excess of cleanup levels established under Environmental Laws, Mortgagor immediately will notify Mortgagee in writing and will commence such action as may be required with respect to such items, including, but not limited to, removal and cleanup thereof, and deposit with Mortgagee cash collateral, letter of credit, bond or other assurance of performance in form, substance and amount reasonably acceptable to Mortgagee to cover the cost of such action. Upon request, Mortgagor will provide Mortgagee with updates on the status of Mortgagor's actions to resolve or otherwise address such items.
- 3.12.10** In the event Mortgagor receives notice of an Environmental Claim from any governmental agency or other third party alleging a violation of or liability under Environmental Laws with respect to the Property or Mortgagor's activities or operations at the Property, Mortgagor immediately will notify Mortgagee in writing and will commence such action as may be required with respect to such Environmental Claim. Upon request, Mortgagor will provide Mortgagee with updates on the status of Mortgagor's actions to resolve or otherwise address such Environmental Claim.
- 3.12.11** Mortgagee will not be deemed to assume any liability or obligation for loss, damage, fines, penalties, claims or duties to clean-up or dispose of wastes or materials on or relating to the Property merely by conducting any inspections of the Property or by obtaining title to the Property by foreclosure, deed in lieu of foreclosure or otherwise. Mortgagor, including its successors and assigns, agrees to remain fully

liable and will indemnify, defend and hold harmless Mortgagee, its directors, officers, employees, agents, contractors, subcontractors, licensees, invitees, successors and assigns, from and against any claims, demands, judgments, damages, actions, causes of action, injuries, administrative orders, liabilities, costs, expenses, clean-up costs, waste disposal costs, litigation costs, fines, penalties, damages and other related liabilities arising from (i) the failure of Mortgagor to perform any obligation herein required to be performed by Mortgagor, (ii) the removal or other remediation of hazardous or toxic substances, hazardous wastes, pollutants or contaminants, solid waste or petroleum at or from the Property, (iii) any act or omission, event or circumstance existing or occurring resulting from or in connection with the ownership, construction, occupancy, operation, use and/or maintenance of the Property, (iv) any and all claims or proceedings (whether brought by private party or governmental agency) for bodily injury, property damage, abatement or remediation, environmental damage or impairment and any other injury or damage resulting from or relating to any hazardous or toxic substances, hazardous waste, pollutants, contaminants, solid waste, or petroleum located upon or migrating into, from or through the Property (whether or not any or all of the foregoing was caused by the Mortgagor or its tenant or subtenant, or a prior owner of the Property or its tenant or subtenant, or any third party and whether or not the alleged liability is attributable to the handling, storage, generation, transportation or disposal of such material or the mere presence of such material on the Property), and (v) Mortgagor's breach of any representation or warranty contained in this Section. Without limitation, the foregoing indemnities will apply to Mortgagee with respect to claims, demands, losses, damages (including consequential damages), liabilities, causes of action, judgments, penalties, costs and expenses (including reasonable attorneys' fees and court costs) which in whole or in part are caused by or arise out of the negligence of Mortgagee. Such indemnity, however, will not apply to Mortgagee to the extent the subject of the indemnification is caused by or arises out of the gross negligence or willful misconduct of Mortgagor. All environmental representations, warranties, covenants, and indemnities will continue indefinitely and may not be cancelled or terminated except by a writing signed by Mortgagee specifically referring to this Section.

3.12.12

Notwithstanding anything contained to the contrary in the Note, or other documents evidencing or securing the Indebtedness, the provisions of this Section will survive the termination or expiration of the Indebtedness, the full repayment of the Indebtedness, or the acquiring of title by Mortgagee or its successors and assigns by foreclosure, deed in lieu of foreclosure or otherwise, and will be fully enforceable against Mortgagor and its successors and assigns. The provisions of this Section will constitute a separate undertaking by Mortgagor and will be an inducement to Mortgagee in extending the Loan evidencing the Indebtedness to Mortgagor. The provisions of this Section will not be subject to any anti-deficiency or similar laws.

3.13 Suits and Judgments. There are no judicial or administrative actions, suits or proceedings (including without limitation any judgments, garnishments or attachments) pending or to the best of Mortgagor's knowledge, threatened against, affecting or involving Mortgagor, any other person liable, directly or indirectly, for the Indebtedness; or the Property, or any other property owned by Mortgagor or any other person liable, directly or indirectly, for the Indebtedness.

4. ASSIGNMENT OF RENTS AND LEASES

4.1 Assignment. Mortgagor hereby transfers and assigns to Mortgagee as further security for the payment of the Indebtedness all of the following (collectively, the "Leases"): (i) all present and future leases granted by Mortgagor covering all or any portion of the Property, (ii) all agreements for use or occupancy of any portion of the Property, (iii) all present and future ground leases for use or occupancy of any portion of the Property, (iv) any and all guarantees of the performance of any lessee under any lease of all or any part of the Property, (v) any extensions, amendments, modifications, supplements or replacements to any lease of all or any part of the Property (or to any guarantee or other item assigned pursuant to this Section) and (vi) any and all further leases and subleases, lettings or agreements (including rights and respective tenants holding over and tenancies following attornment) of all or any part of the Property. The rights assigned hereunder include but are not limited to all of Mortgagor's rights (a) to materially modify the Leases; (b) to terminate or to accept the surrender thereof; (c) to waive or release the lessees from the observance or performance by the lessees of any material covenant or condition of the Leases; and (d) to give any consent to any assignment of the Leases or any sublease of any part of the Property.

4.2 Duties of Mortgagor. Mortgagor will observe and perform all covenants and conditions to be observed or performed by the lessor under the Leases and enforce the observance and performance of the Leases by the lessees. Mortgagor will not cancel, surrender, terminate, or materially alter, amend or modify any Leases, release any party liable thereunder or consent to the assignment of the interests of any lessees without the prior written consent of Mortgagee which consent will not be unreasonably withheld. Mortgagee will be deemed to have consented to any such items if Mortgagee fails to object thereto within five days of receipt of a written request for Mortgagee's consent. Mortgagor will not permit the prepayment of any rents under the Leases for more than 30 days in advance of their due date without the prior written consent of Mortgagee. The form of lease to be used for tenants in the Property will be submitted to Mortgagee.

4.3 Rights of Mortgagee. If Mortgagor fails to observe or perform any covenant or condition to be observed or performed by Mortgagor under any of the Leases, Mortgagee, without obligation to do so and without notice to or demand on Mortgagor or releasing Mortgagor from its obligation to do so, may perform such covenant or condition and, to the extent that Mortgagee incurs any costs or pays any monies in connection therewith, including any costs

or expenses of litigation, the costs and expenses will be due from Mortgagor on demand and will be included in the indebtedness secured hereby and will bear interest from the incurring or payment thereof at the Default Rate (as defined in the Note).

4.4 Indemnification. Mortgagee will not be obligated to perform or discharge any obligation or duty of Mortgagor under any of the Leases, and the acceptance of this Assignment does not constitute an assumption of any such obligation or duty. Mortgagee will not be deemed to have any responsibility for the control, care, management or repair of the Property or any responsibility or liability for any negligence in the management, operation, upkeep, repair or control of the Property resulting in loss, injury or death to any lessee, licensee, employee, stranger or other person. Mortgagor will indemnify and hold Mortgagee harmless against all liabilities, losses and damages that Mortgagee may incur under the Leases or under or by reason of this assignment except for Mortgagee's grossly negligent acts or liabilities or losses and damages arising out of Mortgagee's possession or control of the Property. This indemnification will survive the repayment of the Note and release or satisfaction of this Mortgage or the foreclosure hereof.

4.5 Rent. As long as no Event of Default exists, Mortgagor will have the right to collect all rents under any Lease, but not more than 30 days in advance of their due date. Upon the occurrence of an Event of Default, Mortgagee may take such actions with respect to the Leases and the rents, issues and profits (including the notification to lessees to make rent payments directly to Mortgagee) from the Property, as permitted by law or in equity, including but not limited to the remedies set forth in Section 6, below.

4.6 Contracts. Mortgagor will not enter into any contract for the management of the Property or appoint a rental agent for the Property without Mortgagee's prior review and written consent. Payment of any management fees or agent fees due under any such approved contract will be subordinated to the payment of the annual debt service under the Indebtedness.

5. UNIFORM COMMERCIAL CODE SECURITY AGREEMENT

5.1 Security Agreement. This Mortgage is intended to be a security agreement pursuant to the Uniform Commercial Code for any of the Property for which a security interest may be granted pursuant to the applicable version of the Uniform Commercial Code, including fixtures (hereinafter, the "UCC Collateral") and Mortgagor hereby grants Mortgagee a security interest in the UCC Collateral.

5.2 Filings. Mortgagor agrees that this Mortgage, or a reproduction thereof, may be filed in the real estate records or other appropriate index as a financing statement for any of the UCC Collateral. Any reproduction of this Mortgage or of any other security agreement or financing statement will be sufficient as a financing statement. Mortgagor hereby authorizes Mortgagee to file any financing statements, as well as extensions, renewals and

amendments thereof, and reproductions of this Mortgage in such form as Mortgagee may require to perfect a security interest with respect to said items. Mortgagor will pay all costs of filing such financing statements and any extensions, renewals, amendments and releases thereof, and will pay all reasonable costs and expenses of any record searches for financing statements Mortgagee may require.

- 5.3 Other Liens.** Without the prior written consent of Mortgagee, Mortgagor will not create or suffer to be created pursuant to the Uniform Commercial Code any other security interest in the UCC Collateral, including replacements and additions thereto, except for purchase money security interests in or leases of equipment. Mortgagor will keep its books, records, and documents concerning the Property at the Property or at the address set forth in Section 7.5, below. Mortgagee and its agents may examine and make extracts and copies from the books, records, and documents of Mortgagor which relate to the Property.
- 5.4 Contracts.** Mortgagor will observe and perform all covenants and conditions to be performed by Mortgagor under any contracts which are included within the Property, will enforce such contracts, will not materially modify such contracts, terminate such contracts or release parties thereto without the prior written consent of Mortgagee and will not assign or encumber its interest therein. The assignment and grant of a security interest in the Property does not constitute an assumption by Mortgagee of any obligation or duty thereunder.
- 5.5 Remedies.** Upon any Event of Default (as defined below) under this Mortgage, Mortgagee will have the remedies of a secured party under the Uniform Commercial Code and, at Mortgagee's option, may also invoke the remedies provided in this Mortgage, the Note and under applicable law. In exercising any of said remedies, Mortgagee may proceed against the items of real property and any items of personal property specified above as part of the Property separately or together and in any order whatsoever, without in any way affecting the availability of Mortgagee's remedies under the Uniform Commercial Code or of the remedies in this instrument. Taking possession of any of the Property and the performance of the obligations of Mortgagor thereunder will not operate to cure or waive any default or prohibit the taking of any other action by Mortgagee under any instrument or at law or in equity to enforce the payment of the Indebtedness or to realize upon any other security or guarantee therefor. Mortgagee may, so far as Mortgagor can give authority therefor, enter upon any premises on which the Property or the books and records relating to the Property are located and take possession of and remove the same therefrom. Mortgagor waives all claims for damages by reason of any seizure, repossession, retention, or sale of the Property under the terms hereof. Any requirement of reasonable notice, if necessary, will be met if such notice is mailed, postage prepaid, to the address of Mortgagor shown in Section 7.5, below, at least 10 days before the time of the sale or other disposition of the Property. The net proceeds arising from the disposition of the Property, after deducting Mortgagee's expenses, will be applied to the Indebtedness in the order determined by Mortgagee. If any excess remains after the discharge of all of the Indebtedness and the payment of all such

expenses, it will be paid to Mortgagor.

6. DEFAULT; REMEDIES

6.1 Events of Default; Rights after Mortgagor's Default. Upon the occurrence of any of the following (herein referred to as an "Event of Default"): (i) any Event of Default (as defined in any of the documents evidencing the Indebtedness), (ii) any default under any of such documents that do not have a defined set of "Events of Default", (iii) any representation or warranty made by Mortgagor to Mortgagee in this Mortgage is false or erroneous in any material respect, or (iv) the failure of Mortgagor to observe or perform any covenant or other agreement with Mortgagee under this Mortgage, Mortgagee may exercise any one or more of the rights and remedies granted pursuant to this Mortgage or given to a secured party under applicable law, as it may be amended from time to time. Mortgagor releases any and all claims against Mortgagee arising out of such management, operation and maintenance of the Property, whether such claims are made directly by Mortgagor, by anyone claiming under or through Mortgagor or by any other person or entity claiming an interest in the Property. Mortgagor will indemnify and hold harmless Mortgagee, its officers, directors, employees, attorneys and agents, from and against any and all liability, loss, damage or expense (including attorneys' fees, costs and expenses) which it may or might incur under or by reason of this Mortgage or actions taken pursuant thereto, or by reason or in defense of any and all claims and demands whatsoever which may be asserted against Mortgagee directly or indirectly related to the Property or arising out of the Leases. Should Mortgagee incur any such liability, loss, damage or expense, the amount thereof (including attorneys' fees) with interest thereon at the rate set forth in the Note, will be payable by Mortgagor immediately without demand, and will be secured hereby and by the Mortgage. Mortgagor will pay the reasonable attorneys' fees and expenses incurred by Mortgagee hereunder or in connection herewith, whether or not an Event of Default has occurred or been declared, to the extent such attorneys' fees and expenses are actually paid or agreed to be paid by Mortgagee. Mortgagee is authorized by Mortgagor to deduct such attorneys' fees and expenses from the Rents, as such term is defined below, collected hereunder by Mortgagee.

6.2 Waivers. The failure of Mortgagee to exercise either or both of its options to accelerate the maturity of the Indebtedness secured hereby and to foreclose the lien hereof following any Event of Default, or to exercise any other option granted to Mortgagee of partial payments of such Indebtedness, will neither constitute a waiver of any such default or of Mortgagee's options hereunder nor establish, extend or affect any grace period for payments due under the Note, but such options will remain continuously in force. Acceleration of maturity, once claimed hereunder by Mortgagee, may, at Mortgagee's option, be rescinded by written acknowledgement to that effect by Mortgagee and will not affect Mortgagee's right to accelerate maturity upon or after any future default.

6.3 Expenses. In any proceeding (i) to foreclose the lien of this Mortgage or enforce any other

remedy of Mortgagee under the Note, this Mortgage, or any other document securing the Indebtedness; (ii) in which Mortgagee is named as a party in connection with any of the Property; or (iii) affecting the Note, this Mortgage or any of the Property; or (iv) in preparation for the commencement or defense of any proceeding or threatened suit or proceeding in connection therewith, there will be allowed and included, as additional indebtedness in the judgment or decree resulting therefrom, any and all of the following expenses paid or incurred in connection with such proceeding by or on behalf of Mortgagee: reasonable attorneys' fees, appraisers' fees, outlays for documentary and expert evidence, stenographers' charges, publication costs, survey costs, and costs (which may be estimated as to items to be expended after entry of such judgment or decree) of procuring all abstracts of title, title searches and examinations, title insurance policies, Torrens certificates and any similar data and assurances with respect to title to the Property as Mortgagee may deem reasonably necessary either to prosecute or defend in such proceeding or to evidence to bidders at any sale pursuant to such decree the true condition of the title to or value of the premises or the Property. All expenses of the foregoing nature will be immediately due and payable by Mortgagor with interest thereon at the Default Rate.

6.4 Proceeds. The proceeds of any foreclosure sale of the Property, or any part thereof, will be distributed and applied in the following order of priority: (a) on account of all costs and expenses incident to the foreclosure proceedings, including all such items as are mentioned in Section 6.4 hereof; (b) all other items that, under the terms of this Mortgage, constitute secured indebtedness additional to that evidenced by the Note, with interest thereon at the highest rate permitted by law; (c) all principal and interest remaining unpaid under the Note, in the order of priority specified by Mortgagee in its sole discretion; and (d) the balance to Mortgagor or its successors or assigns, as its interests may appear.

6.5 Additional Remedies. If an Event of Default has occurred and is continuing, Mortgagee, at its option, in addition to the other remedies provided herein or in law or equity, may without regard to the adequacy of security for the Indebtedness hereby secured and with or without bringing any legal action or causing any receiver to be appointed by any court (i) enter upon, take possession of, and manage and operate the Property; (ii) perform any or all obligations of Mortgagor under the Leases, and exercise the rights of Mortgagor contained therein as fully as Mortgagor itself could; (iii) let or re-let the Property or any part thereof; (iv) enforce, modify, cancel or accept the surrender of any of the Leases; (v) bring or defend any suits in connection with the possession of the Property or any part thereof, in the name of either Mortgagor or Mortgagee; (vi) make such repairs as Mortgagee may deem appropriate; (vii) pay out of rents, income or profits any liens, taxes, assessments, insurance premiums, utility charges or costs of keeping the Property in good condition and repair; (viii) in the name of either Mortgagor or Mortgagee sue for or otherwise collect and receive all rents, issues and profits, including those past due and unpaid; and (ix) do all other things Mortgagee may deem necessary or proper to protect its security. Entry upon and taking possession of the Property and the collection of the rents and the application thereof will not operate to cure or waive any default under any instrument given by Mortgagor to Mortgagee

or prohibit the taking of any other action by Mortgagee under any such other instrument, or at law or in equity to enforce the payment of the Indebtedness or to realize on any other security or guarantee.

- 6.6 Application of Indebtedness towards Purchase Price.** Upon any foreclosure sale, pursuant to judicial proceedings, Mortgagee may bid for and purchase the Property, and upon compliance with the terms of the sale, may hold, retain, possess and dispose of such property as its own absolute right without further accountability. Any such purchase will permit Mortgagee to apply to the purchase price any portion of or all sums due to Mortgagee under the Indebtedness and this Mortgage in lieu of cash, to the amount which will, upon distribution of the net proceeds of such sale, be payable thereon.
- 6.7 Receivers.** Upon or at any time after the occurrence of an Event of Default, Mortgagee may request the appointment of a receiver of the Property. In the event Mortgagee elects to seek the appointment of a receiver for the Property upon the occurrence of an Event of Default hereunder, Mortgagor expressly consents to the appointment of such receiver, who will be entitled to a reasonable fee for so managing the Property. Such appointment may be made either before or after any foreclosure action or sale, without notice, and without regard to (i) the solvency or insolvency, at the time of application for such receiver, of the person or persons, if any, liable for the payment of the Indebtedness; (ii) the value of the Property at such time; and (iii) whether the same is then occupied as a homestead, and without bond being required of the applicant. Such receiver will have the power to take possession, control and care of the Property and to collect all rents, issues, deposits and profits thereof. Notwithstanding the appointment of any receiver, trustee, or other custodian, Mortgagee will be entitled to the possession and control of any cash, or other instruments at the time held by, or payable or deliverable under the terms of this Mortgage to Mortgagee.
- 6.8 Rights of Mortgagee.** If Mortgagor fails to pay any of the Impositions or to make any other payment required to be paid by Mortgagor under this Mortgage at the time and in the manner provided in this Mortgage, or if an Event of Default occurs, then without limiting the generality of any other provision of this Mortgage and without waiving or releasing Mortgagor from any of its obligations hereunder, Mortgagee will have the right, but will be under no obligation, to pay any of the Impositions or other payment, or any sums due under this Mortgage, and may perform any other act or take such action as may be appropriate to cause such other term, covenant, condition or obligation to be promptly performed or observed on behalf of Mortgagor, provided that, unless in Mortgagee's judgment the sending of a 10-day notice will impair the security of the lien of the Mortgage, Mortgagee will give Mortgagor 10 days' prior written notice prior to making any such payment. Mortgagee and any person designated by Mortgagee is hereby granted the right to enter upon the Property at any time and from time to time for the purpose of performing any such act or taking any such action, and all monies expended by Mortgagee in connection with making such payment or performing such act (including, but not limited to, legal expenses and disbursements), together with interest thereon at the Default Rate from the date of each

such expenditure, will be paid by Mortgagor to Mortgagee forthwith upon demand by Mortgagee and will be secured by this Mortgage.

7. MISCELLANEOUS

7.1 Rights Cumulative. The rights of Mortgagee arising under this Mortgage and the Note and other documents securing the Indebtedness or any part thereof will be separate, distinct and cumulative and none of them will be exclusive of the others. No act of Mortgagee and nothing contained herein will be construed as an election to proceed under any one provision herein or in such other documents to the exclusion of any other provision.

7.2 Waivers. A waiver in one or more instances of any of the terms, covenants, conditions or provisions hereof, or of the Note or any documents securing the Indebtedness or any part thereof, will apply to the particular instance or instances and at the particular time or times only, and no such waiver will be deemed a continuing waiver, but all of the terms, covenants, conditions and other provisions of this Mortgage and of such other documents will survive and continue to remain in full force and effect. No waiver will be asserted against Mortgagee unless in writing signed by Mortgagee.

7.3 Titles. The titles to the Sections hereof are for reference only and do not limit in any way the content thereof.

7.4 Amendments. No change, amendment, modification, cancellation or discharge hereof, or any part hereof, will be valid unless in writing and signed by the parties hereto or their respective successors and assigns.

7.5 Notices. All notices, demands, requests, consents or approvals and other communications required or permitted hereunder will be in writing, and, to the extent required by applicable law, will comply with the requirements of the Uniform Commercial Code then in effect, and will be addressed to such party at the address set forth below or to such other address as any party may give to the other in writing for such purpose:

To Mortgagee: Farmers Bank, Nicholasville, Kentucky
200 North Main Street
Nicholasville, Kentucky 40356
Attn: Jim Bailey, President

To Mortgagor: Jessamine-South Elkhorn Water District
P.O. Box 731
Nicholasville, Kentucky 40356
Attn: Chairman

All such communications, if personally delivered, will be conclusively deemed to have been

received by a party hereto and to be effective when so delivered, or if sent by telex, facsimile or telegraphic means, on the day on which transmitted, or if sent by overnight courier service, on the day after deposit thereof with such service, or if sent by certified or registered mail, on the third business day after the day on which deposited in the mail.

- 7.6 **Construction.** Any words herein that are used in one gender will be read and construed to mean or include the other genders wherever they would so apply. Any words herein which are used in the singular will be read and construed to mean and to include the plural wherever they would so apply, and vice versa.
- 7.7 **Waivers by Mortgagor.** Mortgagor hereby expressly waives, to the extent permitted by law, the equity of redemption, any statutory right of redemption, dower and homestead and all other rights and exemptions of every kind in and to the Property.
- 7.8 **Releases.** Mortgagor agrees that Mortgagee, without notice to or further consent of Mortgagor, may release or discharge any persons who are or may become liable for the payment of the Indebtedness or release or discharge any other collateral for the payment of the Indebtedness and any such release or discharge will not alter, modify, release or limit the validity and enforceability of this Mortgage or the liability of Mortgagor under the Indebtedness or this Mortgage.
- 7.9 **Appraisal.** From time to time, but in any event no more often than once each calendar year, Mortgagee may require a reappraisal of the market value of the Property, which appraisal will be paid for by Mortgagor. Such appraisal will be in form and content satisfactory to Mortgagee and be performed by an independent, certified appraiser selected by Mortgagee.
- 7.10 **Joint and Several.** If this Mortgage is executed by more than one person or entity as the "Mortgagor," the obligations of such persons or entities hereunder will be joint and several. Unless otherwise specified herein, any reference to "Mortgagor" will mean each such person or entity executing this Mortgage individually and all of such persons or entities collectively. This Mortgage will bind Mortgagor and the heirs, administrators, successors and assigns of Mortgagor, and the benefits hereof will inure to the benefit of Mortgagee and its successors and assigns. All references herein to the "Mortgagor" and "Mortgagee" will be deemed to apply to Mortgagor and Mortgagee and their respective heirs, administrators, successors and assigns; provided, however, that Mortgagor may not assign this Mortgage in whole or in part without the prior written consent of Mortgagee, and Mortgagee at any time may assign this Mortgage in whole or in part.
- 7.11 **Governing Law.** This Mortgage has been delivered and accepted at and will be deemed to have been made at Lexington, Kentucky and will be interpreted and the rights and liabilities of the parties hereto determined in accordance with the laws of the Commonwealth of

Kentucky, without regard to conflicts of law principles.

7.12 Jurisdiction. *Mortgagor hereby irrevocably agrees and submits to the exclusive jurisdiction of any state or federal court located within Jessamine County, Kentucky, or, at the option of Mortgagee in its sole discretion, of any state or federal court(s) located within any other county, state or jurisdiction in which Mortgagee at any time or from time to time chooses in its sole discretion to bring an action or otherwise exercise a right or remedy, and Mortgagor waives any objection based on forum non conveniens and any objection to venue of any such action or proceeding.*

7.13 Waiver of Jury Trial. *The parties hereto each waive any right to trial by jury in any action or proceeding relating to this Mortgage, or any actual or proposed transaction or other matter contemplated in or relating to any of the foregoing.*

Executed on this the 28th day of March, 2008 by Jessamine-South Elkhorn Water District, a Kentucky rural water district, and Mortgagor hereby incorporates the attached Exhibit A by reference as if fully set forth herein.

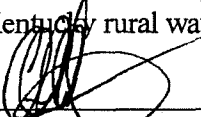
JESSAMINE-SOUTH ELKHORN WATER DISTRICT



L. NICHOLAS STRONG, CHAIRMAN

COMMONWEALTH OF KENTUCKY
COUNTY OF JESSAMINE

The foregoing Mortgage was acknowledged before me on the 28th day of March, 2008, by L. Nicholas Strong, Chairman, for and on behalf of Jessamine-South Elkhorn Water District, a Kentucky rural water district, Mortgagor.



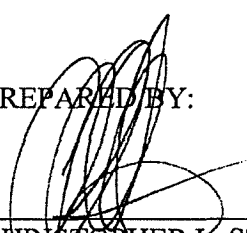
CHRISTOPHER L. STANSBURY
NOTARY PUBLIC
Commonwealth of Kentucky
State-at-Large
My Commission Expires: 6/30/11

Exhibit "A"

All that certain lot or parcel of land lying and being located in Jessamine County, Kentucky, and being known and designated as Lots No. 19, 111 and 112, of Section 3, Edgewood East Estates, to the City of Nicholasville, Kentucky, as shown by Amended Plat of record in Plat Cabinet 7, Page 102B (formerly known as Plat Book No. 5, Page 59), in the Office of the Clerk of the Jessamine County Clerk, and to which reference is hereby made for a more particular description of said lot.

Being the same property conveyed to the Jessamine-South Elkhorn Water District, a Kentucky rural water district by deed of The Farmers Bank, Nicholasville, Kentucky, a Kentucky banking corporation, dated March 28, 2008, and recorded herewith Deed Book 1000 Page 421, in the aforesaid clerk's office.

PREPARED BY:



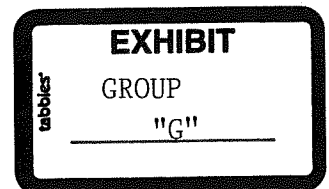
CHRISTOPHER L. STANSBURY
MOYNAHAN, IRVIN, MOONEY & STANSBURY, P.S.C.
110 NORTH MAIN STREET
NICHOLASVILLE, KENTUCKY 40356
(859) 887-1200
5542-457

DOCUMENT NO: 219414
RECORDED ON: APRIL 03, 2008 11:47:19AM
TOTAL FEES: \$65.00
COUNTY CLERK: EVA L. MCDANIEL, C.J.C.
COUNTY: JESSAMINE COUNTY
DEPUTY CLERK: MONICA L. CARPENTER
BOOK M932 PAGES 17 - 35

JESSAMINE SOUTH ELKHORN WATER DISTRICT
WATER AND SEWER DIVISIONS
Statement of Net Assets
December 31, 2012

	Water Division	Sewer Division	Total Business Activities
<u>Assets</u>			
<u>Cash and current assets</u>			
Cash and cash equivalents, unrestricted	\$ 339,144	\$ 74,298	\$ 413,442
Accounts receivable	186,404	3,962	190,366
Prepaid expenses	12,104		12,104
Due to (from) other funds	64,568	(64,568)	0
Cash and cash equivalents, restricted	561,342	407,524	968,866
Total cash and current assets	<u>1,163,562</u>	<u>421,216</u>	<u>1,584,778</u>
<u>Capital Assets</u>			
Land, improvements and construction in process	499,801	474,430	974,231
Other capital assets, net of depreciation	11,849,201	7,498,786	19,347,987
Total capital assets	<u>12,349,002</u>	<u>7,973,216</u>	<u>20,322,218</u>
<u>Other non-current assets</u>			
Unamortized bond costs	96,421	36,789	133,210
Total Assets	<u>\$ 13,608,985</u>	<u>\$ 8,431,221</u>	<u>\$ 22,040,206</u>
<u>Liabilities</u>			
<u>Current Liabilities</u>			
Accounts payable	\$ 60,315	\$ 10,991	\$ 71,306
Payroll taxes payable	1,166		1,166
Customer deposits	8,160	16,800	24,960
Other current liabilities		144,006	144,006
Interest payable	45,258	61,013	106,271
Total current liabilities	<u>114,899</u>	<u>232,810</u>	<u>347,709</u>
<u>Current Portion of Debt</u>			
Current notes payable	78,589		78,589
Current bonds payable	36,000		36,000
Total current portion of long-term debt	<u>114,589</u>	<u>0</u>	<u>114,589</u>
<u>Long-term Debt</u>			
Notes payable	2,427,164		2,427,164
Bonds payable	2,022,500	1,512,000	3,534,500
Total long-term debt	<u>4,449,664</u>	<u>1,512,000</u>	<u>5,961,664</u>
Total Liabilities	<u>4,679,152</u>	<u>1,744,810</u>	<u>6,423,962</u>
<u>Net Assets</u>			
Invested in capital assets, net of related debt	7,784,749	6,461,216	14,245,965
<u>Restricted for:</u>			
Debt service	78,695	115,882	194,577
Capital projects	152,514	291,642	444,156
Depreciation reserve	14,666		14,666
Operation and maintenance reserve	290,467		290,467
<u>Unreserved, undesignated reported in:</u>			
Unrestricted net assets	583,676	(182,329)	401,347
Board designated net assets	25,066	0	25,066
Total Net Assets	<u>\$ 8,929,833</u>	<u>\$ 6,686,411</u>	<u>\$ 15,616,244</u>

See accompanying notes to financial statements.



JESSAMINE SOUTH ELKHORN WATER DISTRICT
WATER AND SEWER DIVISIONS
 Combined Statement of Revenues, Expenditures and Changes in Net Assets
 For The Year Ended December 31, 2012

Functions/Programs	Expenses	Charges for Services	Operating Grants & Contributions Revenues	Capital Grants & Contributions Revenues	Net (Expense) Revenue
Business-type Activities:					
Water Division					
Operating expense	\$ 1,819,970	\$ 2,312,421	\$	\$ 99,747	\$ 592,198
Interest expense	143,683				(143,683)
Depreciation expense	426,770				(426,770)
Sewer Division					
Operating expenses	525,508	455,330		143,891	73,713
Interest expense	90,291				(90,291)
Depreciation expense	<u>207,005</u>				<u>(207,005)</u>
Total Business Activities	<u>\$ 3,213,227</u>	<u>\$ 2,767,751</u>	<u>\$ 0</u>	<u>\$ 243,638</u>	<u>(201,838)</u>
Revenues					
Investment income - water					2,646
Investment income - sewer					301
Other revenues					<u>29,675</u>
Total General Revenues					<u>32,622</u>
Excess of Revenues Over (Under)					
Change in Net Assets					(169,216)
Net assets beginning of year - 1/1/12					<u>15,785,460</u>
Net assets end of year - 12/31/12					<u>\$ 15,616,244</u>

See accompanying notes to financial statements.

JESSAMINE SOUTH ELKHORN WATER DISTRICT
WATER AND SEWER DIVISIONS
COMBINED STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
For The Year Ended December 31, 2012

CASH FLOWS FROM OPERATING ACTIVITIES:	
Cash received from customers	\$ 2,699,228
Other operating receipts	29,979
Cash payments for personnel expenses	(400,827)
Cash payments for goods and services	<u>(1,898,780)</u>
Net cash provided by (used in) operating activities	<u>429,600</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:	
Net customer deposits	132,161
Grants received	111,477
Borrowings under long-term obligations	1,655,238
Purchases of capital assets	(509,082)
Principal paid on long-term obligations	(1,738,236)
Interest paid on long-term obligations	<u>(222,434)</u>
Net cash provided by (used in) capital and related financing activities	<u>(570,876)</u>
CASH FLOWS FROM INVESTING ACTIVITIES:	
Income from investments	<u>2,947</u>
Net cash provided by (used in) investing activities	<u>2,947</u>
Net change in cash and cash equivalents	(138,329)
Cash and equivalents, beginning of year	<u>1,520,637</u>
Cash and equivalents, end of year	<u>\$ 1,382,308</u>

See accompanying notes to financial statements.

JESSAMINE SOUTH ELKHORN WATER DISTRICT
WATER AND SEWER DIVISIONS
STATEMENT OF CASH FLOWS (CONTINUED)
PROPRIETARY FUNDS
For the Year Ended December 31, 2012

	Total
Reconciliation of cash and cash equivalents to the proprietary funds statement of net assets:	
Cash and cash equivalents-unrestricted	\$ 413,442
Cash and cash equivalents-restricted	968,866
Total cash and cash equivalents per the proprietary funds statement of net assets	1,382,308
Reconciliation of income (loss) from operations to net cash flows from operating activities:	
Income (loss) from operations	\$ (181,827)
Depreciation expense	633,775
(Increase) decrease in operating assets:	
Accounts receivable	(68,523)
Other current assets	304
Increase (decrease) in operating liabilities:	
Accounts payable and other accrued expenses	25,544
Meter deposits and other liabilities	20,327
Net cash provided by (used in) operating activities	\$ 429,600
Non-cash investing, capital, and financing activities:	
Defeasance of 2000A debt	\$ 47,850

See accompanying notes to financial statements.