Kentucky-American Water Company

2300 Richmond Road • Lexington, Kentucky 40502 • (606) 269-2386 • Fax (606) 268-6327

Coleman D. Bush
Vice President & Treasurer
(606) 268-6324

April 27, 1998

Mr. Robert K. Miller, Vice President of Finance and Treasurer
Louisville Water Company
435 South Third Street
Louisville, KY 40202

Dear Bob:

I have attached a revised draft of our contract. Please forward any changes after your review.

Also, please forward your revised pricing proposal by Thursday morning, April 30, 1998.

Sincerely,

Coleman D. Bush
Vice President and Treasurer

C: Roy W. Mundy II
Herb Miller
Mark Frost
Nick Rowe
Lindsey Ingram
Linda Bridwell

lwccont

Revised April 27, 1998

AGREEMENT

THIS AGREEMENT, dated this ____ day of _____, 1998, by and between KENTUCKY-AMERICAN WATER COMPANY, a Kentucky Corporation, at 2300 Richmond Road, Lexington, Kentucky 40502 ("Buyer") and LOUISVILLE WATER COMPANY, a municipal corporation, at 435 South Third Street, Louisville, Kentucky 40202 ("Seller").

WITNESSETH:

WHEREAS, Seller owns and operates municipal water supply and treatment facilities comprising several sources of supply, including the Ohio River; and

WHEREAS, Seller utilizes its facilities to provide water service on a wholesale and retail basis in Jefferson, Oldham, Bullit, Shelby County Ky. and

Same

WHEREAS, Seller has available reserve capacity sufficient to meet Buyer's needs under this Agreement; and

WHEREAS, Buyer is engaged in the manufacture of water and currently sells water to customers in the counties of Fayette, Bourbon, Clark, Harrison, Jessamine, Scott, and Woodford; and

WHEREAS, both Buyer and Seller are desirous of entering into an agreement to provide Buyer a continuing, dependable source of water for the present and future needs of Buyer's customers;

NOW, THEREFORE, in consideration of the mutual covenants herein contained, the parties hereby agree as follows:

Revised April 27, 1998

1. **DEFINITIONS**: In this Agreement, these terms have the meanings indicated below:

a. **Seller**: Louisville Water Company, a municipal corporation located at 435 South Third Street, Louisville, Kentucky 40202. KRS

b. **Buyer**: Kentucky-American Water Company, a Kentucky corporation located at 2300 Richmond Road, Lexington, Kentucky 40502.

differentiate btw LWC & KA Facilities

Seller facilities

c. **Project Facilities**: Fixtures, equipment, mains, meters, vaults, storage tanks, pipes, pumps, buildings and other improvements and facilities approved by Buyer for the delivery of Service under this Agreement.

Buyer Facilities

d. **Point of Delivery**: The location of the connection of the Project Facilities to Buyer's Facilities ~~at a point to be determined by Buyer, in its reasonable discretion, in Shelby County, Kentucky near the intersection of the Jefferson County - Shelby County line and Kentucky Highway 60.~~ identified as a point approximately ___ feet south of Interstate 64 on U.S. Highway ~~42~~ 55. The Point of Delivery shall be owned by Seller Keep

e. **Service**: The actual delivery of treated, potable water by Seller to the Point of Delivery under this Agreement including, but not limited to, the requirements in Sections 5.a. and 5.b. hereunder.

2. **DESIGN OF PROJECT FACILITIES**:

a. Seller will design the Seller's Project Facilities. However, Seller may elect to design the Seller's Project Facilities by engaging a qualified professional to provide such design

services. If Seller elects to engage such a qualified design professional, Buyer reserves the right to approve the selection of such professional, which approval shall not be unreasonably withheld. same PP for design of Buyer's Facilities

b. The scope of the Design is subject to approval of Buyer in its reasonable discretion. Should Seller elect to expand the design, construction or installation of the Project Facilities in excess of the Buyer's determination of the scope of the Project Facilities, then all costs, direct or indirect, associated with expanding the scope shall be borne solely by the Seller. Any expansion of the scope of the Project Facilities shall not interfere with Seller's duties to deliver Service to the Point of Delivery as required under this Agreement.

c. Provided Seller does not expand the scope of the Project Facilities, Buyer agrees to pay the actual and reasonable costs of the Design of Project Facilities, such costs to include outside professional engineering fees, measurable internal costs of engineering design and actual out-of-pocket costs associated with the issuance of debt obligations including payments of principal, interest and other reasonable professional fees. Any changes in the Design which, individually or in the aggregate, increases the cost of the Design shall be subject to Buyer's prior written approval, which approval shall not be unreasonably withheld.

3. **TIME DEADLINE FOR DESIGN OF PROJECT FACILITIES**: Seller agrees that its Design must be fully completed in a form and substance to Buyer's approval prior

to Buyer's application to the Public Service Commission for a Certificate of Convenience and Necessity, provided that the date for completion of design shall not be later than October 21, 1998. Seller acknowledges and agrees that time is of the essence in the Design of the Project Facilities.

4. **CONSTRUCTION OF PROJECT FACILITIES**: Seller shall complete construction and installation of the Project Facilities and have Service available at the Point of Delivery no later than 15 months ("Construction Completion Date") from the date Buyer notifies Seller to begin construction ("Construction Commencement Date"). Delays in the Construction Completion Date may extend such date provided that delays are caused by sudden and unexpected adverse weather conditions, labor unrest, natural disasters or other circumstances beyond Seller's control. Seller acknowledges and agrees that time is of the essence in the Construction of Project Facilities.

5. **REIMBURSEMENT TO SELLER FOR CONSTRUCTION AND DEBT SERVICE COSTS FOR THE PROJECT FACILITIES**:

a. Seller will construct the Project Facilities at its expense. Buyer agrees to pay Seller, on a monthly basis, amortized over a period commensurate with the term of indebtedness or over some other term as mutually agreed upon by the parties, the amount necessary to pay, in full, Seller's indebtedness, including interest, incurred to construct the Project Facilities. The rate of interest on such indebtedness shall be established through a competitive bid process for tax-exempt instruments and failing a successful bid on tax-exempt instruments, through a competitive bid process on conventional debt instruments.

b. If Seller's debt instruments permit prepayment of part or all of the debt obligation, and if Buyer is not in default of any of its payments to Seller under Section 8 of this Agreement, then Buyer has the right to instruct Seller to exercise the prepayment privilege and shall simultaneously pay to Seller the amount of the prepayment to remit to the holders of the debt instruments.

6. **SERVICE AT THE POINT OF DELIVERY**:

a. **Condition**. Buyer will pay Seller for Service at the Point of Delivery, provided Service is delivered to the Point of Delivery in a potable condition, which meets or exceeds all minimum state and federal regulations, ~~as the same may be changed from time to time~~; and in a condition for Buyer's continued process of pressurization, improvement, processing, and other manufacturing and production.

what if Buyer's needs are unreasonable

b. **Rate of Flow and Pressure**. Seller shall construct Project Facilities to furnish Service to Buyer at the Point of Delivery with a flow rate at a maximum rate of 16,000 gallons per minute and a minimum pressure of not less than thirty (30) pounds per square inch.

c. **Failures**. In the event Seller is unable to provide Buyer with Service under the terms of this Section for reasons beyond Seller's control, Seller shall use its best efforts to restore the water to a quality, rate of flow and pressure as required in this Section. Time is of the essence in all situations where such a failure and restoration exist.

need some comparison for K.A failure

7. **METERING ARRANGEMENTS**: Seller agrees to furnish, install, maintain, repair and replace at the Point of Delivery a service meter or battery of meters, including

meter house or vault, for properly measuring the quantity of water being delivered to Buyer and to test such metering equipment whenever requested by Buyer but no more frequently than once every six months with the results of such tests provided to Buyer. Buyer may require Seller to conduct tests more often than every six months, but at its own expense. A meter registering within the warranty limits specified by the manufacturer thereof shall be deemed to be accurate. Previous readings of any meter disclosed by test to be inaccurate shall be corrected for three months previous to such test in accordance with the percentage of inaccuracy found by such test. If any meter fails to register for any period the amount of water furnished during such period shall be deemed to be the amount of water delivered in the corresponding period immediately prior to the failure, unless Seller and Buyer shall agree otherwise. Notification of meter failure will be from an alarm system based on real-time monitoring. An appropriate official of the Buyer shall have access to the meter at reasonable times for the purpose of inspecting and reading such metering facilities.

how is this done

who installs this ?

8. **RATES AND PAYMENT**:

a. Buyer shall pay Seller in accordance with this Agreement pursuant to the rates and terms so identified on Schedule B, attached hereto and incorporated herein and as may be changed from time to time as approved by the Board of Waterworks of the City of Louisville and the Public Service Commission of the Commonwealth of Kentucky pursuant to its rules and regulations.

b. Seller shall invoice Buyer on a monthly basis for water usage as reflected by the metering devices (installed pursuant to Section 7 hereof) on the last business day of each calendar month. Buyer shall remit payment to Seller for such invoices no later than the 20th calendar day following receipt of such invoice and acknowledgment by Buyer that such invoice is correct as to charges and water usage.

9. **RESERVATION OF SELLER'S CAPACITY**: Seller agrees, throughout the term of this Agreement, to provide Buyer with a reservation of its water treatment capacity, such reservation to not be less than capacity needed under this Agreement to treat and deliver Service to the Point of Delivery as set forth in this Agreement.

10. **SERVICE TO OTHERS ALONG PROJECT FACILITIES BY SELLER PRIOR TO THE POINT OF DELIVERY**: Seller warrants and represents that any water service to others along project facilities prior to the Point of Delivery shall not interfere with or diminish its obligations to the Buyer under this Agreement. In the event of any such interference or diminishment, Seller shall immediately cease or diminish such Service to others until full Service is restored to Buyer.

11. **ADDITIONAL EXPANSION BY SELLER**: Seller agrees that upon undertaking any expansion or enlargement of the capacity of its existing supply or treatment facilities or elevated service area pumping, transmission and storage facilities, to the extent that expansion or enlargement is related to the provision of service under this agreement, it will notify Buyer of its intention to do so and will afford the Buyer with a reasonable opportunity to participate in the expansion or enlargement with a

commensurate extension of the term of the contract for the purchase or delivery of additional water.

12. **LIMITATION OF SERVICE TO BUYER FOR REASONS BEYOND SELLER'S CONTROL**:

a. Buyer acknowledges that unexpected supply or treatment problems may occur which are beyond Seller's control. In the event such unexpected problems limit or prevent the Seller's ability to deliver Service to the Point of Delivery, and such problems limit or prevent the delivery to any of the Seller's customers, then Seller agrees that any restrictions on water delivery shall apply to the Buyer in a similar manner which Seller applies to its customers, excluding medical facilities, of the highest and most important priority.

Emergency.

also utilities like ?

b. Seller will use its best efforts to restore full Service to Buyer as promptly and completely as possible. Time is of the essence for the restoration of full service.

13. **TERM AND EXTENSIONS**: The term of this Agreement shall begin on the date this Agreement is executed by both parties hereto and shall terminate on December 31, 2030. This Agreement shall be automatically extended for two (2) consecutive additional terms of twenty-five (25) years each, unless Buyer provides written notice to Seller at least five (5) years prior to the end of the then existing term, that Buyer does not intend to extend the then existing term.

in favor of buyer

how about a ~~sewer~~ option

14. **NOTICE**: Buyer will provide timely notice to Seller of any emergency or condition, which would adversely affect the quality, quantity or pressure of the water in the Seller's system and likewise, Seller will provide timely notice to Buyer of any emergency or condition, which would adversely affect the quality, quantity or pressure of the water at the Point of Delivery.

15. **BUYER'S REPRESENTATIONS AND WARRANTIES**:

a. Buyer is a Kentucky corporation with the authority to enter into this Agreement, and subject to regulatory approval, has the authority to perform under the terms of this Agreement.

b. Buyer shall be responsible for the maintenance of water quality after the Point of Delivery provided that Seller has delivered Service to the Point of Delivery pursuant to this Agreement.

c. Provided Seller has delivered Service to the Point of Delivery pursuant to this Agreement, Buyer shall be responsible for any bursting or breakage of pipes or damages to persons or property after the water is delivered to the Point of Delivery.

16. **SELLER'S REPRESENTATIONS AND WARRANTIES**:

a. Seller is a municipal corporation with the authority to enter into this Agreement, and has the authority to perform under the terms of this Agreement.

b. Seller will deliver Service to the Point of Delivery that meets or exceeds the applicable quality standard of all state and federal regulatory agencies, as they may change from time to time, and the requirements of Section 6 of this Agreement.

c. Seller shall be responsible for the Project Facilities to the Point of Delivery and the quality, rate of flow and pressure of the water at the Point of Delivery.

17. **TERMINATION**:

a. Buyer may terminate this Agreement upon six (6) months written notice in the event of:

1. Repeated failure of Seller to meet its commitment to reserve capacity, or to meet the water delivery requirements in Section 6 hereof.

2. Revocation of Seller's authority to do business.

3. Seller's breach of any of the Representations and Warranties in this Agreement as determined by a court of law in the Commonwealth of Kentucky.

b. Seller may terminate this Agreement upon six (6) months written notice in the event of:

1. Repeated failure of Buyer to pay its invoices for water service on a timely basis, within 30 days.

2. Revocation of Buyer's authority to do business.

3. Buyer's breach of any of the Representations and Warranties in this Agreement as determined by a court of law in the Commonwealth of Kentucky.

17. **MISCELLANEOUS PROVISIONS**:

a. This Agreement is subject to the approval of the Kentucky Public Service Commission ("PSC") and receipt by Buyer of a final, non-appealable Order from the PSC in the form of a Certificate of Convenience and Necessity for the facilities to be constructed pursuant to this Agreement.

b. This Agreement does not constitute a partnership, joint venture, agency or other relationship between Buyer and Seller and Buyer and Seller expressly state that they owe no fiduciary duties to one another and that the relationship is based upon Contract.

c. This Agreement is binding on the successors and assigns of the parties hereto.

d. Buyer and Seller agree that each of them shall have access to the books and records of the other, which are related to matters which are the subject of this Agreement, at such reasonable notice, except those records that may be subject to a recognized privilege, that are confidential or that may be protected by the Kentucky Open Records Law. Without limitation, the information subject to access shall include all costs of design, construction, financing, and costs of operation and maintenance of the facilities contemplated by this Agreement.

e. Seller agrees to carry, throughout the term of this Agreement, such liability and casualty insurance in a form and amount subject to the reasonable determination of the Board of Waterworks of the City of Louisville. Seller shall, upon

Buyer's request, show evidence of such insurance by a certificate, which includes Buyer as an additional insured under such insurance coverage.

f. Buyer reserves the right to develop and use other water supply sources and may obtain water from sources other than the Seller.

g. The parties agree to operate and maintain their respective facilities in an efficient and economical manner and in accordance with all applicable local, state and federal laws, regulations and performance standards.

h. This Agreement may be amended at any time by mutual agreement, in writing, of the parties.

i. Both parties agree to use their best efforts to obtain all regulatory and legal approvals required for the accomplishment of the terms of this Agreement.

j. Time is of the Essence under this Agreement.

k. The parties acknowledge that the water to be purchased hereunder will be manufactured and resold in the regular course of business of Buyer and is therefore exempt from Kentucky sales and use tax. To evidence this exemption, Buyer will furnish Seller with a duly executed "Resale Certificate" or such other documentation as the parties deem appropriate.

Approval for service to our existing customers.

Revised April 27, 1998

IN WITNESS WHEREOF, the parties have set forth their hands the day and year first above written.

BUYER:	SELLER:
Kentucky-American Water Company	**Louisville Water Company**
By: _____	By : _____
Title: _____	Title: _____
Date: _____	Date: _____
Attest:_____	Attest:_____

312\C:\Work\LWI\KAWC\Bluegrass\004Louisville.Agr

-add provision for standard wholesale rate plus premium for any sales above 15,000 gpm if available from LWC (not reserved)

Meeting with Kentucky American Water Company
May 5, 1998 10:30-4:30

Kentucky American Potential Attendees

Roy Mundy, President
Nick Rowe, VP Operations
Coleman Bush, VP Treasurer
Herb Miller, Corporate Counsel
Ed Grubb, Comptroller
Linda Bridwell, Director of Engineering
Mark Frost, Revenue Requirements Specialist
Lindsey W. Ingram, Jr.; Stoll, Keenon, & Park; General Counsel and KAWC Board Member

Potential Agenda Topics

I. Opening Remarks by Huber
II. Opening Remarks by Mundy (expect comments on project urgency, need for flexibility, availability of alternatives)
III. Status of Timeline (agreement that LWC is working on markup of contract by Heitzman and Helm, working to resolve key issues, find out next steps with PSC)
IV. Identify Key Issues (capacity reserve request and payment; point of delivery and term; contract renewal terms; contract termination clauses; specific legal wording; implementation issues; are there other items?)
V. Take issues one at a time

Contract Paragraph References

1. Definitions
2. Design of Project Facilities
3. Time Deadline for Design of Project Facilities
4. Construction of Project Facilities
5. Reimbursement to Seller for Construction and Debt Service Costs for the Project Facilities
6. Service at the Point of Delivery (Condition, Rate of Flow and Pressure, Failures)
7. Metering Arrangements
8. Rates and Payment
9. Reservation of Sellers Capacity
10. Service to Others along Project Facilities by Seller Prior to the Point of Delivery
11. Additional Expansion by Seller
12. Limitation of Service to Buyer for Reasons Beyond Seller's Control
13. Term and Extensions
14. Notice
15. Buyers Representations and Warranties
16. Sellers Representations and Warranties
17. Termination
18. Miscellaneous Provisions

Attachments

Current Markup of Contract by LWC
KAWC Organization Chart
Bluegrass Water Project Fact Sheets

☆ indicates issues not settled as of 4-26-98

4/26/98 marked copy from RKM & CDB marked copy

AGREEMENT

THIS AGREEMENT, dated this ____ day of _____, 1998, by and between KENTUCKY-AMERICAN WATER COMPANY, a Kentucky Corporation, at 2300 Richmond Road, Lexington, Kentucky 40502 ("Buyer") and LOUISVILLE WATER COMPANY, a municipal corporation, at 435 South Third Street, Louisville, Kentucky 40202 ("Seller").

WITNESSETH:

WHEREAS, Seller owns and operates municipal water supply and treatment facilities comprising several sources of supply, including the Ohio River; and

WHEREAS, Seller utilizes its facilities to provide water service on a wholesale and retail basis; and

WHEREAS, Seller has available reserve capacity sufficient to meet Buyer's needs under this Agreement; and

WHEREAS, Buyer is ~~engages~~ d, in the manufacture of water and currently sells water ~~for sale~~ to customers in the ~~Central Kentucky area including the~~ counties of Fayette, Bourbon, Clark, Harrison, Jessamine, Scott, and Woodford; and

☆ Joe + Bob will shape recitals To express intent of the parties.

WHEREAS, both Buyer and Seller are desirous of entering into an agreement to provide Buyer a continuing, dependable source of water for the present and future needs of Buyer's customers:

NOW, THEREFORE, in consideration of the mutual covenants herein contained, the parties hereby agree as follows:

4/26/98
draft

1. **DEFINITIONS**: In this Agreement, these terms have the meanings indicated below:

a. **Seller**: Louisville Water Company, a municipal corporation located at 435 South Third Street, Louisville, Kentucky 40202.

b. **Buyer**: Kentucky-American Water Company, a Kentucky corporation located at 2300 Richmond Road, Lexington, Kentucky 40502.

c. **Project Facilities**: Fixtures, equipment, mains, meters, vaults, storage tanks, pipes, pumps, buildings and other improvements and facilities approved by Buyer for the delivery of Service under this Agreement.

d. **Point of Delivery**: The location of the connection of the Project Facilities to Buyer's Facilities at a point to be determined by Buyer, in its reasonable discretion, in Shelby County, Kentucky near the intersection of the Jefferson County - Shelby County line and Kentucky Highway 60. The Point of Delivery shall be owned by ~~Buyer.~~ Seller

(NICK & LINDA, ON 4-28, WILL CONTINUE DISC. WITH LWC ON THIS POINT)

e. **Service**: The actual delivery of treated, potable water by Seller to the Point of Delivery under this Agreement including, but not limited to, the requirements in Sections 5.a. and 5.b. hereunder.

2. **DESIGN OF PROJECT FACILITIES**:

a. Seller will design the Project Facilities. However, Seller may elect to design the Project Facilities by engaging a qualified professional to provide such design services. If Seller elects to engage such a qualified design professional, Buyer reserves the

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right to approve the selection of such professional. which approval shall not be unreasonably withheld.

(KAREN HILL PROVIDE STD. CONTRACT LANGUAGE FOR KAWC REVIEW)

b. The scope of the Design is subject to approval of Buyer in its reasonable discretion. Should Seller elect to expand the design, construction or installation of the Project Facilities in excess of the Buyer's determination of the scope of the Project Facilities, then all costs. direct or indirect, associated with expanding the scope shall be borne solely by the Seller. Any expansion of the scope of the Project Facilities shall not interfere with Seller's duties to deliver Service to the Point of Delivery as required under this Agreement.

c. Provided Seller does not expand the scope of the Project Facilities, Buyer agrees to pay the actual and reasonable costs of the Design of Project Facilities, such costs to include outside professional engineering fees, measurable internal costs of engineering design and actual out-of-pocket costs associated with the issuance of tax exempt debt obligations including payments of principal, interest and other reasonable professional fees. Any changes in the Design which, individually or in the aggregate, increases the cost of the Design shall be subject to Buyer's prior written approval, which approval shall not be unreasonably withheld.

3. **TIME DEADLINE FOR DESIGN OF PROJECT FACILITIES**: Seller agrees that its Design must be fully completed in a form and substance to Buyer's approval prior to Buyer's application to the Public Service Commission for a Certificate of Convenience and Necessity, provided that the date for completion of design shall not be later than

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* Joe is still weighing this language

21 ~~2~~

~~*~~ October ~~1,~~ 1998. Seller acknowledges and agrees that time is of the essence in the Design of the Project Facilities.

4. **CONSTRUCTION OF PROJECT FACILITIES**: Seller shall complete construction and installation of the Project Facilities and have Service available at the Point of Delivery no later than 15 months ("Construction Completion Date") from the date Buyer notifies Seller to begin construction ("Construction Commencement Date"). Delays in the Construction Completion Date may extend such date provided that delays are caused by sudden and unexpected adverse weather conditions, labor unrest, natural disasters or other circumstances beyond Seller's control. Seller acknowledges and agrees that time is of the essence in the Construction of Project Facilities.

5. **REIMBURSEMENT TO SELLER FOR CONSTRUCTION AND DEBT SERVICE COSTS FOR THE PROJECT FACILITIES**:

a. Seller will construct the Project Facilities at its expense. Buyer agrees to pay Seller, on a monthly basis, amortized over a period ~~of twenty (20) years,~~ the amount necessary to pay, in full, Seller's indebtedness, including interest, incurred to construct the Project Facilities. The rate of interest on such indebtedness shall be established through a competitive bid process for tax-exempt instruments and failing a successful bid on tax-exempt instruments, through a competitive bid process on conventional debt instruments. ~~not exceed the interest rate for a comparable tax exempt debt issue. The amortization schedule is attached hereto as Schedule A.~~

b. If Seller's debt instruments permit prepayment of part or all of the debt obligation, and if Buyer is not in default of any of its payments to Seller under Section 8 of this Agreement, then Buyer has the right to instruct Seller to exercise the prepayment

commensurate with the term of indebtedness or over some other term as mutually agreed upon by the parties.

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draft

privilege and shall simultaneously pay to Seller the amount of the prepayment to remit to the holders of the debt instruments.

6. **SERVICE AT THE POINT OF DELIVERY**:

a. **Condition**. Buyer will pay Seller for Service at the Point of Delivery, provided Service is delivered to the Point of Delivery in a potable condition, which meets ~~and~~, as the same may be changed from time to time, or exceeds all minimum state and federal regulations and in a condition for Buyer's continued process of pressurization, improvement, processing, and other manufacturing and production. At Buyer's direction and expense, Seller agrees to adjust certain chemical levels of the water prior to the Point of Delivery. Seller may sample water provided under this Agreement at or prior to the Point of Delivery. LWI suggested we take this section out

b. **Rate of Flow and Pressure**. Seller shall, ~~have the ability~~ to furnish construct project facilities ~~and shall furnish~~ Service to Buyer at the Point of Delivery with a flow rate at a maximum rate of 16,000 gallons per minute and a ~~constant~~ minimum pressure of not less than ~~forty (40)~~ thirty (30) pounds per square inch.

c. **Failures**. In the event Seller is unable to provide Buyer with Service under the terms of this Section for reasons beyond Seller's control, Seller shall use ~~all of~~ its best efforts to restore the water to a quality, rate of flow and pressure as required in this Section. Time is of the essence in all situations where such a failure and restoration exist.

Joe is still weighing language

7. **METERING ARRANGEMENTS**: Seller agrees to furnish, install, maintain, repair and replace at the Point of Delivery a service meter or battery of meters, including meter house or vault, for properly measuring the quantity of water being delivered to Buyer and to ~~calibrate~~ test such metering equipment whenever requested by Buyer but no more

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frequently than once every six months with the results of such tests provided to Buyer. Buyer may require Seller to conduct tests more often than every six months, but at its own expense. A meter registering within the warranty limits specified by the manufacturer thereof shall be deemed to be accurate. Previous readings of any meter disclosed by test to be inaccurate shall be corrected for three months previous to such test in accordance with the percentage of inaccuracy found by such test. If any meter fails to register for any period the amount of water furnished during such period shall be deemed to be the amount of water delivered in the corresponding period immediately prior to the failure, unless Seller and Buyer shall agree otherwise. NOTIFICATION OF METER FAILURE WILL BE FROM AN ALARM SYSTEM BASED ON REAL-TIME MONITORING. An appropriate official of the Buyer shall have access to the meter at reasonable times for the purpose of inspecting, reading and such metering facilities.

8. **RATES AND PAYMENT**:

a. Buyer shall pay Seller in accordance with this Agreement pursuant to the rates and terms so identified on Schedule B. attached hereto and incorporated herein and as may be changed from time to time as approved by the Board of Waterworks of the City of Louisville and the Public Service Commission of the Commonwealth of Kentucky pursuant to its rules and regulations.

Rate is pending further negotiations. review by the

b. Seller shall invoice Buyer on a monthly basis for water usage as reflected by the metering devices (installed pursuant to Section 7 hereof) on the last business day of each calendar month. Buyer shall remit payment to Seller for such invoices no later than the 20th calendar day following receipt of such invoice and acknowledgment by Buyer that such invoice is correct as to charges and water usage.

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draft

9. ~~EXCLUSIVE~~ RESERVATION OF SELLER'S CAPACITY: Seller agrees, throughout the term of this Agreement, to provide Buyer with ~~an exclusive~~ a reservation of its water treatment capacity, such reservation to not be less than capacity needed under this Agreement to treat and deliver Service to the Point of Delivery as set forth in this Agreement.

10. SERVICE TO OTHERS BY SELLER PRIOR TO THE POINT OF DELIVERY: Seller warrants and represents that any water service to others along project facilities prior to the Point of Delivery shall not interfere with or diminish its obligations to the Buyer under this Agreement. In the event of any such interference or diminishment, Seller shall immediately cease or diminish such Service to others until full Service is restored to Buyer.

11. ADDITIONAL EXPANSION BY SELLER: Seller agrees that upon undertaking any expansion or enlargement of the capacity of its existing supply or treatment facilities, it will notify ~~notice~~ Buyer of its intention to do so and will afford the Buyer with a reasonable opportunity to participate in the expansion or enlargement with a ~~negotiate~~ for the ~~additional~~ purchase or delivery of water. additional commensurate extension of the term of the contract,

12. LIMITATION OF SERVICE TO BUYER FOR REASONS BEYOND SELLER'S CONTROL:

a. Buyer acknowledges that unexpected supply or treatment problems may occur which are beyond Seller's control. In the event such unexpected problems limit or prevent the Seller's ability to deliver Service to the Point of Delivery, and such problems limit or prevent the delivery to any of the Seller's customers, then Seller agrees that any restrictions on water delivery shall apply to the Buyer in a similar manner which Seller applies to its customers, excluding medical facilities, of the highest and most important priority.

or elevated service area pumping, transmission and storage facilities to the extent that expansion or enlargement is related to the provision of service under this agreement,

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b. Seller will use its best efforts to restore full Service to Buyer as promptly and completely as possible. Time is of the essence for the restoration of full service.

13. **TERM AND EXTENSIONS**: The term of this Agreement shall begin on the date this Agreement is executed by both parties hereto and shall terminate on December 31, 2030. This Agreement shall be automatically extended for two (2) consecutive additional terms of twenty-five (25) years each, unless Buyer provides written notice to Seller at least ~~two (2)~~ five (5) years prior to the end of the then existing term, that Buyer does not intend to extend the then existing term.

(1) 14. old 14.d. and 15.c. become new # 14. NOTICE:

~~14.~~ 15. **BUYER'S REPRESENTATIONS AND WARRANTIES**:

a. Buyer is a Kentucky corporation with the authority to enter into this Agreement, and subject to regulatory approval, has the authority to perform under the terms of this Agreement.

b. Buyer shall be responsible for the maintenance of water quality after the Point of Delivery provided that Seller has delivered Service to the Point of Delivery pursuant to this Agreement.

c. Provided Seller has delivered Service to the Point of Delivery pursuant to this Agreement, Buyer shall be responsible for any bursting or breakage of pipes or damages to persons or property after the water is delivered to the Point of Delivery.

(1) d. Buyer will ~~immediately notify~~ provide timely notice to Seller of any emergency or condition which would adversely affect the quality, quantity or pressure of the water in the Seller's system.

4/26/98
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~~15.~~ 16. **SELLER'S REPRESENTATIONS AND WARRANTIES**:

a. Seller is an municipal corporation with the authority to enter into this Agreement, and has the authority to perform under the terms of this Agreement.

b. Seller will deliver Service to the Point of Delivery that meets or exceeds the applicable quality standards of all ~~local,~~ state and federal regulatory agencies ~~and~~, as they may change from time to time and the requirements of Section 6 of this Agreement.

(1) becomes part of new ¶ 14 on prev. page

c. Seller will ~~immediately notify~~ provide timely notice to Buyer of any emergency or condition which would adversely affect the quality, quantity or pressure of the water ~~in the Buyer's system.~~ at the Point of Delivery.

~~d. Seller acknowledges its obligations under this Agreement and specifically incorporates the Sellers commitments in this Agreement.~~

e. Seller shall be responsible for the Project Facilities ~~and the quality, rate of flow and pressure of the water in the Project Facilities prior to~~ ~~the~~ to the Point of Delivery and the quality, rate of flow and pressure of the water at the POD. ~~and all damages to persons or property before the water is delivered to the Point of Delivery, and any damages arising from any contamination of Seller's water supply.~~

~~16.~~ 17. **TERMINATION**:

a. Buyer may terminate this Agreement upon six (6) months written notice in the event of:

1. Repeated failure of Seller to meet its commitment to reserve capacity, or to meet the water delivery requirements in Section 6 hereof.

2. Revocation of Seller's authority to do business.

4/26/98 draft

3. Seller's breach of any of the Representations and Warranties in this Agreement. as determined by a court of law in the Commonwealth of Ky.

b. Seller may terminate this Agreement upon six (6) months written notice in the event of:

1. Repeated failure of Buyer to pay its invoices for water service on a timely basis.

2. Revocation of Buyer's authority to do business.

3. Buyer's breach of any of the Representations and Warranties. in this Agreement as det. by a court of law in the Commonwealth of Ky.

~~17.~~ 18. **MISCELLANEOUS PROVISIONS**:

a. This Agreement is subject to the approval of the Kentucky Public Service Commission ("PSC") and receipt by Buyer of a final, non-appealable Order from the PSC in the form of a Certificate of Convenience and Necessity for the facilities to be constructed pursuant to this Agreement.

b. This Agreement does not constitute a partnership, joint venture, agency or other relationship between Buyer and Seller and Buyer and Seller expressly state that they owe no fiduciary duties to one another and that the relationship is based upon Contract.

c. This Agreement is binding on the successors and assigns of the parties hereto.

d. Buyer and Seller agree that each of them shall have access to the books and records of the other, which are related to matters which are the subject of this Agreement, at such reasonable notice, except ~~as~~ those records that may be subject to a

4/26/98 draft

or that

~~and as~~ may be protected by the KY OPEN RECORDS LAW.

recognized privilege~~d or be~~ confidential, ~~To the extent that access relates to confidential records, the party requesting the access shall be entitled to access upon the execution of an agreement pledging the maintenance of confidentiality of the information being accessed.~~ Without ~~way of~~ limitation, ~~such information~~ shall include all costs of design, construction, financing, and costs of operation and maintenance of the facilities contemplated by this Agreement.

e. Seller agrees to carry, throughout the term of this Agreement, such liability and casualty insurance in a form and amount subject to the reasonable determination of the ~~Buyer.~~ Board of Water Works of The City of Louisville Seller shall, upon Buyer's request, show evidence of such insurance by a certificate which includes Buyer as ~~a loss payee or beneficiary~~ an additional insured under such insurance coverage.

f. Buyer reserves the right to develop and use other water supply sources and may obtain water from sources other than the Seller.

g. The parties agree to operate and maintain their respective facilities in an efficient and economical manner and in accordance with all applicable local, state and federal laws, regulations and performance standards.

h. This Agreement may be amended at any time by mutual agreement, in writing, of the parties.

i. Both parties agree to use their best efforts to obtain all regulatory and legal approvals required for the accomplishment of the terms of this Agreement.

j. Time is of the Essence under this Agreement.

1/26/98 draft

k. The parties acknowledge that the water to be purchased hereunder will be manufactured and resold in the regular course of business of Buyer and is therefore exempt from Kentucky sales and use tax. To evidence this exemption, Buyer will furnish Seller with a duly executed "Resale Certificate" or such other documentation as the parties deem appropriate.

IN WITNESS WHEREOF, the parties have set forth their hands the day and year first above written.

BUYER:	SELLER:
Kentucky-American Water Company	**Louisville Water Company**
By: _____	By : _____
Title: _____	Title: _____
Date: _____	Date: _____
Attest:_____	Attest:_____

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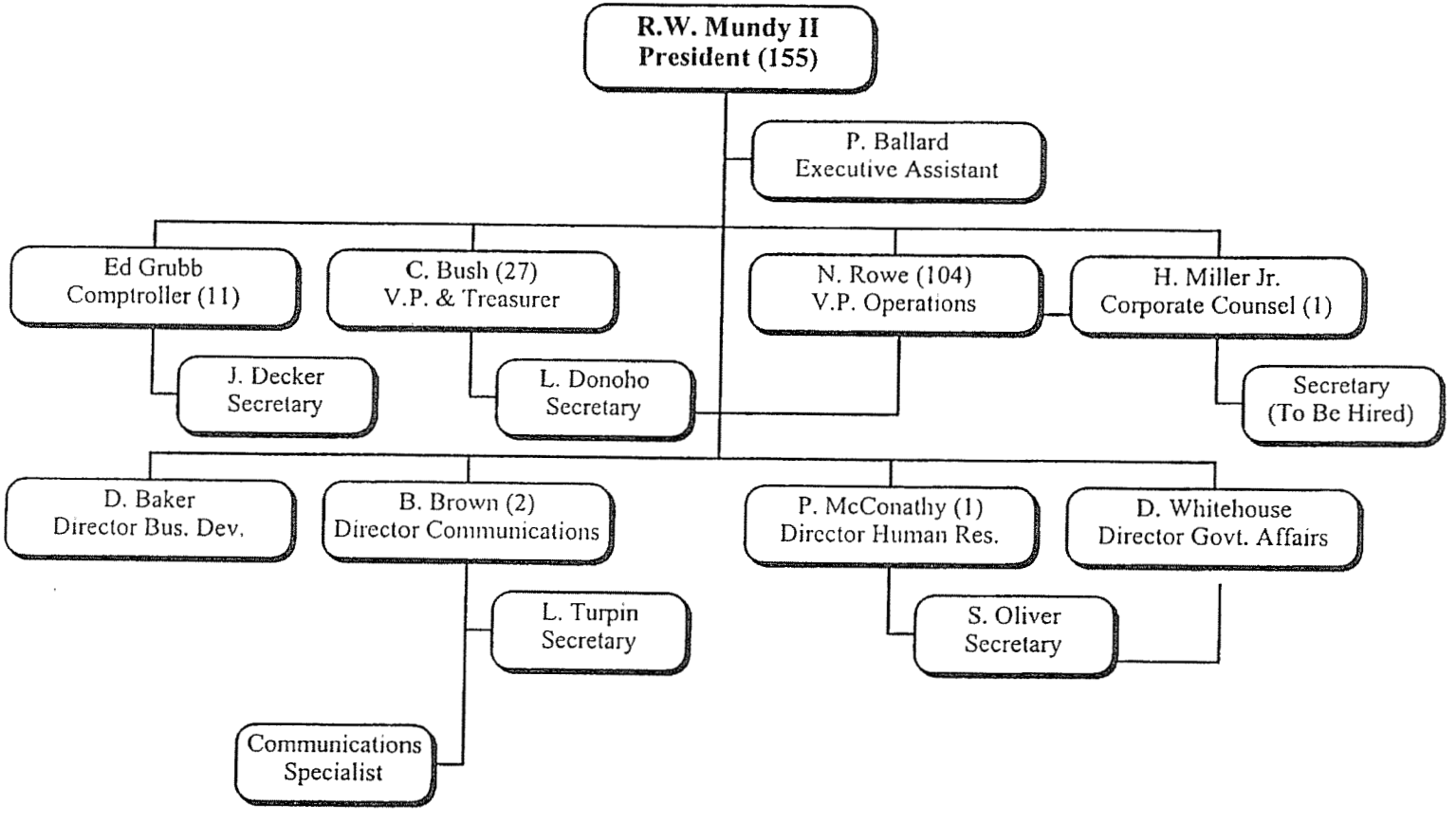
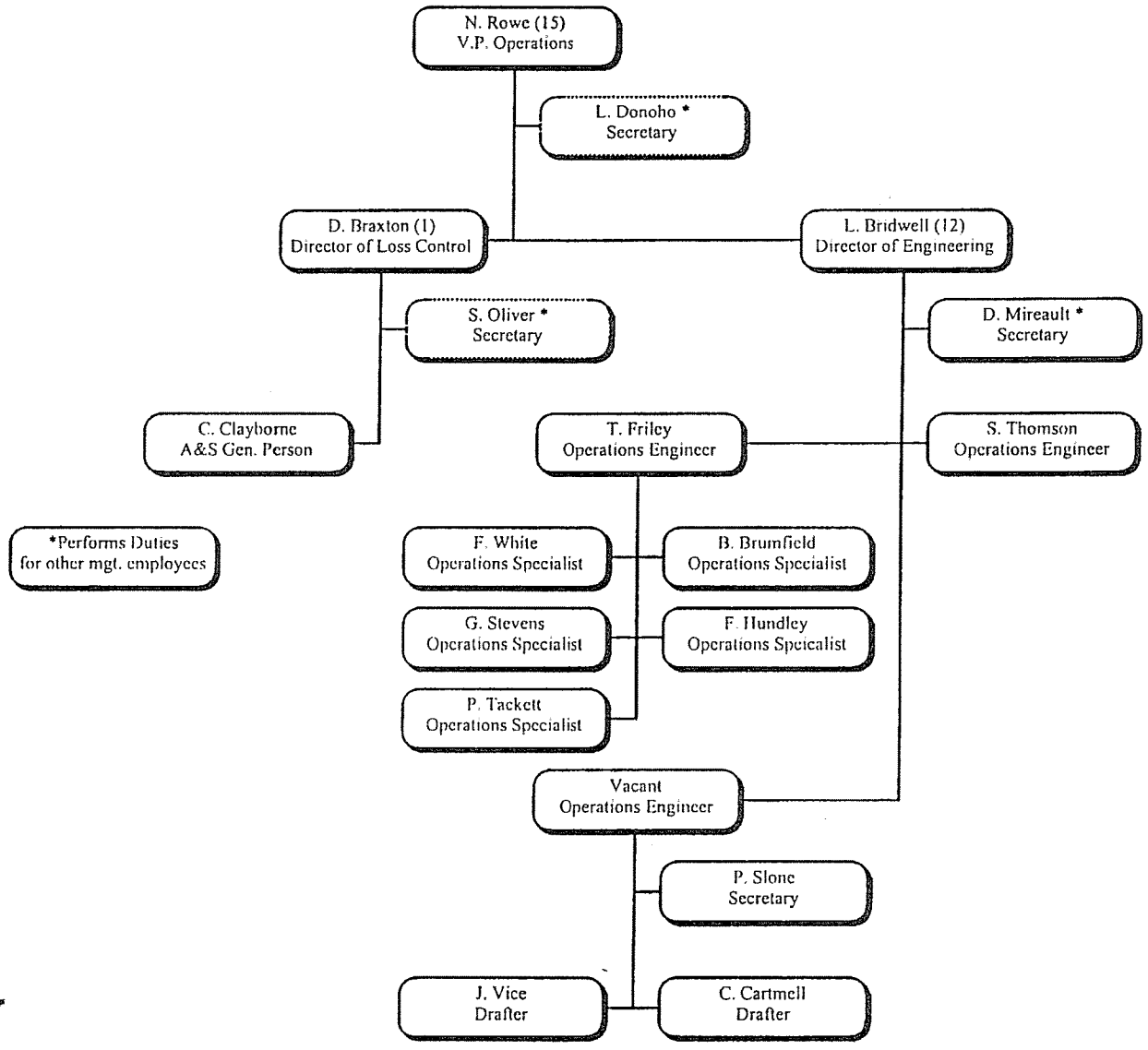
other issues pending:

- Bob would like to write into the Agreement, some discussion of exchange of planning documents (5 year plans) and our projection for reserved capacity requested. This would be non-binding. (LWI suggested that this be a separate letter agreement - Bob will draft)
- Bob suggested a formula or definition as to how "peak" is set.
- Bob also suggested that we think about circumstances under which a peak would be waived
- We discussed filing Agreement jointly with PSC as soon as it is signed.

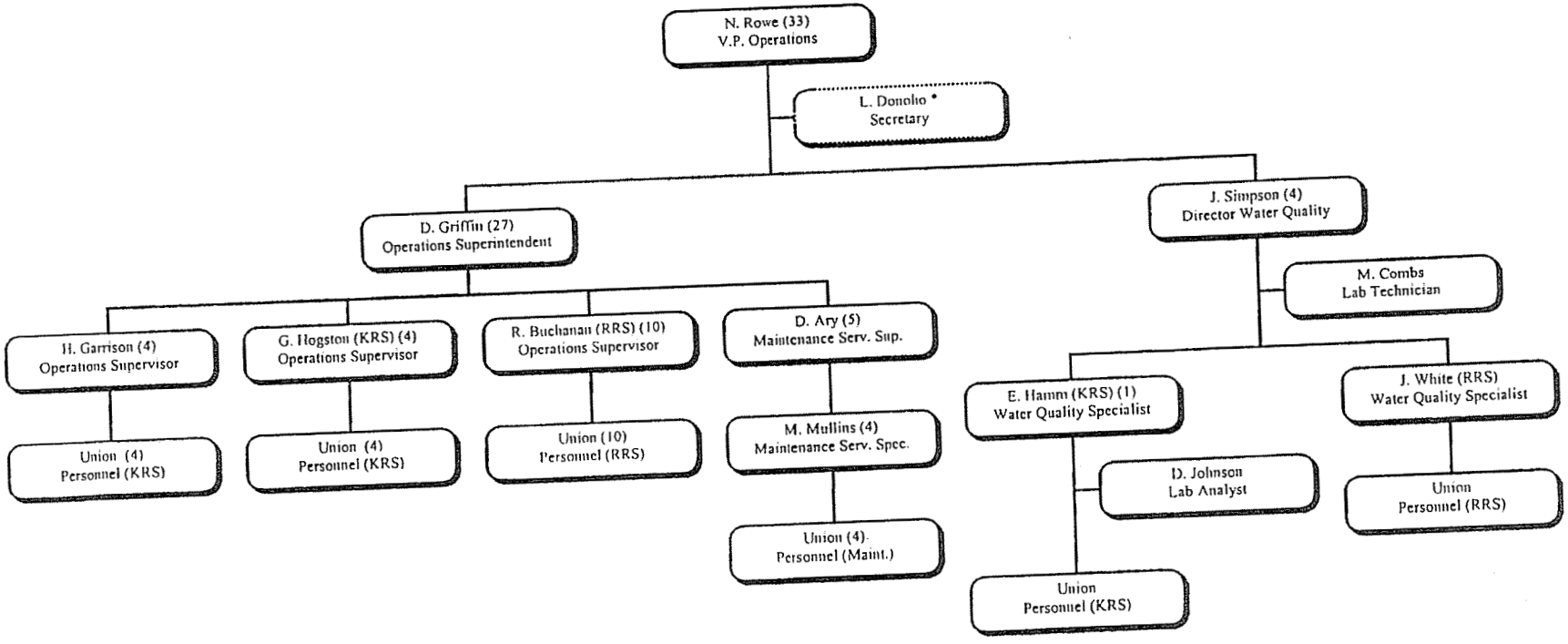
Kentucky-American Water Company



Kentucky-American Water Company
Loss Control/Engineering

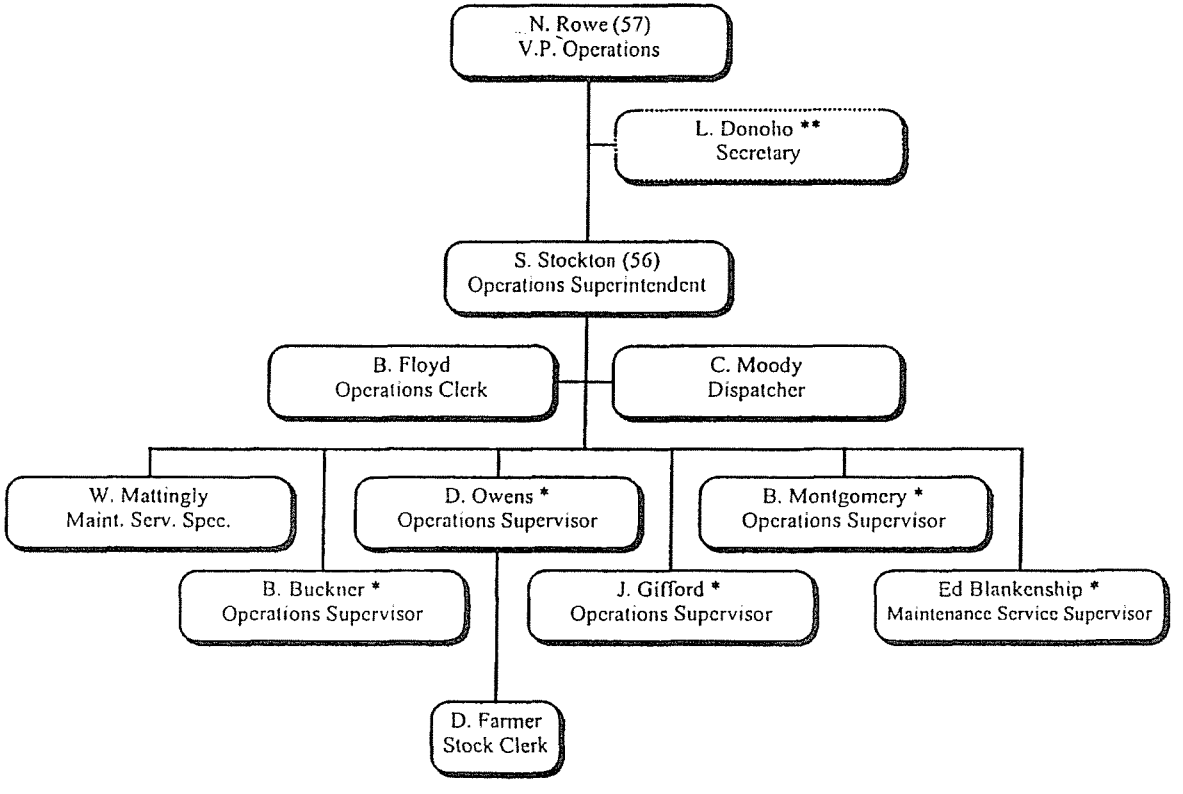


Kentucky-American Water Company
Production/Water Quality



*Performs duties for other management employees.

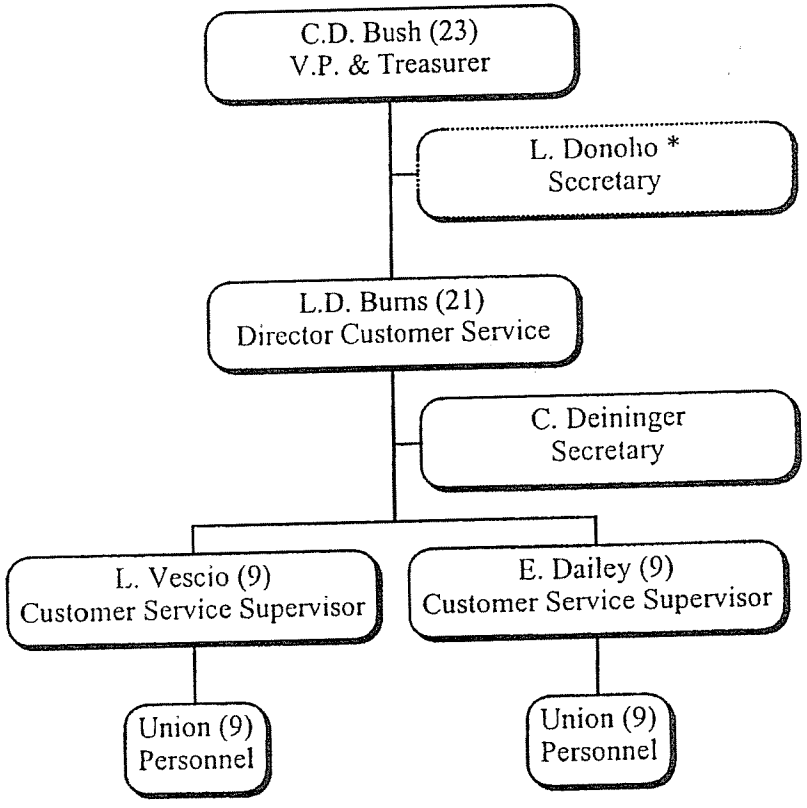
Kentucky-American Water Company
Distribution/Outside Commercial/Construction



*All Operations Supervisors and Maintenance Service Supervisor interchange responsibilities between operations and maintenance of distribution system, meter reading, and outside commercial service work. They supervise 47 Union employees.

** Performs duties for other management employees.

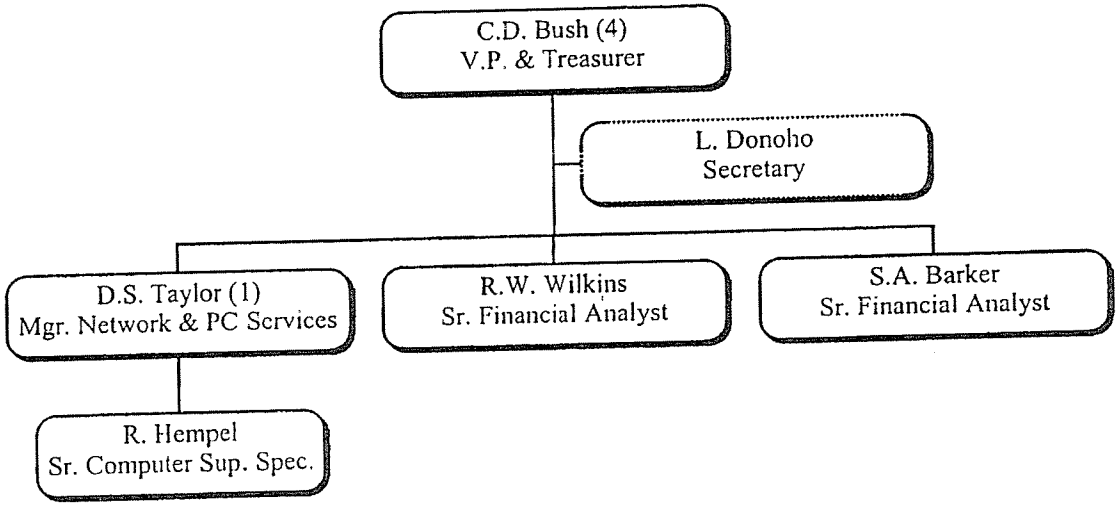
Kentucky-American Water Company
Customer Service



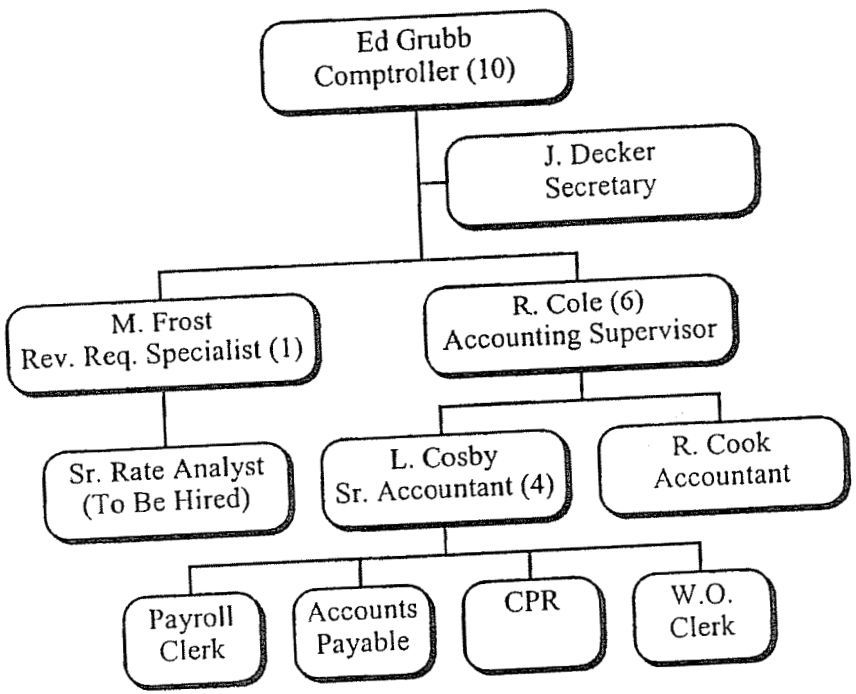
* Performs Duties for
Other Management Employees

Kentucky-American Water Company

Information Systems/Financial Planning



Kentucky-American Water Company
Accounting/Rates



WATER SUPPLY PROJECT
QUICK FACTS

What is the water supply deficit?

Kentucky-American has estimated that the water supply deficit facing our community now and in the future is a 9.7 billion gallon overall deficit, or a 23 million gallon a day deficit during a time of major drought.

What does the water supply deficit mean?

The water supply deficit means that, under the current river scenario, **our community will be without a drop of water for at least 53 days** when the drought-of-record recurs if a solution to the problem is not immediately implemented.

What criteria is used to determine this deficit?

Nationally accepted engineering criteria utilized by Kentucky-American Water Company and the University of Kentucky have relied on the drought-of-record, a 120-year drought, which last occurred in the 1930s in our region. The Central Kentucky area has experienced minor droughts such as the drought of 1988, a 22-year drought. **Kentucky-American has added 14,000 new customers since the drought of 1988.**

What is the best solution to our community's water needs?

Construction of a pipeline to purchase water originating from the Ohio River, treated through Louisville Water Company, and distributed via a 52.5-mile pipeline to Kentucky-American Water Company customers is the least cost, most feasible environmental solution.

Is this the only solution?

1. Kentucky-American has explored over 50 alternatives since first establishing that a deficit existed in 1992 through a Comprehensive Planning Study. After exploring numerous options, the pipeline is considered the most feasible, cost-effective solution that can be completed in a reasonable time frame.

2. Construction of the pipeline would eliminate the need to invest $39 million in treatment plant improvements that will be necessary in the near future as demands continue to rise. The upgrades in treatment plant capacity will not increase the water supply in the Kentucky River. The practical solution is the pipeline, which would guarantee a reliable water source *in the future and eliminate* the need to up treatment capacity.

3. The Kentucky River Authority contends that crest gates constructed on existing dams on the Kentucky River are a feasible solution.

Bluegrass Water Project
Water Quality

In 1998, Kentucky-American Water Company completed a detailed comparison of the Kentucky River and the Ohio River. Of the 146 parameters tested, only 15 were detected in either source. Three contaminants were found in the Ohio, but not the Kentucky. Three others were found in the Kentucky but not the Ohio. The concentrations of four of the other contaminants were comparable in both waters. Concentrations of four metals (cadmium, chromium, lead, and barium) and bromide were higher in the Kentucky.

Microbially, the Kentucky River is better than the Ohio. This requires additional filtration and disinfection time for Ohio River water.

In other parameters, the water is nearly the same. Total hardness of the finished water from the Louisville Water Company is 160. Total hardness of finished water from the Kentucky River produced by Kentucky-American Water Company is 158. Total alkalinity from each is 79.9 and 71, respectively.

Because of its size and use as a major industrial waterway, the Ohio River is more likely to be subject to spills. However, the Ohio River has an organization called the Ohio River Valley Sanitation Commission (ORSANCO) established in 1943 to monitor and improve the quality of water in the Ohio River. ORSANCO has a dozen strategic locations of gas chromatographs which operate continuously to monitor for organic chemicals.

Like Kentucky-American Water Company, the Louisville Water Company has consistently met or exceeded al federal drinking water standards, producing high quality water. The Louisville Water Company is experienced in constant monitoring and effective treatment to remove any contaminants. Kentucky-American Water Company will monitor the water prior to the point of entry into is distribution system.

If you are interested in learning more about the water issues facing our community, call Barbara Brown, Director – Communications, at 606-268-6332, or e-mail us at www.kawc.com.

PIPELINE STATISTICS

I. Construction Timeline:

A. Completion, 2001.
B. Preparation for Certificate of Convenience and Necessity at a cost of over $1,000,000. (easements, design, contractual arrangements with LWC, community meetings.)
C. Actual Construction: 18-24 months.

II. Construction Details:

A. Capacity of Pipe: 20-25 MGD.
B. Size of Pipeline: 36 inches.
C. Pipe Composition: Ductile Iron.
D. Cost of Pipeline: $47.9 million.
E. Construction Method: Directional drilling in environmentally sensitive areas; use of existing easements (gas line south of I-64, across Kentucky River, to Lexington via Woodford Co.)

III. Financial Details:

A. Tentative cost of water from Louisville Water Company: $1.11 per thousand gallons. (Under negotiation.)
B. Percent of increase to customer bill: 24.89 percent.
C. Increase per month for average residential customer: $4.62. (Average residential customer uses 5,750 gallons per month.)
D. Cost increase based on total consumption - commercial users who use more will pay more; projected residential increase based on current monthly average customer usage.
E. There is not a "no-cost" option.

IV. Louisville Water Company:

A. Water Source: Ohio River.
B. Reserve Capacity: 100 MGD.
C. Municipal System - John Huber, Chairman of the Board.

V. Statistics/Terms:

A. University of Kentucky Water Resources Research Institute: Overall baseline deficit 9.7 billion gallons.
B. Equates to: 23 million gallons per day (Lexington without water 53 days).
C. Drought of 1988: 22-year drought (added 14,000 customers).
D. Drought of Record: Occurred in 1930 (was a projected 120-year drought).
E. Conservation alone will <u>not</u> come close to solving deficit.

If you are interested in learning more about the water issues facing our community, call Barbara Brown, Director – Communications at 606-268-6332, or e-mail us at www.kawc.com.

Bluegrass Water Project Summary

I. Situation:

Economic growth including expansion of businesses, infrastructure, and educational institutions have created the need for an additional source of supply to supplement water withdrawals from the Kentucky River. As the largest inland city located away from a major source of supply, Lexington has faced difficult water decisions since the devastating drought of the 1930s. As a subsidiary of the largest investor-owned water utility in the nation, Kentucky-American provides water service to over 250,000 people in the Central Kentucky area. Since the drought of 1988, (a 22-year drought), our service area has expanded by 14,000 customers. Our responsibility to maintain a steady stream of high-quality, reliable water in the face of dwindling river levels has motivated the identification of the least-cost, most effective alternative to our community's water deficit. Feasibility studies initiated and reviewed by Kentucky-American clearly point to the need for an alternate source of supply to eliminate our water deficit.

II. Description:

Using integrated resource planning, Kentucky-American explored over 50 alternatives during the past ten years. New treatment facilities at other locations on the Kentucky River, along the Ohio River, groundwater supplies, area lakes, and dams have been extensively reviewed. The Kentucky River Basin Steering Committee, an independent committee formed by then Mayor Scotty Baesler of Lexington, also presented a study in 1989 stating a 7 billion gallon total deficit would exist during a drought of record. Kentucky-American Water Company's Least Cost/Comprehensive Planning Study completed in 1992, which covered demand projections, the planning process, source of supply issues, production and distribution, found a 13 million gallon a day deficit during a drought.

A recently complete study by the Kentucky Water Resources Research Institute has projected the deficit to be as much as 23-25 MGD on some days during a drought of record.

After reviewing all alternatives, a conclusion was drawn that the best solution was a pipeline to purchase treated water from Louisville Water Company to supplement our region's water deficit. The construction and operation of a 52.5-mile pipeline located between Jefferson and Fayette counties would alleviate our water supply deficit at a cost of $47.9 million. Kentucky-American Water Company will absorb all costs related to the construction of the pipeline. Based on the current number of customers, the average residential customer water bill would increase approximately $5 per month. The cost would decrease if other communities along the pipeline route joined in taking water from the pipeline. Benefits of the pipeline are many. Industrial, business, and residential customers would be purchasing an insurance policy to ensure our area of the water supply necessary for continued economic viability. Construction of the pipeline will further promote economic development and create synergy between the communities of Louisville and Lexington and others along the proposed route.

III. Public Service Commission Interaction:

General Rate Case No. 92-452 was filed on January 22, 1992. This rate case included the first significant expenses relating to our project. The PSC ordered work to cease on the project and ordered the opening of PSC Case. No. 93-434 on November 19, 1993, on the subject of the investigation of the sources of supply and future demand on a separate docket, as a result of the significant cost attributed to the water supply issue.

Preserving our River's Future through Environmental Solutions

I. OVERVIEW

Central Kentucky is at a crossroads in relation to its water supply. As one of the largest inland cities located away from a major source of water, Lexington has faced difficult water decisions since the devastating drought of 1930. The drought of 1930 forced community leaders to be progressive in their water decisions, and resulted in the laying of a pipeline to the Kentucky River with deliberate speed. Since 1930, the community has continued to grow and prosper. This economic growth and development has included the expansion of businesses, industries, infrastructure, and educational institutions, as well as a steady increase in new homes. The unique distinction of Central Kentucky as the horse capital of the world places an expanded need on water resources. Adequate fire protection to ensure the safety of the thoroughbred horses and meeting the maintenance requirements inherent in the horse industry are critical components to the growing water needs in our region.

Although the continued growth has been the key to a unique high quality of life, it does not come without cost. Growth has created the need for expanded services, including an additional raw water supply to supplement existing water sources. As concluded in 1989 by the Kentucky River Basin Steering Committee, by follow-up engineering reports conducted by the region's major water supplier, Kentucky-American Water Company, and recently by the University of Kentucky Water Resources Institute, the Central Kentucky area faces a dramatic water supply deficit when the drought-of-record recurs. This water shortage will extend for a period of six months. Droughts of lesser degree will also adversely affect our area, creating concern for the health and safety of our customers, the ability to supply fire protection, and the continued economic viability and growth of the area.

Quoting from the Public Service Commission Order received March 14, 1995:
"The Commission finds that the range of demand projections presented by Kentucky-American and the intervenors is within the realm of reasonableness. Kentucky-American has used reputable sources for data and nationally accepted methodologies in developing its demand projections. Over the years, Kentucky-American has made numerous revisions to its methodology for projecting water demand, resulting in a state-of-the-art dynamic process."
The PSC Order further states:
"The Commission notes that for approximately the past eight years, Kentucky-American has not had sufficient capacity to meet its customers unrestricted demand during a drought of

early as 1967. In 1969, intense public concern forced then Governor Julian Carroll of Kentucky to evaluate the project and support an alternate dam site. The original proposed site was determined not to be in the overall public interest of the Commonwealth of Kentucky. Of utmost concern was the preservation of the Red River Gorge scenic area. Discussions ensued and continued over the next several years until a decision was reached in 1975 when the Governor of Kentucky withdrew state support of the project. Consequently, no funds were appropriated and the project was reclassified from "active" to "inactive." Environmentalists' grave concern for the ecological balance of the region if a dam was built in the Red River Gorge area has proven valid. Not much has changed since the mid 70s, when the government and the environmentalists were in unison regarding the decision to withdraw support of the Red River Dam project. Twenty years later, the fallout from the environmental community continues to reverberate. Limitless time and expense can be dedicated to revisiting the damming issue, however, the reality continues that damming in any form is not the best alternative as seen by many diverse opponents to such a proposal.

IV. THE ENVIRONMENTAL SOLUTION

The environmental solution to protect our water source (the Kentucky River) and provide Central Kentucky with an adequate water supply is the development of a pipeline to the Ohio River. Water quality issues regarding the Ohio River can be answered by reviewing studies conducted indicating that of the 146 parameters tested, the Kentucky River and the Ohio River were virtually the same. The public is demanding elimination of pollution and the efficient use of natural resources in protection of the environment. This watchful environmental climate has been beneficial to the water quality of the Ohio River and contributed to its high marks on the issue of health and safety. The Ohio River continues to be a major supplier of water for the State of Kentucky with over 1.7 million of our citizens using Ohio River water to meet all of their daily water needs. In 1994, Kentuckians withdrew 176.8 million gallons per day of water from the Ohio River. The Ohio River is a limitless source of water, providing communities existing along the banks of the Ohio with a continual source of supply. The Ohio River Basin Sanitation Commission is a watchdog organization that carefully monitors the Ohio River. The Kentucky River is not monitored to the level of the Ohio and does not presently have such a sophisticated protection system.

V. ENVIRONMENTAL IMPACT

The construction of the pipeline and booster stations over 55 miles would contribute a much needed water supply and cause no environmental impact to the region. The pipeline will lay entirely underground in private easements, primarily within an existing gas pipeline right-of-way. Construction of the pipeline will include cleanup, re-grading, and vegetation re-seeding as the pipe is installed. Revolutionary techniques such as directional drilling may be used to lessen the impact of laying the pipe underground, and is being considered for crossing of the Kentucky River so as not to disturb the stream flow. The Central Kentucky region is not the first to consider a transmission pipeline to maintain the community's water needs. Similar pipelines are successfully meeting the needs of providing water service to people all over the United States, such as the Metropolitan Water District serving a large part of Southern California. Hundreds of miles of pipeline provide communities in the Los Angeles region with water.

F

Kentucky-American Water Company

2300 Richmond Road • Lexington, Kentucky 40502
(606) 268-6320 • Fax (606) 268-6327

Roy W. Mundy II
President

February 20, 1998

Mr. John Huber, President
Louisville Water Company
435 South Third Street
Louisville, Kentucky 40202

RE: Kentucky-American Water Company
Louisville Water Company Agreement

Dear John:

The purpose of this letter is to memorialize an agreement between Kentucky-American Water Company ("Kentucky-American") and Louisville Water Company with respect to potential reimbursement by Kentucky-American of costs incurred by Louisville Water Company in the design of facilities necessary to supply potable water for Kentucky-American's Bluegrass Water Supply Project.

We are in the final stages of completing a proposed agreement between Kentucky-American and Louisville Water Company wherein Louisville Water Company will supply potable water to Kentucky-American at a point near I-60 just east of the intersection of the Jefferson County - Shelby County line. In order to supply this volume of water it will be necessary for Louisville Water Company to design facilities that will be necessary for delivery of potable water in sufficient quantity and quality to that point.

We anticipate that by April 1, 1998, Kentucky-American will enter into a Water Purchase Agreement with Louisville Water Company and that Kentucky-American will have selected a contractor for the design of its facilities which are a part of the Bluegrass Water Supply Project. It will be necessary for the Water Purchase Agreement to contain a provision that it will be binding only when Kentucky-American has obtained a final, non-appealable Order from the Public Service Commission in the form of a Certificate of Convenience and Necessity authorizing the construction of the Bluegrass Water Supply Pipeline.

As a part of the application for the Certificate of Convenience and Necessity, Kentucky-American is required to include a description of the manner in which the facilities will be constructed. Kentucky-American would be unable to meet this regulatory requirement if Louisville Water Company was not willing to design its necessary facilities before the application is made to the Public Service Commission. Therefore, we would ask that the Louisville Water Company design be completed by October 1, 1998 as will be noted in the Water Purchase Agreement.

Copies to: G. Heitzman, L. Hollis, S. Hubbs, B. Miller, K. Teasley
2/24/98

We understand that the design of your facilities would not have value to Louisville Water Company in the absence of the Water Purchase Agreement becoming a binding contract. We therefore agree, in the event the Water Purchase Agreement does not become binding, to reimburse Louisville Water Company for external costs incurred by it in the design of its facilities and for the reasonable internal costs to be incurred.

We hope that Louisville Water Company will use Kentucky-American's consultant for the design of its facilities. We believe efficiencies can be achieved by the utilization of the same design consultant; however, this agreement is not contingent upon Louisville Water using our selected consultant.

Prior to the beginning of the expenditure of money, we need an estimate of the external and internal costs to be incurred by Louisville Water Company. Any change in scope of the design, from that contemplated in the Water Purchase Agreement, which causes a deviation in the estimate from either external or internal costs must be approved by Kentucky-American in advance, which approval shall not unreasonably be withheld. Kentucky-American will provide a member of our company to serve on the design/review team to insure the above. I assume you would have no objection to our internal auditors verifying the compilation of your internal costs.

In the rare event Kentucky-American's design contractor is unacceptable to Louisville Water Company, Kentucky-American must approve your selection of a design contractor for your facilities, and that approval shall not be unreasonably withheld.

I want to personally thank you for the cooperation which has existed between the representatives of Louisville Water Company and Kentucky-American. Any questions, concerns or issues about our future relationship should be directed to Herb Miller (legal), Coleman Bush (finance), Nick Rowe (operations), or Linda Bridwell (engineering). I envision that you and I will have a fairly constant exchange of information and ideas, and please feel free to call me personally on any issue at any time.

If this Agreement meets with your approval, I would appreciate receiving your estimate of the external and internal costs to be incurred by Louisville Water Company. Upon our approval thereof, I will ask you by additional correspondence to sign a copy of this letter which shall then be considered as the agreement between Kentucky-American and Louisville Water Company as detailed herein.

On behalf of Kentucky-American's customers, I look forward to a long-term, mutually satisfactory relationship.

Very truly yours,

Roy W. Mundy II
President

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DRAFT – FOR DISCUSSION PURPOSES ONLY

Kentucky American Water Company/Louisville Water Company Meeting Minutes for February 6, 1998

The meeting started at 10:00 am in the Board Room. The meeting format was changed from face-to-face to a conference call due to the 20 inches of snow. In attendance from the LWC were Greg Heitzman, Karen Willis, and Alan Arbuckle. In attendance from KAWC were Linda Bridwell, Dave Reeves, and Mick ?. Agenda was faxed to the LWC location and the meeting agenda started at 10:30 am, see attached. The meeting discussion deviated in order from the agenda and is presented below in the order discussed.

Request for Proposal

The draft contract from 1992 is being reworked and will be forwarded to LWC for review within a few weeks. Target for completion of the RFP is April 1, 1998. The KAWC will develop the RFP for that section. The design consultant selected will be for that section of the project to be owned by the KAWC. The primary goal of the RFP is to provide a cost-effective means of building the project. Upon completion of the RFP, it will be faxed to the LWC for review. LWC will respond by e-mail to Dave Reeves at DREVES@AMWATER.COM. Response should be returned to the KAWC by March 15, 1998.

The LWC may elect to negotiate with the KAWC consultant, or select another consultant. A short list of consultants has been selected by the KAWC. A fax of those consultants will be sent to the LWC for review.

A letter of understanding between John Huber and Roy Mundy is required to start the accumulation of design related expenses. This letter will include the intent of the KAWC and the understanding of financial responsibilities.

Coordination of Design Work

Contracts for the LWC are Bob Miller for legal and financial issues, and Greg Heitzman/Karen Willis for engineering issues. Contact for financial issues is Coleman Bush at the KAWC.

US 60 Route Feasibility

The proposed route follows US60 from English Station Road through Eastwood, then along a railroad line into Shelby County. LWC agreed to general alignment, however there is a trade-off between the number of easements and the necessity for a pumping

facility. The gas transmission main route requires a pump station but will have less easements. The US60 route will have more easements due to the commercial nature of that route.

Hydraulics

The grade available at the English Station Reservoir will be assumed no greater than 830 feet. The primary water main route will be US60 corridor and the gas transmission main route a secondary choice. The critical high elevation is 770 feet and is located near the entrance to the Lake Forest development entrance. Estimated static pressure may be 20 psi at this critical elevation site.

A storage facility located at the Jefferson/Shelby County boundary and US60 will not be feasible to construct. The elevation at this site is approximately 650 feet and will require the tank to be more than 200 feet in height. The intent of a storage facility at this location is to provide a buffer between the operation of LWC and KAWC systems.

The topic of surge control was discussed. The KAWC's concern is for surge control during an unscheduled shut down such as a power failure. The KAWC is to include surge analysis for the LWC section of this project.

Schedule of Completion of Work

The following timeline was suggested by the KAWC:

- February 13, 1998 (about one week from today) – discussion of LWC hydraulic evaluation and LWC review/comment of RFP
- February 17, 1998 – RFP sent to short list of consultants
- March 19, 1998 – proposals received by the KAWC
- April 1, 1998 – award contract to successful consultant
- October 1, 1998 – completion of design work
- December 1, 1998 – file to the PSC for Certificate of Convenience and Necessity
- January 15, 1999 – advertisement period begins
- April 1, 1999 – construction bids received
- June 1, 1999 – PSC hearing conducted
- September 1 to December 1, 1999 – construction starts
- March to June 2001 – facilities placed in service

The LWC will not be required to bid before the KAWC bid. LWC will provide a not-to-exceed value for the capital costs and rate structure.

Coordination of Design Work

Purpose of coordination is to provide status of design work to the KWAC and the same convenience to the LWC. The KAWC also has the need to review scope changed on the

LWc section before the change is adopted. LWC agrees with this provision. The maintenance of project records should be performed by both companies with the understanding of an open record policy.

Water Purchase Contract Issues

The location of the metering point is considered ideal if pumping facilities, storage facilities and meter are located at the same site. Having the meter located at the point of pumping will be acceptable. The tentative location of the pump station is along I-64 approximately 2000 feet into Shelby County. Objective of the pump station location is to maximize recovery through the PPSC and for pump station operation. LWC prefers to own to the first KAWC owned pump station.

Pump Station Controls

The full set of pump station controls is required by the LWC to be available for telemetry. The data will be sent to the English Station Reservoir where existing signals are currently sent to the BEPWTP and the CHWTP control rooms.

Water Quality

The KAWC will be treating for corrosion control and free chlorine levels. The corrosion inhibitor may be zinc-based. KAWC requested more information on chlorine residual. Concern is for the free ammonia concentration and potential nitrification concerns. KAWC wants to provide a 2.0-ppm level of combined chlorine to the City of Lexington. The request will be forwarded and data should be provided by the LWC on table included with the request. Minimum and maximum parameters will be provided by the KAWC for this request for additional information. The contract language will include a statement that LWC supply will meet or exceed all regulations of the Kentucky Division of Water.

Other Issues

The topic produced one issue, being the selection of pipeline and valve materials. The KAWC RFP includes references for of three different types of pipe, steel, PCCP and DI. The selection of materials will be governed by the criteria of each company for the section to be owned by that company.

The meeting adjourned at 11:40 am.

LOUISVILLE WATER COMPANY

550 SOUTH THIRD STREET • LOUISVILLE, KENTUCKY 40202

TEL 502-569-3600 FAX 502-569-0815

June 16, 1999

Ms. Linda C. Bridwell, P.E.
Director of Engineering
Kentucky-American Water Company
2300 Richmond Road
Lexington, Kentucky 40502

RE: Bluegrass Water Project – Time Extension for Consultant Completion

Dear Ms. Bridwell:

This letter is a follow-up to our telephone conversation of June 3rd, subject as above, in which I explained that a time extension request has been received from PDR Engineers, Inc. for completion of their design services for the Bluegrass Water Supply Project.

PDR has formalized their request in letter form, a copy of which is attached. Specifically, PDR has requested a forty-five (45) calendar day extension to the project timeline for the project deliverables. The following table outlines the current required completion dates for key deliverables, as well as the dates that would be in effect if you concur with the extension.

	Current Completion Date	Requested Completion Date
• 100% stream x-ing details	1 April 99	1 July 99
• 90% design for pump station 90% tank plans	1 May 99	15 July 99
• 100% plans & specs for: -pipeline -pumping station -elevated tank	1 June 99	16 Aug 99
• Final project estimate	1 July 99	16 Aug 99

Please advise at your earliest convenience Kentucky American's position on whether this request is acceptable.

Sincerely,

James H. Brammell, P.E.
Business System Owner, Facility Design,
Construction & Maintenance

CC: Greg Heitzman ✓
Bill Rhodes

PDR Engineers, Inc.

June 16, 1999

Mr. James H. Brammell. P.E.
Business System Owner, Facility Design
Louisville Water Company
550 South Third Street
Louisville, Kentucky 40202

Re: Bluegrass Water Supply Project

Dear Mr. Brammell:

PDR Engineers, Inc. would like to request a time extension to the current contract for delivering the pipeline, pump station and water tank plans and specifications for the Bluegrass Water Supply Project.

PDR Engineers, Inc. is requesting a 45-calendar day extension to the project timeline for the deliverables for the project based on the revisions requested by the Louisville Water Company. Based on the 45-calendar day request the following schedule is requested:

Revised Completion Dates	Deliverables
July 1, 1999	100% Stream Crossing Details
July 15, 1999	90% Design Plans for Pumping Station 90% design Plans for Water Tank
August 16, 1999	100% Design Plans and Specifications for: Pipeline Pumping Station Elevated Tank
August 16, 1999	Final Cost Estimate

Revisions in the alignment of the waterline and subsequent changes in the pump station locations have caused delay in the production of plans and specifications. Many of the revisions in alignment which were requested by property owners and the Louisville Water Company have been incorporated into the plans to facilitate the future acquisition of easements along the alignment.

PDR has also been requested by the Louisville Water Company to investigate the possibility of a right-of-way crossing at KY 1848 and to investigate any potential conflicts with the future roadway interchanges at I-64 and I-264 and English Station Road.

Attached is a list of the revisions requested during the current contract period requiring additional time to complete the engineering.

We feel this request is reasonable request for additional time while still meeting the delivery schedule to Kentucky American Water Company.

Thank you for your consideration of this matter.

Sincerely,

Mark S. Tate, P.E.
Project Manager

cc: Hans Probst, P.E.
Bill Rhodes, P.E.

file: Bluegrass Water Supply

LOUISVILLE WATER COMPANY

550 SOUTH THIRD STREET • LOUISVILLE, KENTUCKY 40202

TEL 502-569-3600 FAX 502-569-0815

January 27, 1999

Ms. Linda Bridwell, P.E.
Kentucky-American Water Company
2300 Richmond Road
Lexington, Kentucky 40502

Re: Bluegrass Water Supply Project

Dear Ms. Bridwell:

Thank you for your letter of January 20, 1999. Mr. Jim Brammell, Mr. Bill Rhodes, and I met with PDR Engineers (Hans Probst, Ray Ihlenberg, and Mark Tate) on January 21 to review the progress of the design of Louisville Water Company's portion of the Bluegrass Pipeline. I was pleased to see the design is well underway and on schedule to meet the target March deadline. I have provided the following response to the issues identified in your letter.

Item No. 1 - I understand your schedule has been revised to accommodate a route change and you have extended our design completion an additional 120 days from March 7 to July 7, 1999. With this extension, we will advise PDR Engineers that their design completion and final cost estimate have been extended as follows:

- 90 percent design plans of pipeline route, including stream crossing details and permit preparation by 4/1/99 (to meet Corps of Engineers permit date)
- 90 percent design plans of pump station and tank by May 1, 1999
- final design plans and specifications for pipe, pump station, and tank by June 1, 1999
- final project estimate by July 1, 1999

This revised schedule should accommodate PDR's coordination efforts with Gannett-Flemming.

Item No. 2 - I understand you will soon complete your purchase of a 7.34-acre tract in Shelby County. Louisville Water Company desires to own the property where the tank and pump station will be located. I will direct PDR to proceed with the final site plan for location of the tank and master meter assembly and preparation of a property plat and property description. The layout will consider construction of a future tank should operations require such storage. I will move forward with approval by the Board of Water Works to purchase five acres from Kentucky American for a price of $225,000. I will request Mr. Joe Helm to draft a property sale agreement and coordinate this transaction with Mr. Herb Miller.

Item No. 3 - Louisville Water Company authorized PDR Engineers to use Dunaway Engineers as a subcontractor for the route survey work on the pipeline. After review of their cost proposal, we believe the price is competitive. Further, with the high level of construction activity in the area, surveying services are at a premium. To meet our contract commitment of 120 days, we authorized PDR to proceed with Dunaway. To date they have provided timely, reliable service. This is evident from the substantial progress made on the pipeline design to date by PDR. Since we are under contract, it will be difficult to get a competitive price from a competing firm. We will request that PDR provide us documentation supporting the survey service costs. Upon completion of the project design, I would suggest we can compare the cost of route survey on Louisville Water Company's design portion to that of Kentucky American's design portion and apply a percentage of total cost and length to resolve this issue. In addition, we will prepare a summary of similar Louisville Water Company transmission main projects comparing the cost of survey services as a percent of total design services. As indicated in the past, we are willing to pay for any cost differential that can be demonstrated.

Item No. 4 - Enclosed is PDR's Route Evaluation report. From this analysis, an alignment along the north side of Interstate 64 has been selected. The Interstate crossing will be just west of Highway 55 to the delivery point. This route was selected from a joint review with PDR and Louisville Water Company staff and considered to be the most cost effective route, considering cost, constructability, and environmental impact. I believe it is safe for you to notify the Shelby County property owners south of Interstate 64 from the Jefferson County line to Highway 55 that an alternate route has been selected. Considering the route change, I request your authorization for Louisville Water Company to begin contacting property owners along the new pipeline route, begin preparing easement plats and descriptions, and initiate easement negotiations. I suggest we set a meeting in February to review our easement acquisition process and the cost parameters for easement purchase. Field work during evaluation of the final route has stirred property owner interest, and timely easement acquisition will both expedite the project and reduce easement costs.

Since we are now under design, please address all design correspondence to Mr. Jim Brammell, Manager of Facility Design and Construction, with a copy to Mr. Bill Rhodes, our Project Manager for the Bluegrass Pipeline, and me. I will continue to be your primary contact for any contract issues regarding the Water Supply Agreement.

Finally, I will ask my secretary, Gale Harper, to arrange a meeting in mid February to allow our respective staffs to meet and review progress of the project design. We can also review our easement procurement process at this meeting.

Please let me know if you need any further information.

Sincerely,

Gregory C. Heitzman, P.E.
Vice President-Chief Engineer

/gh

cc: John Huber, Jim Brammell, Bill Rhodes - Louisville Water Company
Joe Helm - Brown, Todd & Heyburn
Hans Probst, Mark Tate - PDR Engineers

C:\data\msoffice\winword\gch\bridwell Jan99

Kentucky-American Water Company

2300 Richmond Road • Lexington, Kentucky 40502 • (606) 269-2386 • Fax (606) 268-6327

Linda C. Bridwell, P.E.
Director of Engineering

January 20, 1999

Mr. Greg Heitzman, P.E.
Vice President
Louisville Water Company
550 South Third Street
Louisville, Kentucky 40202

RE: ***Bluegrass Water Project Design Services***

Dear Greg:

I understand that design is well underway and I wanted to follow up with a few items:

Item No. 1

Due to the change in our route, we have significantly set back our design schedule. We are on a schedule where we will need to confirm with you the tank location, meter vault location and tank overflow elevation by March 1, 1999. Additionally, we are now anticipating filing an Application for a Section 404 permit and a Section 10 permit with the Army Corps of Engineers April 1, 1999. This means that route selection and stream crossing details must be completed by that time. We do not, however, anticipate completing full project design until September 7, 1999.

I understand that PDR/Gannett Fleming is required to complete design by March 7, 1999 based on the requirements in the water purchase contract. Kentucky-American Water Company (KAWC) is agreeable to relaxing that requirement to allow an additional 120 calendar days for design, as long as the information requested above can be completed within the time scheduled. This would allow design completion by July 7, 1999.

Item No. 2

KAWC is in the process of completing negotiations for the purchase of 7.34 acres in Shelby County for the metering point and booster station site, but we will only be utilizing two acres. The negotiated price of this site is $45,000 per acre. It is my understanding the Louisville Water Company (LWC) may be interested in utilizing part of this site for its additional facilities, including the tank. I would appreciate that if you are interested, you provide me with the amount of land needed and any utilities or special requirements for your site. I understand that you already have a copy of the site layout from PDR. We can begin to negotiate a purchase or leasing agreement with the LWC.

Item No. 3

Your November 4, 1998 letter indicated that you would forward information documenting competitive pricing for Dunaway as the surveying subcontractor, and that LWC would be responsible for any expenses above competitive pricing. As it may not be reasonable to solicit work on this project from other firms, if you have information regarding comparable projects, it would be helpful. I included the $540,000 estimate for KAWC's portion of LWC's design cost in recent information I sent to our Board of Directors, which was based on the proposal with Dunaway. I have already received a few questions about the estimate, and would like to finalize this issue, if possible.

Item No. 4

Because we were still in contract negotiations, last summer KAWC contacted all of the property owners near the gas main from the Shelby/Jefferson County line. I understand now that you may be looking at a route North of Interstate 64. We have obviously gotten a few calls back from property owners between the county line and the metering point who expected us to be out surveying. I would appreciate your input on how to direct them.

Finally, as I indicated to you, I will continue to be the point of contact for KAWC on all design and technical-related issues. You indicated in a previous conversation, however, that Jim Brammell will oversee the design. If you would prefer to have him, or someone else, be my point of contact please let me know.

Please let me know if there are any questions or concerns. I am excited about this project moving forward.

Sincerely,

Linda C. Bridwell

Linda C. Bridwell, P.E
Director of Engineering

LCB/dm

c: Roy Mundy, KAWC
Nick Rowe, KAWC
Herb Miller, KAWC
Jim Brammell, LWC
John Huber, LWC
Bill Rhodes, LWC

Louisville Water Company

Memo

To: John Huber, Barbara Crow

From: Jim Brammell

CC: Greg Heitzman

Date: 05/05/99

Re: Bluegrass Water Supply Project – Letter to Property Owners

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Please review the attached letter and fact sheet and provide any comments to me as soon as possible. This letter is intended to be sent to all property owners along our portion of the alignment.

Thank you.

LOUISVILLE WATER COMPANY

550 SOUTH THIRD STREET • LOUISVILLE, KENTUCKY 40202

TEL 502-569-3600 FAX 502-569-0815

May 6, 1999

Mr./Ms. _____

_____

Louisville, Kentucky 4xxxx

RE: ~~Louisville Water Company~~ Bluegrass water Supply Project ~~Pipeline Design Activities~~

Dear _____:

As you are probably aware, consideration is being given to construction of a water pipeline from Louisville to Lexington. In an effort to help you better understand the project and the Louisville Water Company's (LWC's) role in the project, we have prepared the attached fact sheet ~~for your use~~.

~~As stated on the fact sheet~~, design work for the project has been on-going for several months. Because much of our design work requires field investigations, you may have been contacted in the past by our staff, or our design consultant, PDR Engineers, for permission to enter upon your property.

At this time we have requested PDR Engineers to direct their ~~sub~~-consultants (name) to conduct environmental and cultural resources investigations along the project alignment. To accomplish this work we are seeking your permission to enter your property. The investigation to be conducted will be limited generally to walking across your property and ~~perhaps a few~~ shovel tests, dug by hand. The consultants will be required to carry identification while on your property, and they will take precautions to leave the property as they found it and to minimize any disruption to you.

Please phone Mr. Mark S. Tate, PE of PDR Engineers at (502) 584-5555 to provide your verbal approval and any specific comments on the care of your property.

In the meantime, should you have any general project questions please direct them to me at the address shown above or by telephone at (502) 569-0880.

Sincerely,

James H. Brammell, PE
Business System Owner, Facility Design
Construction & Maintenance

If we do not hear from you we will contact you by phone or in person to make an appointment to

FACT SHEET

BLUEGRASS WATER SUPPLY PROJECT

LOUISVILLE WATER COMPANY COMPONENT

Prepared: May 5, 1999

OVERVIEW OF PROJECT:

The Louisville Water Company (LWC) and Kentucky American Water Company (KAWC) are in the process of designing water supply facilities that may be used to help KAWC secure a continuing, dependable source of water to meet the present and future needs of their customers. The project is known as the Bluegrass Water Supply Project.

SCOPE OF PROJECT:

LWC is designing and estimating costs for a pipeline from a point near US Highway 60 and English Station Road in Jefferson County to a location in the vicinity of I-64 and Highway 55 in Shelby County. Additional LWC facilities are expected to include a water pumping station near the intersection of I-64 and the Snyder Freeway (I-265) in Jefferson County, and an elevated water tank near Highway 55.

KAWC is planning and designing facilities that will connect its existing water system in Lexington to the proposed delivery point in Shelby County. Please see the attached map.

The LWC has retained PDR Engineers, Inc. to design its portion of the project.

Project Schedule:

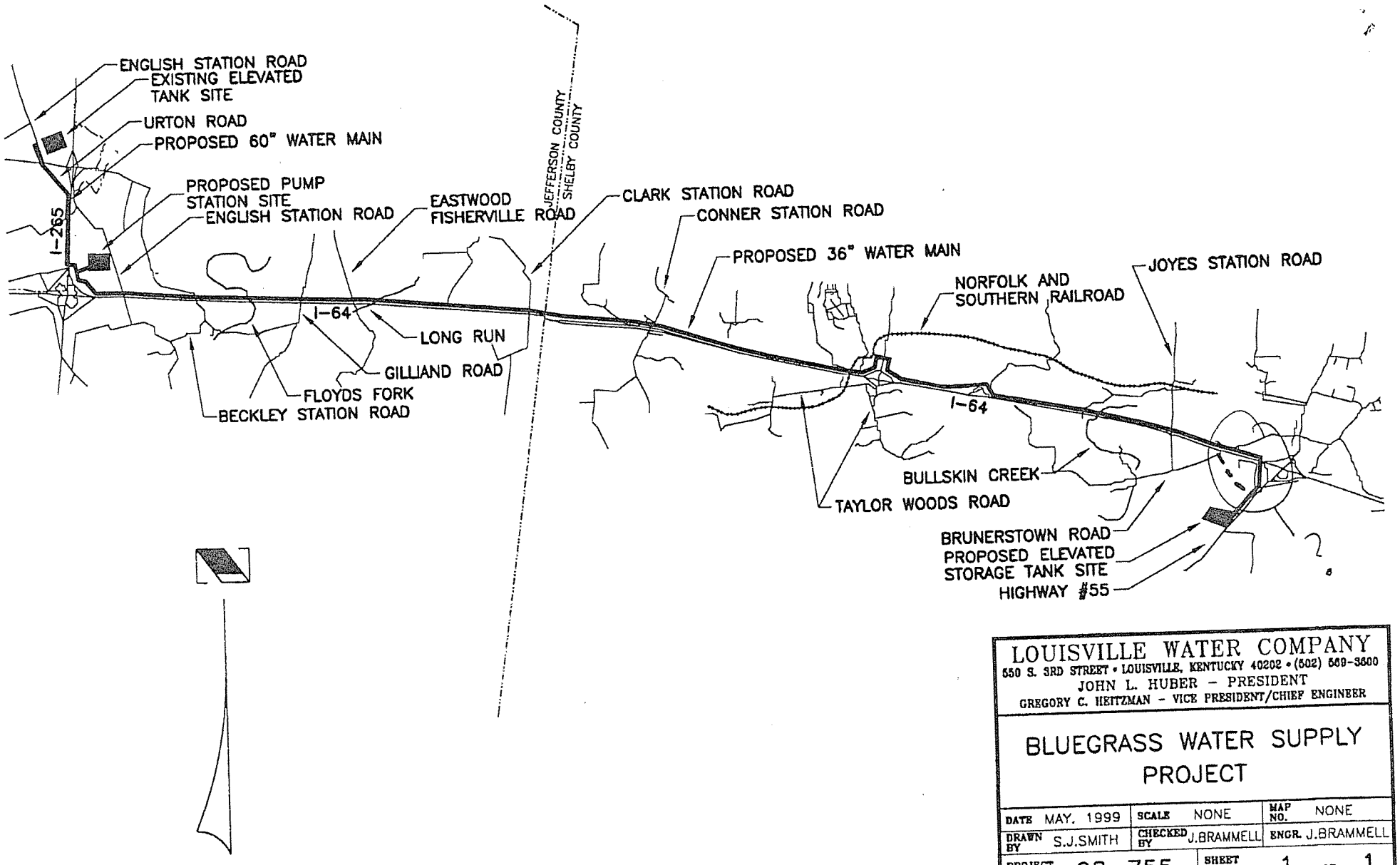
LWC's design portion of the project began in late 1998 and is expected to be completed in the summer of 1999. At this time LWC is only proceeding with design and cost estimates for the project.

Additional Information:

Any questions related to the project may be directed to Mr. James Brammell, PE of the Louisville Water Company at (502) 569-0880, or at the address shown below:

Louisville Water Company
550 South Third Street
Louisville, Kentucky 40202

The Bluegrass Water Supply Project is currently under review by the Kentucky Public Service Commission. Merit review is expected to be complete in (ask Linda B). Pending PSC approval, construction is [illegible] in 2000 and to complete by ____ 2002.



LOUISVILLE WATER COMPANY
550 S. 3RD STREET • LOUISVILLE, KENTUCKY 40202 • (502) 569-3600
JOHN L. HUBER – PRESIDENT
GREGORY C. HEITZMAN – VICE PRESIDENT/CHIEF ENGINEER

BLUEGRASS WATER SUPPLY PROJECT

DATE MAY. 1999	SCALE NONE	MAP NO. NONE	
DRAWN BY S.J.SMITH	CHECKED BY J.BRAMMELL	ENGR. J.BRAMMELL	
PROJECT NO. 98-755	SHEET 1 OF 1		

KAWC RATE OPTIONS

nnual Water Bill: Regular Wholesale Rates: Option 1

Commodity Rate	$1,058,500	**@$1.16/1,000 gals.**
Elevated Service Area Surcharge	173,375	**@$0.19/1,000 gals.**
Total Annual Commodity Charge	$1,231,875	
Customer Charge	$48,300	**@$3.5/Meter Equivalent per month**
Total Annual Water Bill	$1,280,175	or $ 1.40 per 1,000

Initial Capital Outlay

Extension of System Capital Contribution	$11,000,000
System Development Charge	$805,000
Total Initial Capital Outlay	$11,805,000

Assumptions:
Wholesale rate = $1.16/1,000 gals.
KAWC Usage 2.5 MGD (annual average)
KAWC has 1150 Equivalent Meter Units

Annual Water Bill: Proposed Approach (Option 2)

Operating Cost Component	$401,753	
Depreciation Cost Component	68,209	
Return on Plant Investment Component	255,827	
Total Annual Commodity Charge	$725,788	
Customer Charge	$48,300	
Total Annual Water Bill	$774,088	or $0.85 /1,000 gals.

Assumptions:
KAWC Usage 2.5 MGD (annual average)
LWC System Capacity 240 MGD
KAWC Reserved Capacity Request 3 MGD

Annual Debt Service

Principal Amount $11000000	$959,030	**Assumes 0.06% for 20 years**

Bluegrass Water Project - Computed Rate Per Thousand Gallons

Based on 1998 Costs

	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6-40
MGD Usage	1.5 Minimum	1.6 Minimum	1.7 Minimum	1.8 Minimum	1.9 Minimum	2.0 Minimum
	2.5 Request	3.0 Request	3.5 Request	4.0 Request	4.5 Request	5.0 Request
Minimum	0.942	1.013	1.066	1.114	1.156	1.194
2	0.816	0.899	0.973	1.047	1.120	1.194
3	0.843	0.746	0.795	0.844	0.894	0.943
4	0.969	0.897	0.820	0.743	0.780	0.817
5	1.046	0.987	0.926	0.865	0.803	0.742
6	1.096	1.048	0.997	0.946	0.894	0.843
7	1.133	1.091	1.047	1.003	0.960	0.916
8	1.160	1.123	1.085	1.047	1.008	0.970
9	1.181	1.149	1.114	1.080	1.046	1.012
10	1.198	1.169	1.138	1.107	1.077	1.046
11	1.212	1.185	1.157	1.129	1.102	1.074
12	1.223	1.199	1.173	1.148	1.122	1.097
13	1.233	1.211	1.187	1.163	1.140	1.116
14	1.241	1.221	1.199	1.177	1.155	1.133
15	1.249	1.229	1.209	1.188	1.168	1.147
16	1.255	1.237	1.218	1.198	1.179	1.160
17	1.260	1.243	1.225	1.207	1.189	1.171
18	1.265	1.249	1.232	1.215	1.198	1.181
19	1.270	1.255	1.238	1.222	1.206	1.190
20	1.274	1.259	1.244	1.229	1.213	1.198
21	1.278	1.264	1.249	1.234	1.220	1.205
22	1.281	1.268	1.254	1.240	1.226	1.212
23	1.284	1.271	1.258	1.245	1.231	1.218

Bluegrass Water Project Sample Monthly Bill

Based on 1998 Rate Schedule

Consumption in Thousand Gallons			
Beginning Meter Reading	0	TG	Example
Ending Meter Reading	181,000	TG	Example
Consumption for Month	181,000	TG	Ending - Beginning Reading
Average Usage Per Day	6,033	TG	Consumption / 30 Days

Reserved Capacity Request / Seller System Capacity			
Buyer Reserved Capacity Request (Daily)	2,500.0	TG	Example
Buyer Reserved Capacity Request (Monthly)	75,000.0	TG	
Seller System Capacity (Daily)	240,000	TG	
Reserved Capacity Request / Seller System Capacity	1.04167%		

Standard and Extra Consumption		
Consumption for Month	181,000.0	TG
Buyer Reserved Capacity Request (Monthly)	75,000.0	TG
Extra Consumption	106,000.0	TG
Standard Consumption	75,000.0	TG

Operating Expense Component				
Buyer Standard Consumption for Month		75,000	TG	Example
Seller Total System Sales		3,041,095	TG	Example
Buyer Consumption / Seller Total System Sales		2.46622%		
Seller Operating Expense	$	2,601,733		Utility Rate Schedule 2 Column 1 Line 50 / 12
- Common to Only Retail Customers Expense		427,278		Utility Rate Schedule 2 Column 7 Line 50 / 12
- Customer Expense		816,933		Utility Rate Schedule 2 Column 6 Line 50 / 12
Seller Operating Expense - Common to Only Retail Customers Expense - Customer Expense	$	1,357,522		
KAWC Portion of Operating Expense	$	33,479.44		(Buyer Consumption / Seller Total System Sales) * (Seller Operating - Expenses - Common to Only Retail Customers Expense - Customer Expense)

Depreciation Expense Component				
Reserved Capacity Request / Seller System Capacity		1.04167%		
Seller Depreciation Expense	$	917,540		Utility Rate Schedule 3 Column 1 Line 19 / 12
- Common to Only Retail Customers Expense		245,043		Utility Rate Schedule 3 Column 7 Line 19 / 12
- Customer Expense		221,918		Utility Rate Schedule 3 Column 6 Line 19 / 12
Seller Depreciation Expense - Common to Only Retail Customers Expense - Customer Expense	$	450.580		
KAWC Portion of Depreciation Expense	$	4,693.54		(Buyer Reserved Capacity / Seller System Capacity) * (Seller Depreciation Expense - Common to Only Retail Customers Expense - Customer Expense)

Return on Plant Investment Component			
Reserved Capacity Request / Seller System Capacity		1.04167%	
Seller Return on Plant Investment	$	2,382,109	Utility Rate Schedule 4 Column 1 Line 24 / 12
- Common to Only Retail Customers Portion		597,062	Utility Rate Schedule 4 Column 7 Line 24 / 12
- Customer Portion		124,012	Utility Rate Schedule 4 Column 6 Line 24 / 12
Seller Return on Plant Investment - Common to Only Retail Customers Portion - Customer Portion	$	1,661,036	
KAWC Portion of Return on Plant Investment	$	17,302.46	(Buyer Reserved Capacity / Seller System Capacity) * (Seller Return on Plant Investment - Common to Only Retail Customers Portion - Customer Portion)

Direct Operating Expense			
Direct Operating Expense	$	875.00	Example of Actual Operating Expenses assignable to Buyer including, but not limited to, metering, billing, collection, and maintenance on Buyer specific assets.

Extra Consumption Charge			
Consumption Above Reserved Capacity		106,000	TG
Standard Wholesale Rate	$	1.35	per TG
Extra Consumption Charge	$	143,100.00	

Computation of Total Water Bill		
KAWC Portion of Operating Expense	$	33,479.44
KAWC Portion of Depreciation Expense	$	4,693.54
KAWC Portion of Return on Plant Investment	$	17,302.46
Direct Operating Expense	$	875.00
Extra Consumption Charge	$	143,100.00
Total Water Bill	$	199,450.44

Bluegrass Water Project - Sample Monthly Bill Calculation

		Operating Cost			Depreciation	Return on Plant	Customer Cost	Excess Rate Cost				
Day	Consumption	Consumption Below Amount	Standard Rate per	Total Operating	Total Depreciation	Total Return on	Estimated Customer	Consumption Above Amount	Excess Rate per	Excess Rate	Total	Effective Rate per
	1,000 gallons	Reserved	1,000 gallons	Cost	Cost	Plant Invest	Cost	Reserved	1,000 gallons	Cost		1,000 gallons
1	1,500	1,500	$0.44	$660.42	$249.16	$934.53	$28.77	-	$1.35	$0.00	$1,872.88	1.25
2	1,500	1,500	$0.44	$660.42	$249.16	$934.53	$28.77	-	$1.35	$0.00	$1,872.88	1.25
3	2,000	2,000	$0.44	$880.56	$249.16	$934.53	$28.77	-	$1.35	$0.00	$2,093.01	1.05
4	2,000	2,000	$0.44	$880.56	$249.16	$934.53	$28.77	-	$1.35	$0.00	$2,093.01	1.05
5	3,000	3,000	$0.44	$1,320.83	$249.16	$934.53	$28.77	-	$1.35	$0.00	$2,533.29	0.84
6	3,000	3,000	$0.44	$1,320.83	$249.16	$934.53	$28.77	-	$1.35	$0.00	$2,533.29	0.84
7	4,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	-	$1.35	$0.00	$2,973.57	0.74
8	4,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	-	$1.35	$0.00	$2,973.57	0.74
9	5,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	1,000	$1.35	$1,350.00	$4,323.57	0.86
10	5,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	1,000	$1.35	$1,350.00	$4,323.57	0.86
11	6,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	2,000	$1.35	$2,700.00	$5,673.57	0.95
12	6,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	2,000	$1.35	$2,700.00	$5,673.57	0.95
13	7,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	3,000	$1.35	$4,050.00	$7,023.57	1.00
14	7,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	3,000	$1.35	$4,050.00	$7,023.57	1.00
15	8,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	4,000	$1.35	$5,400.00	$8,373.57	1.05
16	8,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	4,000	$1.35	$5,400.00	$8,373.57	1.05
17	9,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	5,000	$1.35	$6,750.00	$9,723.57	1.08
18	9,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	5,000	$1.35	$6,750.00	$9,723.57	1.08
19	10,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	6,000	$1.35	$8,100.00	$11,073.57	1.11
20	10,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	6,000	$1.35	$8,100.00	$11,073.57	1.11
21	9,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	5,000	$1.35	$6,750.00	$9,723.57	1.08
22	9,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	5,000	$1.35	$6,750.00	$9,723.57	1.08
23	8,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	4,000	$1.35	$5,400.00	$8,373.57	1.05
24	8,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	4,000	$1.35	$5,400.00	$8,373.57	1.05
25	7,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	3,000	$1.35	$4,050.00	$7,023.57	1.00
26	7,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	3,000	$1.35	$4,050.00	$7,023.57	1.00
27	6,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	2,000	$1.35	$2,700.00	$5,673.57	0.95
28	6,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	2,000	$1.35	$2,700.00	$5,673.57	0.95
29	5,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	1,000	$1.35	$1,350.00	$4,323.57	0.86
30	5,000	4,000	$0.44	$1,761.11	$249.16	$934.53	$28.77	1,000	$1.35	$1,350.00	$4,323.57	0.86
	181,000	109,000		47,990.25	7,474.92	28,035.83	863.01	72,000		97,200	$181,564.02	1.00
	Actual Usage	Billed Usage						Excess Usage				
	1,000 gallons	1,000 gallons						1,000 gallons				

Assumptions:

Reserve Capacity Request	4000	thousand gallons per day
Minimum Usage per Day	1500	thousand gallons per day
LWC System Consumption	101369.863	thousand gallons per day
LWC Operating Cost	44,631	per day
LWC Depreciation Cost	14,950	per day
LWC Return on Plant	56,072	per day
LWC System Capacity	240000	thousand gallons per day

Min 1.5/day
Year

No min flow

$436,476/yr

Dep/Plant Cost $436,476
$575,880
Sales $1,012,355/yr.

Bluegrass Water Project - Sample Monthly Bill Calculation

		Operating Cost			Depreciation	Return on Plant	Customer Cost	Excess Rate Cost				
		Consumption	Standard	Total	Total	Total	Estimated	Consumption	Excess	Excess	Total	Effective
Day	Consumption	Below Amount	Rate per	Operating	Depreciation	Return on	Customer	Above Amount	Rate per	Rate		Rate per
	1,000 gallons	Reserved	1,000 gallons	Cost	Cost	Plant Invest	Cost	Reserved	1,000 gallons	Cost		1,000 gallons
1	1,500	1,500	$0.44	$660.42	$155.73	$584.08	$28.77	-	$1.35	$0.00	$1,428.99	0.95
2	1,500	1,500	$0.44	$660.42	$155.73	$584.08	$28.77	-	$1.35	$0.00	$1,428.99	0.95
3	2,000	2,000	$0.44	$880.56	$155.73	$584.08	$28.77	-	$1.35	$0.00	$1,649.13	0.82
4	2,000	2,000	$0.44	$880.56	$155.73	$584.08	$28.77	-	$1.35	$0.00	$1,649.13	0.82
5	3,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	500	$1.35	$675.00	$2,544.27	0.85
6	3,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	500	$1.35	$675.00	$2,544.27	0.85
7	4,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	1,500	$1.35	$2,025.00	$3,894.27	0.97
8	4,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	1,500	$1.35	$2,025.00	$3,894.27	0.97
9	5,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	2,500	$1.35	$3,375.00	$5,244.27	1.05
10	5,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	2,500	$1.35	$3,375.00	$5,244.27	1.05
11	6,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	3,500	$1.35	$4,725.00	$6,594.27	1.10
12	6,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	3,500	$1.35	$4,725.00	$6,594.27	1.10
13	7,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	4,500	$1.35	$6,075.00	$7,944.27	1.13
14	7,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	4,500	$1.35	$6,075.00	$7,944.27	1.13
15	8,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	5,500	$1.35	$7,425.00	$9,294.27	1.16
16	8,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	5,500	$1.35	$7,425.00	$9,294.27	1.16
17	9,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	6,500	$1.35	$8,775.00	$10,644.27	1.18
18	9,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	6,500	$1.35	$8,775.00	$10,644.27	1.18
19	10,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	7,500	$1.35	$10,125.00	$11,994.27	1.20
20	10,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	7,500	$1.35	$10,125.00	$11,994.27	1.20
21	9,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	6,500	$1.35	$8,775.00	$10,644.27	1.18
22	9,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	6,500	$1.35	$8,775.00	$10,644.27	1.18
23	8,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	5,500	$1.35	$7,425.00	$9,294.27	1.16
24	8,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	5,500	$1.35	$7,425.00	$9,294.27	1.16
25	7,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	4,500	$1.35	$6,075.00	$7,944.27	1.13
26	7,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	4,500	$1.35	$6,075.00	$7,944.27	1.13
27	6,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	3,500	$1.35	$4,725.00	$6,594.27	1.10
28	6,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	3,500	$1.35	$4,725.00	$6,594.27	1.10
29	5,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	2,500	$1.35	$3,375.00	$5,244.27	1.05
30	5,000	2,500	$0.44	$1,100.69	$155.73	$584.08	$28.77	2,500	$1.35	$3,375.00	$5,244.27	1.05
	181,000	72,000		31,699.98	4,671.82	17,522.40	863.01	109,000		147,150	$201,907.22	1.12
	Actual Usage	Billed Usage						Excess Usage				
	1,000 gallons	1,000 gallons						1,000 gallons				

Assumptions:

Reserve Capacity Request	2500	thousand gallons per day
Minimum Usage per Day	1500	thousand gallons per day
LWC System Consumption	101369.863	thousand gallons per day
LWC Operating Cost	44,631	per day
LWC Depreciation Cost	14,950	per day
LWC Return on Plant	56,072	per day
LWC System Capacity	240000	thousand gallons per day

Bluegrass Water Project - Sample Monthly Bill Calculation

		Operating Cost			Depreciation	Return on Plant	Customer Cost	Excess Rate Cost					Effective
Day	Consumption	Consumption Below Amount Reserved	Standard Rate per 1,000 gallons	Total Operating Cost	Total Depreciation Cost	Total Return on Plant Invest	Estimated Customer Cost	Consumption Above Amount Reserved	Excess Rate per 1,000 gallons	Excess Rate Cost	Total		Rate per 1,000 gallons
	1,000 gallons												
1	1,500	1,500	$0.44	$660.42	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$2,168.80		1.45
2	1,500	1,500	$0.44	$660.42	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$2,168.80		1.45
3	2,000	2,000	$0.44	$880.56	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$2,388.94		1.19
4	2,000	2,000	$0.44	$880.56	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$2,388.94		1.19
5	3,000	3,000	$0.44	$1,320.83	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$2,829.21		0.94
6	3,000	3,000	$0.44	$1,320.83	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$2,829.21		0.94
7	4,000	4,000	$0.44	$1,761.11	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$3,269.49		0.82
8	4,000	4,000	$0.44	$1,761.11	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$3,269.49		0.82
9	5,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$3,709.77		0.74
10	5,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$3,709.77		0.74
11	6,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$3,709.77		0.84
12	6,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	-	$1.35	$0.00	$3,709.77		0.84
13	7,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	1,000	$1.35	$1,350.00	$5,059.77		0.84
14	7,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	1,000	$1.35	$1,350.00	$5,059.77		0.84
15	8,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	2,000	$1.35	$2,700.00	$6,409.77		0.92
16	8,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	2,000	$1.35	$2,700.00	$6,409.77		0.92
17	9,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	3,000	$1.35	$4,050.00	$7,759.77		0.97
18	9,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	3,000	$1.35	$4,050.00	$7,759.77		0.97
19	10,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	4,000	$1.35	$5,400.00	$9,109.77		1.01
20	10,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	4,000	$1.35	$5,400.00	$9,109.77		1.01
21	9,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	5,000	$1.35	$6,750.00	$10,459.77		1.05
22	9,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	5,000	$1.35	$6,750.00	$10,459.77		1.05
23	8,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	4,000	$1.35	$5,400.00	$9,109.77		1.01
24	8,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	4,000	$1.35	$5,400.00	$9,109.77		1.01
25	7,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	3,000	$1.35	$4,050.00	$7,759.77		0.97
26	7,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	3,000	$1.35	$4,050.00	$7,759.77		0.97
27	6,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	2,000	$1.35	$2,700.00	$6,409.77		0.92
28	6,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	2,000	$1.35	$2,700.00	$6,409.77		0.92
29	5,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	1,000	$1.35	$1,350.00	$5,059.77		0.84
30	5,000	5,000	$0.44	$2,201.39	$311.45	$1,168.16	$28.77	1,000	$1.35	$1,350.00	$5,059.77		0.84
								-	$1.35	$0.00	$3,709.77		0.74
								-	$1.35	$0.00	$3,709.77		0.74
	181,000	131,000		57,676.36	9,343.65	35,044.79	863.01	50,000		67,500	$170,427.81		0.94
	Actual Usage	Billed Usage						Excess Usage					
	1,000 gallons	1,000 gallons						1,000 gallons					

Assumptions:

Reserve Capacity Request	5000	thousand gallons per day
Minimum Usage per Day	2000	thousand gallons per day
LWC System Consumption	101369.863	thousand gallons per day
LWC Operating Cost	44,631	per day
LWC Depreciation Cost	14,950	per day
LWC Return on Plant	56,072	per day
LWC System Capacity	240000	thousand gallons per day

Bluegrass Water Project - Sample Monthly Bill Calculation

		Operating Cost			Depreciation	Return on Plant	Customer Cost	Excess Rate Cost				
Day	Consumption	Consumption Below Amount	Standard Rate per	Total Operating	Total Depreciation	Total Return on	Estimated Customer	Consumption Above Amount	Excess Rate per	Excess Rate	Total	Effective Rate per
	1,000 gallons	Reserved	1,000 gallons	Cost	Cost	Plant Invest	Cost	Reserved	1,000 gallons	Cost		1,000 gallons
1	1,500	2,000	$0.44	$880.56	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$2,684.86	1.79
2	1,500	2,000	$0.44	$880.56	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$2,684.86	1.79
3	2,000	2,000	$0.44	$880.56	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$2,684.86	1.34
4	2,000	2,000	$0.44	$880.56	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$2,684.86	1.34
5	3,000	3,000	$0.44	$1,320.83	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$3,125.14	1.04
6	3,000	3,000	$0.44	$1,320.83	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$3,125.14	1.04
7	4,000	4,000	$0.44	$1,761.11	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$3,565.41	0.89
8	4,000	4,000	$0.44	$1,761.11	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$3,565.41	0.89
9	5,000	5,000	$0.44	$2,201.39	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$4,005.69	0.80
10	5,000	5,000	$0.44	$2,201.39	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$4,005.69	0.80
11	6,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$4,445.97	0.74
12	6,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$4,445.97	0.74
13	7,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	1,000	$1.35	$1,350.00	$5,795.97	0.83
14	7,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	1,000	$1.35	$1,350.00	$5,795.97	0.83
15	8,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	2,000	$1.35	$2,700.00	$7,145.97	0.89
16	8,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	2,000	$1.35	$2,700.00	$7,145.97	0.89
17	9,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	3,000	$1.35	$4,050.00	$8,495.97	0.94
18	9,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	3,000	$1.35	$4,050.00	$8,495.97	0.94
19	10,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	4,000	$1.35	$5,400.00	$9,845.97	0.98
20	10,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	4,000	$1.35	$5,400.00	$9,845.97	0.98
21	9,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	3,000	$1.35	$4,050.00	$8,495.97	0.94
22	9,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	3,000	$1.35	$4,050.00	$8,495.97	0.94
23	8,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	2,000	$1.35	$2,700.00	$7,145.97	0.89
24	8,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	2,000	$1.35	$2,700.00	$7,145.97	0.89
25	7,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	1,000	$1.35	$1,350.00	$5,795.97	0.83
26	7,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	1,000	$1.35	$1,350.00	$5,795.97	0.83
27	6,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$4,445.97	0.74
28	6,000	6,000	$0.44	$2,641.67	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$4,445.97	0.74
29	5,000	5,000	$0.44	$2,201.39	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$4,005.69	0.80
30	5,000	5,000	$0.44	$2,201.39	$373.75	$1,401.79	$28.77	-	$1.35	$0.00	$4,005.69	0.80
	181,000	150,000		66,041.64	11,212.38	42,053.75	863.01	32,000		43,200	$163,370.78	0.90
	Actual Usage	Billed Usage						Excess Usage				
	1,000 gallons	1,000 gallons						1,000 gallons				

Assumptions:

Reserve Capacity Request	6000	thousand gallons per day
Minimum Usage per Day	2000	thousand gallons per day
LWC System Consumption	101369.863	thousand gallons per day
LWC Operating Cost	44,631	per day
LWC Depreciation Cost	14,950	per day
LWC Return on Plant	56,072	per day
LWC System Capacity	240000	thousand gallons per day

Table 1-1 5/8-Inch Equivalent Meter Factors	
Meter Size (inches)	**5/8-Inch Equivalent Meters[(a)]**
5/8 and 3/4	1.00
1	2.50
1-1/2	5.00
2	8.00
3	15.63
4	25.00
6	50.00
8	80.00
10	115.00
12	185.00
16	330.00
a Calculated by CH2M HILL.	

Rate means any individual or joint fare, toll, charge, rental, or other compensation for service rendered or to be rendered by the LWC.[4]

Service includes any practice or requirement in any way relating to the service of any utility.[5] *Adequate service* means having sufficient capacity to meet the maximum estimated requirements of the customer to be served during the year following the commencement of permanent service and to meet the maximum estimated requirements of other actual customers to be supplied from the same lines or facilities during such year and to assure such customers of reasonable continuity of service.[6]

[4]From Kentucky Revised Statutes (KRS) 278.010(10)
[5]From KRS 278.010(11)
[6]From KRS 278.010(12)

Table ES-2
SDCs for Each Meter Size
Including All Eight Asset Categories

Meter Size	5/8-Inch Equivalent Meter Factors(a)	SDC for Existing Capacity(b)	Plus SDC for Planned Capacity(b)	Equals Cost-of-Service SDCs
5/8- or 3/4-Inch	1.00	$398.74	$985.38	$1,384.12
1-Inch	2.50	996.85	2,463.45	3,460.30
1-1/2-Inch	5.00	1,993.70	4,926.90	6,920.60
2-Inch	8.00	3,189.92	7,883.04	11,072.96
3-Inch	15.63	6,230.31	15,396.56	21,626.88
4-Inch	25.00	9,968.50	24,634.50	34,603.00
6-Inch	50.00	19,937.00	49,269.00	69,206.00
8-Inch	80.00	31,899.20	78,830.40	110,729.60
10-Inch	115.00	45,855.10	113,318.70	159,173.80
12-Inch	185.00	73,766.90	182,295.30	256,062.20
16-Inch	330.00	131,584.20	325,175.40	456,759.60

a From Table 1-1.
b From Table 2-5.

Table ES-2A
SDCs for Each Meter Size
Including Transmission and Storage Asset Categories Only

Meter Size	5/8-Inch Equivalent Meter Factors(a)	SDC for Existing Capacity(b)	Plus SDC for Planned Capacity(b)	Equals Alternative SDCs
5/8- or 3/4-Inch	1.00	$217.52	$508.96	$726.48
1-Inch	2.50	543.80	1,272.40	1,816.20
1-1/2-Inch	5.00	1,087.60	2,544.80	3,632.40
2-Inch	8.00	1,740.16	4,071.68	5,811.84
3-Inch	15.63	3,398.75	7,952.50	11,351.25
4-Inch	25.00	5,438.00	12,724.00	18,162.00
6-Inch	50.00	10,876.00	25,448.00	36,324.00
8-Inch	80.00	17,401.60	40,716.80	58,118.40
10-Inch	115.00	25,014.80	58,530.40	83,545.20
12-Inch	185.00	40,241.20	94,157.60	134,398.80
16-Inch	330.00	71,781.60	167,956.80	239,738.40

a From Table 1-1.
b From Table 2-5A.

6/30/98

Roy Mundy	Greg Heitzman
Nick Rowe	John Huber
Mark Frost	~~Greg Heitzman~~
Herb Miller	Bob. Miller

1. Needs final draft by July 10 for KAWC Board. Mtg.
2. Point of Delivery
   - Hwy 55 in Shelby County.
   - LWC to pay BPS, Storage Tank, Property, Design.
3. Upsizing of Facilities
   - 60" upsizing paid by LWC based on incremental costs
4. Added 12 MGD capacity
   - first right of refusal on 12 mgd capacity
   - define legitimate customer request on the 12 mgd amount
   -
5. CIAC - LWC has very little cont. capital in transmission

6. Min Sales level - greg suggest 1.5 mg/day → 2.0 mg/day by 2005

7. Initial rate/Capacity Request.

   1 { 2.5 → 5.0 in 5 yrs @ CRR.
     { 1.5 → 2.0 min 5 yrs

   2 { 2.5 → 4.0 CRR 5 yrs
     { 1.5 → 2.0 min 5 yrs.

8. Contract renewal period – consider renewal term > 40 years

Nick Rowe
Mark Frost
Herb Miller
Roy Mundy.

Kentucky American Proposal

(remaining items of negotiation)
June 30, 1998

I. Point of Delivery - Hwy 55 near Interstate 64.

A. Minimum pressure at delivery point (discharge side of meter battery) is 30 psi.
B. Maximum Pressure along LWC pipeline is 175 psi.
C. Minimum Pressure along LWC pipeline is 40 psi.
D. Minimum flow capacity at delivery point is 23 MGD (36" pipe velocity = 5 ft/sec).
E. Maximum flow capacity is 35 MGD (36" pipe velocity = 8 ft/sec).

II. LWC Owned and Operated Facilities (Project Facilities)

A. 25 MGD Pump Station with expansion capability to 35 MGD located near I-265 and I-64 in Jefferson County.
B. Minimum 1.0 MG Storage Tank in Shelby County, west of delivery point and KAWC BPS.
C. 10,200 feet of 60-inch and 64,500 feet of 36-inch transmission main from English Station Reservoir to Delivery Point, generally following I-265 and I-64 corridor, using most feasible route.
D. Project Facilities designed by consultant selected by LWC, approved by KAWC.
E. Design and final cost estimate completed by December 1, 1998.

III. Financing of Project Facilities

A. KAWC to pay for 36-inch transmisison main from English Station to Delivery Point.
B. LWC to pay for incremental upsizing from 36-inch to 60-inch along Interstate 265.
C. LWC to pay for Jefferson County 25 MGD pump station and Shelby County storage facility
D. LWC to allow KAWC to recover cost of pipeline construction for any service connections to the transmission main in the form of a service connection fee having a value of $5,000 per equivalent unit as follows:
    1. 4-inch metered service, 25 equivalent units, $125,000 connection fee
    2. 6-inch metered service, 50 equivalent units, $250,000 connection fee
    3. 8-inch metered service, 80 equivalent units, $400,000 connection fee
    4. 10-inch metered service, 115 equivalent units, $575,000 connection fee
    5. 12-inch metered service, 185 equivalent units, $925,000 connection fee
    6. 16-inch metered service, 330 equivalent units, $1,650,000 connection fee.

E. Service Connection Fees would apply for term of contract (40 years), collected by seller for buyer. Total fees collected can not exceed value of the 36-inch tranmission main.
F. Connection fees apply only to metered service and do not apply to distribution system connections to transmission facilities for purpose of retail distribution of water.

IV. Reserve Capacity:

A. KAWC initially reserves 4.0 MGD, increased to minimum of 5 MGD by 2005.
B. KAWC has first right of refusal on reserve greater than 4 MGD up to 23 MGD, LWC giving 6 months response time for KAWC to increase reserve if LWC desires to sell additional reserve.
C. KAWC gives LWC 6 months notice on need to increase reserve capacity.
D. LWC retains full rights on 12 MGD of the 35 MGD total capacity.

V. Depreciation:

A. LWC will not charge depreciation on contributed portion of Project Facilities (transmision facilities), providing that KAWC will provide for replacement and or rehabilitation of facility as needed upon renewal of contract for a second 40 year contract term.
B. Depreciation will be included in the water rate for transmission, pumping and storage facilities used in delivering water to the delivery point.

VI. Water Rate Schedule B:

A. Buyer Reserve Request 10

- can establish new capacity by July 1, of previous year. (adjusted once per year) and effective Jan 1 following year
- Seller has 12 months to accommodate new reserve request level.
- ramp in from 2.5 to 5.0 MGD over first 5 years, min 5 mgd in year 5 to year 40.
- maximum reserve capacity request is 23 MGD.

B. Water rate for consumption within the Buyer reserve request:

- Operating Cost component (variable based on consumption)
- Depreciation Cost component (fixed based on reserve capacity)
- Return on Plant Investment Cost component (fixed based on reserve capacity)
- Dedicated customer costs (fixed based on reserve capacity)

C. Water Rate for consumption exceeding capacity Reserve Request in a 24 hour period:

- wholesale rate with ESA $1.30/1000
- ~~1.5 or 2.0 times the rate for consumption at the capacity reserve request rate.???~~
- Waiver provision for emergency approved by Seller.

D. Minimum Water Sales

- Minimum water sales requirement of 1.5 MGD, measured as ~~30~~ 45 MG per month for first 5 years.
- Minimum water sales requirement of 2.0 MGD, measured as ~~45~~ 60 MG per month after Year 2005
- Waiver for minimum requirement in event of an emergency approved by Seller.

Kentucky-American Water Company

2300 Richmond Road • Lexington, Kentucky 40502
(606) 268-6320 • Fax (606) 268-6327

Roy W. Mundy II
President

June 19, 1998

Mr. John Huber, President
Louisville Water Company
435 South Third Street
Louisville, Kentucky 40202

Dear John:

Thank you again for the hard work you and your staff have put into our negotiations toward the water purchase agreement between the Louisville Water Company and Kentucky-American Water Company. My purpose in writing is to state the current position of KAWC regarding what I consider to be our only significant remaining issue, and to make a suggestion as to how we might bring these issues to a close.

POINT OF DELIVERY:

We are in agreement with your request to move the point of delivery to the intersection of Interstate Highway 64 and Kentucky Highway 55. Our understanding is that this request includes a 25-MGD pump station and water storage tank designed and installed entirely at the expense of LWC (tank capacity to be determined). OK

ADDITIONAL 12 MGD OF CAPACITY CREATED BY PUMP STATION AND TANK REFERENCED ABOVE:

We understand that you have offered KAWC the right of first refusal for any increment of this additional capacity. Our request that one-half of this additional capacity be reserved for us at no additional cost was denied. I assume that if we agree to the first refusal concept of the 12 MGD in lieu of an absolute reserve, our cost to accept a portion of the 12 MGD would be in accord with current contract terms. No — if available

UPSIZING PROJECT FACILITIES:

We continue to disagree on LWC's share of the cost when the line is upsized, but to complete the contract, we will accept your representation that the incremental cost approach has been universally applied by LWC in situations where upsizing has been done. OK

Greg to have Kwen provide justification for
BPS $5.0 million
Storage $2.0 million
Pipe Upsiz. $.15 million
.13 million
$5.0 million

→ AKM, GIH, A. Wells, J. Hiller, S. Hubbard, K. Jeanby
6-22-98

Joe: is this true?

Bob to review.

DEPRECIATION ON CIAC:

The Public Service Commission does not allow KAWC to recover depreciation on contributed property and it is likely that they would look with disfavor on a rate that included such a cost. We suggest that depreciation on contributed property, if any, be removed from our rate calculation.

MINIMUM LEVEL OF SALES:

You have indicated that your board is interested in a guaranteed stream of revenue. We suggest that a minimum level of sales is unnecessary because the reserved capacity rate requires a minimum, and guaranteed, level of revenue, as it may increase from time to time, over the life of the contract.

RESERVED CAPACITY:

Our decision in these negotiations must be made among the various alternatives to the source of supply deficit. We must minimize our annual operating costs. It is obvious that the closer our reserved capacity is to our actual average use, the lower our per-unit rate will be. We propose that our initial reserved capacity be 2.5 MGD. We also propose that this reserve increase .5 MGD in the succeeding three years until it reaches 4 MGD. A reserved capacity of 6 MGD, while our average use remains at around 2 MGD, produces a rate that creates little, if any, benefit for KAWC. In fact, at an actual use of 1.5 MGD, the rate, using a 6-MGD reserved capacity, is $1.79 per thousand gallons.

I am hopeful that prior to our next meeting as a group, I could discuss these issues with you privately. We may be able to bring closure to some of them.

Sincerely,

Roy W. Mundy II
President

(1) Alt Rate
1.5 MG/day min ⇒ 45 MG/mo.
2.5 reserve rate / in 0.5 to 5 MGD in 5 yrs.

(2) what happens to K-A right for inc. reserve capacity — need 1st right of refusal. provision.

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Kentucky-American Water Company

2300 Richmond Road • Lexington, Kentucky 40502 • (606) 269-2386 • Fax (606) 268-6327

Coleman D. Bush
Vice President & Treasurer
(606) 268-6324

May 28, 1998

Mr. Robert K. Miller, Vice President of Finance and Treasurer
Louisville Water Company
435 South Third Street
Louisville, KY 40202

Dear Bob:

I feel that we had a very productive meeting last Friday. As you can imagine, at Kentucky-American, we have explored the various point of delivery and rate alternatives at length.

We offer the following for your consideration:

- While many of the details will require significantly more discussion, we understand your offer regarding point of delivery to be: For a point of delivery located at or near KY 55, Louisville Water Company ("LWC") will build, at its expense, one booster station to be located in Jefferson County and one storage tank (size and location to be determined). This is acceptable to us for the following consideration. It is estimated that these additional facilities will add up to 12 MGD to the capacity of the project facilities. We propose that Kentucky-American Water Company ("KAWC") be allowed to reserve one half of this additional capacity at no additional cost to KAWC.

- Regarding the water rate, we are pleased that the permanent ratchet is no longer an issue. In previous negotiations, you mentioned the possibility of phasing in the reserved capacity amount. We propose that we reserve 3 MGD in year 1; 4 MGD in year 2; 5 MGD in year 3 and 6 MGD in year 4 and thereafter, subject to the dictates of actual operation. The 1.5 and 2.0 "excess use" multiples are intriguing but do not appear to withstand a cost-based test. Unless the 1.5 and 2.0 "excess use" multiples produce a more favorable rate, we propose an "excess use" rate of $1.22 per thousand gallons (including the ESA charge) tied to some peak event in your system. Above that, we propose that the standard wholesale rate (including the ESA charge) apply.

I will be out of town until June 8. I propose that we set a meeting for that week to try to bring these negotiations to a close. If a meeting sometime the week of June 8 is acceptable, please contact Herb Miller at 606.268.6339

Sincerely,

Coleman Bush
Vice President and Treasurer

C: Roy W, Mundy II
Nick O. Rowe
Herbert A. Miller, Jr.
Linda C. Bridwell
Mark C. Frost

Advantages of Pipeline Ownership into Shelby County

May 12, 1998

Water Sales Potential:

- proximity to West Shelby Water District, North Shelby Water District, and Shelbyville
- potential additional Water Sales over next 10 years:
    - West Shelby Water District = 1.0 MGD (shift from Shelbyville source plus growth)
    - North Shelby Water District = 1.0 MGD (shift from Shelbyville source plus growth)
    - Shelbyville average day = 4.0 MGD
    - Taylorsville and US 60 Water District potential pending growth in region

Regionalization/Growth:

- supports regional economy theory, promoted by the Chamber and Community Leaders
- ability to shape water policy and future growth in Shelby County
- ownership of pipeline through the next envelop of retail service area (Shelby County)
- lower retail water rates than Shelby County providers
- Highway 55 by-pass around Shelbyville under construction, allowing further growth
- proximity to Budd Plant, Ford Mixing Center, and Shelbyville Industrial Park
- industrial development potential of western half of Shelby County
- I-64 corridor has access to railroad, interstate, electric, gas, fiber communications

Financial Considerations:

- LWC to pick up shared costs of ownership, prorated on capacity
- opportunity for cost sharing among WSWD, NSWD, and Shelbyville
- access to tax-exempt debt for LWC construction/ownership
- advantages of ownership through depreciation of assets and return on equity
- uses 10% of LWC reserve capacity to reduce cost pressures in raising water rates
- reduces risk of Kentucky-American using marginal pricing to sell water to Shelby County

Technical:

- improves pressure, Flow and reliability along route to existing LWC customers
- lower operating risks for LWC and Kentucky-American (3 pump stations)
- improved ability to manage water quality along pipeline route with additional sales
- compliments Area 3 County Extension Program, and eliminates need for Storage/Pumping investment for Clark Station Road area ($750,000)

Kentucky-American Water Company

2300 Richmond Road • Lexington, Kentucky 40502
(606) 268-6320 • Fax (606) 268-6327

K-A

Roy W. Mundy II
President

May 11, 1998

Mr. John Huber, President
Louisville Water Company
435 South Third Street
Louisville, Kentucky 40202

Dear John:

I would like to express my appreciation for the time and dedication that you and your staff have put into developing our contract to this point and for your continued willingness to discuss the various issues.

Coleman, Linda and Mark contacted Greg on Thursday, May 7, 1998 to clarify some of the issues that we discussed on Tuesday. We want to make sure that we clearly understand your position on some matters and that you also understand our needs as you approach your board tomorrow. Our needs are, in essence, the needs of our customers. Our customers require an additional source of quality water at a fair cost. As you know, before our contract is finalized, the Public Service Commission must approve it. Our diligence would not vary regardless, but we have approached the negotiations with the regulatory process, and its attendant scrutiny, in mind.

At our meeting on Tuesday, we talked at length about the issue of developing a defensible reserve capacity number. Greg suggested that we approach this issue by measuring various scenarios regarding the frequency, severity and time of a drought event. This information is to be supplied to Bob so that he can run the various reserve capacity and peak event scenarios through his rate model. Through our discussion with Greg, Linda gained a firm understanding of what he is proposing and will supply those numbers to Bob next week.

In talking to Greg, we were also seeking clarification on the issues of upsizing and point of delivery. There have been numerous scenarios presented, and I will attempt in this letter to state what I believe to be your position and also to confirm our position on these matters.

The first scenario: **Point of delivery at the Jefferson/Shelby County line with upsizing.** We understand that your position on upsizing under this scenario would be to do so on an incremental basis, basically paying the increased cost of larger pipe and any increase in installation costs within Jefferson County. Our position on upsizing this main is that the costs should be shared on a carrying capacity basis. In discussing the scenario on Tuesday relating to facilities beyond the Jefferson County line, you offered, as an example, an upsizing scenario that

would increase the capacity of the line from 23 to 40 MGD. On this basis, I believe your comment was that the sharing could be 23/40 KAWC and 17/40 LWC. I am certainly not trying to imply that this was an offer on your behalf, but am using this to illustrate that we feel this is the fair way to share the costs on any upsizing as LWC will obviously have that capacity for its future needs.

The second scenario: **Point of delivery in Shelby County at Highway 55 with upsizing.** As I mentioned on Tuesday, for us to consider moving the point of delivery, KAWC expects that a substantial investment be made by LWC. Offering this proposal means that the line has value to LWC, the total cost of which should not be borne by KAWC's customers. We discussed this proposal at length on Tuesday, but I want to make sure that we both have the same understanding. One possible scenario I presented was for LWC to pick up the entire cost of the line from the Shelby County line to Highway 55. Sharing the upsizing of the line from English Station to Highway 55 on the carrying capacity basis mentioned above is also worthy of consideration.

During the discussion between Linda, Coleman, Mark and Greg on Thursday, Greg mentioned that he would like to consider a third pump station. Under a scenario where LWC would see the need for a third pump station, but KAWC did not have an immediate need for it, Greg asked that KAWC consider participating in this third pump station on a carrying capacity basis. We would be willing to listen to a proposal on how a third pump station could benefit us.

One last issue that hasn't been discussed by us, but one Coleman has suggested to Bob is the consideration LWC will give KAWC as a result of KAWC becoming a guaranteed customer providing several hundred thousand dollars a year in revenues. When such opportunities are available to us, we are willing to invest certain capital to obtain such a user based upon revenue projections (not necessarily guarantees). It is possible that some of the issues we are now discussing will open that opportunity for such consideration.

Again, thank you and your team for the sincere efforts you've shown in our negotiations. If you should have any questions or comments regarding this matter, please let me know.

Very truly yours,

Roy W. Mundy II
President

RWM/pb

c: Bob Miller, Coleman Bush, Herb Miller, Greg Heitzman, Mark Frost, Nick Rowe, Linda Bridwell, L.W. Ingram, Esq.

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Kentucky-American Water Company
2300 Richmond Road • Lexington, Kentucky 40502
606-269-2386

TELECOPY TRANSMITTAL SHEET

FAX No. (606) 268-6327
We have a Sharp Model FO-800 Facsimile

DATE: 5/8/98
COMPANY: Louisville Water Co.
HAND TO: Greg Heitzman
FROM: Coleman

Number of pages, including cover: _____

If you have any problems with receiving, please call:

Phone: _____ Ask for: _____

Hard copy mailed: yes _____ no _____

PLEASE DELIVER TO THE ABOVE NAMED PERSON IMMEDIATELY.

MESSAGE: Greg, please review and call me Monday. Coleman

Mr. John Huber, President
Louisville Water Company
435 South Third Street
Louisville, Kentucky 40202

DRAFT

Dear John:

I would like to express my appreciation for the time and dedication that you and your staff have put into developing our contract to this point and for your continued willingness to discuss the various issues.

Coleman, Linda and Mark contacted Greg on Thursday, May 7, 1998 to clarify some of the issues that we discussed on Tuesday. We want to make sure that we clearly understand your position on some matters and that you also understand our needs as you approach your board next Tuesday. Our needs are, in essence, the needs of our customers. Our customers require an additional source of quality water at a fair cost. As you know, before our contract is finalized, the Public Service Commission must approve it. Our diligence would not vary regardless, but we have approached the negotiations with the regulatory process, and its attendant scrutiny, in mind.

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The first scenario is: **Point of delivery at the Jefferson/Shelby County line with upsizing.** We understand that your position on upsizing under this scenario would be to do so on an incremental basis, basically paying the

DRAFT

increased cost of larger pipe and any increase in installation costs. Our position on upsizing this main is that the costs should be shared on a carrying capacity basis. In discussing one scenario on Tuesday, you offered, as an example, an upsizing scenario that would increase the capacity of the line from 23 to 40 MGD. On this basis, I believe your comment was that the sharing could be 23/40 KAWC and 17/40 LWC. I am certainly not trying to imply that this was an offer on your behalf, but am using this to illustrate that we feel this is the fair way to share the costs.

The second scenario is: **Point of delivery in Shelby County at Highway 55 with upsizing.** As I mentioned on Tuesday, for us to consider moving the point of delivery, KAWC expects that a substantial investment be made by LWC. Offering this proposal means that the line has value to LWC, the cost of which should not be borne by KAWC's customers. We discussed this proposal at length on Tuesday but I want to make sure that we both have the same understanding. One possible scenario I presented was for LWC to pick up the entire cost of the line from the Shelby County line to Highway 55. Sharing the upsizing on the entire length of the line from English Station to Highway 55 on the carrying capacity basis mentioned above is also worthy of consideration.

During the discussion between Linda, Coleman, Mark and Greg on Thursday, Greg mentioned that he would like to consider a third pump station. He asked that, under a scenario where LWC would see the need for a third pump station, but KAWC did not have an immediate need for it, KAWC consider participating in this third pump station on a carrying capacity basis. We would certainly be willing to listen to a proposal on how a third pump station could benefit us.

lwccont

LOUISVILLE WATER COMPANY
MEMORANDUM

To: Karen Willis

From: Alan Arbuckle

Date: February 11, 1998

Re: Kentucky-American Service
Hydraulic Scenarios

The attached table summarizes the hydraulic evaluation performed for the Kentucky-American Service. The evaluation of the four routes, three different main sizes, and two flowrates resulted in the data in the table. The criteria used to determine satisfactory main size are

- provide for an HGL variation at the tank of less than 40 feet
- provide static pressure greater than 50 psi
- provide a flowrate of no more than 23.0 MGD

Application of these criteria result in the main size selections given below.

	Main Size (Inches)	Length (Feet)
• Route No. 1		
English Station Road, Urton Lane, I-265, I-64	60	10,200
I-64, Veechdale (Simpsonville)	48	44,500
• Route No. 2		
English Station Road, US60	60	900
US60, Veechdale, I-64	48	54,500

	Main Size (Inches)	Length (Feet)
• Route No. 3		
English Station Road, Urton Lane, I-265, I-64	60	10,200
I-64, Jefferson County Line	42	25,200
• Route No. 4		
English Station Road, US60	60	900
US60, RR, Clark Station Road, Jefferson County Line	42	29,700

The attached flow curves are for the same scenarios described above. These graphs show the flow and pressure relationship for the various routes and main sizes from 0.0 MGD to 23.0 MGD. The criteria used to select satisfactory main sizes are given below and were selected to maintain a tank level variation of less than 40 feet. Application of these criteria result in the main size selections given above. The flow curves, therefore, support the results of the hydraulic evaluation discussed above.

- Route No. 1 – 23.0 mgd at 50.3 psi
- Route No. 2 – 23.0 mgd at 50.3 psi
- Route No. 3 - 23.0 mgd at 87.6 psi
- Route No. 4 – 23.0 mgd at 129.1 psi

In addition to the above improvements, a storage facility of approximately 5-MG capacity and a pumping facility capable of supplying the Lexington demand (23.0 MGD) and the estimated wholesale demand will be required. Let me know if you have any questions.

Table 1: Static Pressure and Hydraulic Grade Summary for Proposed Service To Lexington (LWC Infrastructure Only)

Route Description	Main Size (inches)	Pressure Range (psi)[1] 3.2 MGD	Pressure Range (psi)[1] 23 MGD	HGL Range (ft)[2] 3.2 MGD	HGL Range (ft)[2] 23 MGD	Flow[3] (mgd)
1. English Station Road, Urton Lane, I-265 and:	60	-----	-----	-----	-----	
I-64 to Veechdale	36	67-175	30-167	974-976	885-976	14.9
I-64 to Veechdale	42	67-175	50-171	975-976	932-976	22.1
I-64 to Veechdale	48	67-175	58-172	976-976	952-976	30.8
2. English Station Road and :	60	-----	-----	-----	-----	
US60 to Veechdale	36	64-172	26-163	973-976	866-976	13.4
US60 to Veechdale	42	65-172	47-168	975-976	924-976	20.2
US60 to Veechdale	48	65-172	56-170	976-976	949-976	28.6
3. English Station Road and:	60	-----	-----	-----	-----	
I-64 to Jefferson Co/Shelby Co Boundary	36	92-175	71-167	975-976	924-976	37.0
I-64 to Jefferson Co/Shelby Co Boundary	42	92-175	82-171	976-976	951-976	56.5
I-64 to Jefferson Co/Shelby Co Boundary	48	93-175	87-172	976-976	962-976	80.4
4. English Station Road and:	60	-----	-----	-----	-----	
US60 & RR to Jefferson Co/Shelby Co Boundary	36	103-172	87-163	975-976	916-976	46.7
US60 & RR to Jefferson Co/Shelby Co Boundary	42	103-172	96-168	976-976	948-976	70.0
US60 & RR to Jefferson Co/Shelby Co Boundary	48	103-172	99-170	976-976	961-976	99.2

1. All pressures are estimates at critical low and high elevation points.
2. All HGL's are estimates at the point of the proposed storage facility at a flowrate of 0.0 to 23.0 MGD.
3. An HGL range of 936.3 to 976.3 (top 40 feet of the proposed tank height) was used to calculate the flow available.
   Minimum static pressures for this HGL range near the proposed tank are:
   - 50.3 psi for the proposed tank at Veechdale Road and I-64
   - 87.6 psi at the proposed tank at county boundary and I-64
   - 129.1 psi at the proposed tank at county boundary and railroad tracks

Figure 1: Flow Availability at Veechdale
I-64 Pipeline Route (Route No. 1)

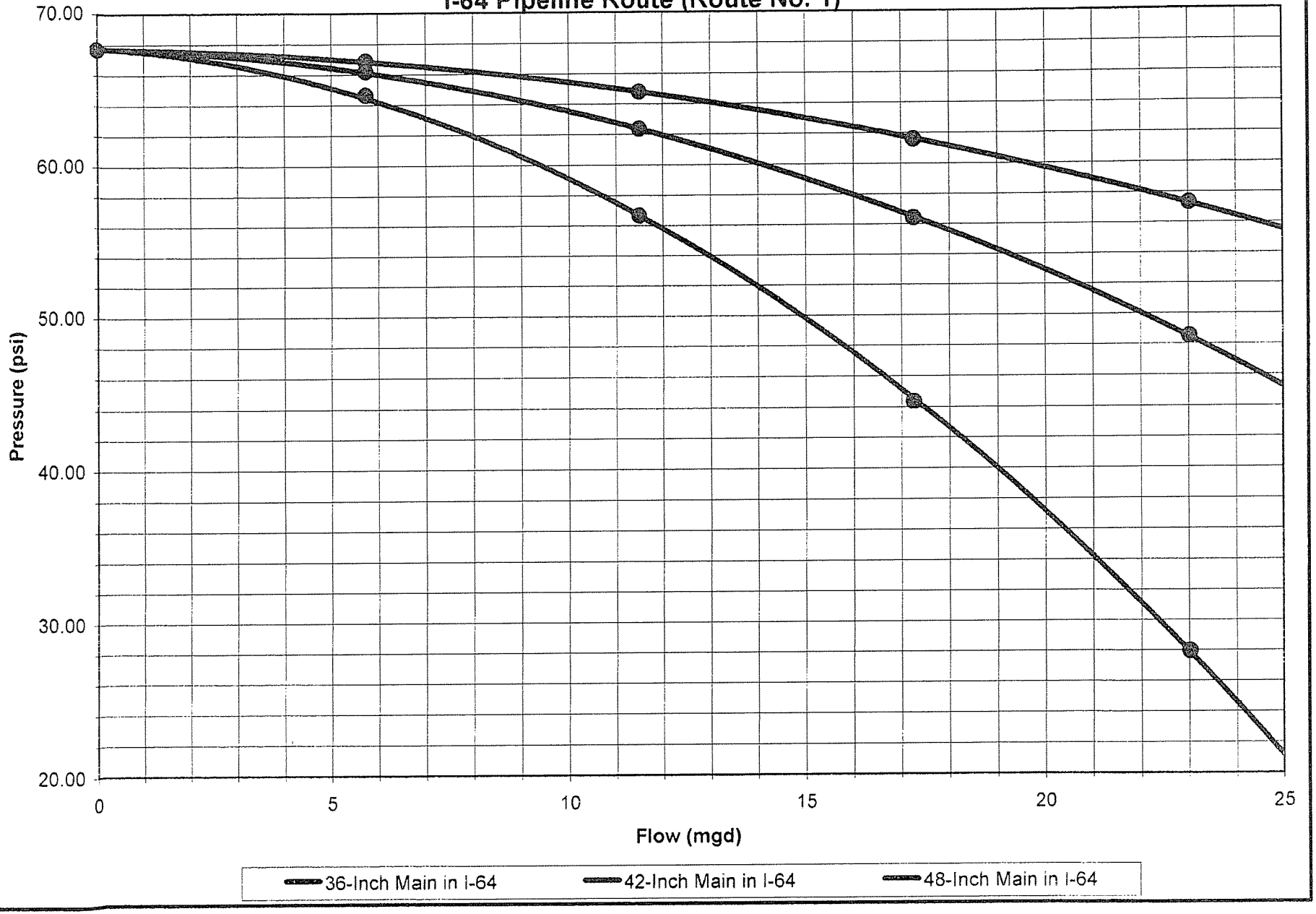


Figure 2: Flow Availability at Veechdale
US60 Pipeline Route (Route No. 2)

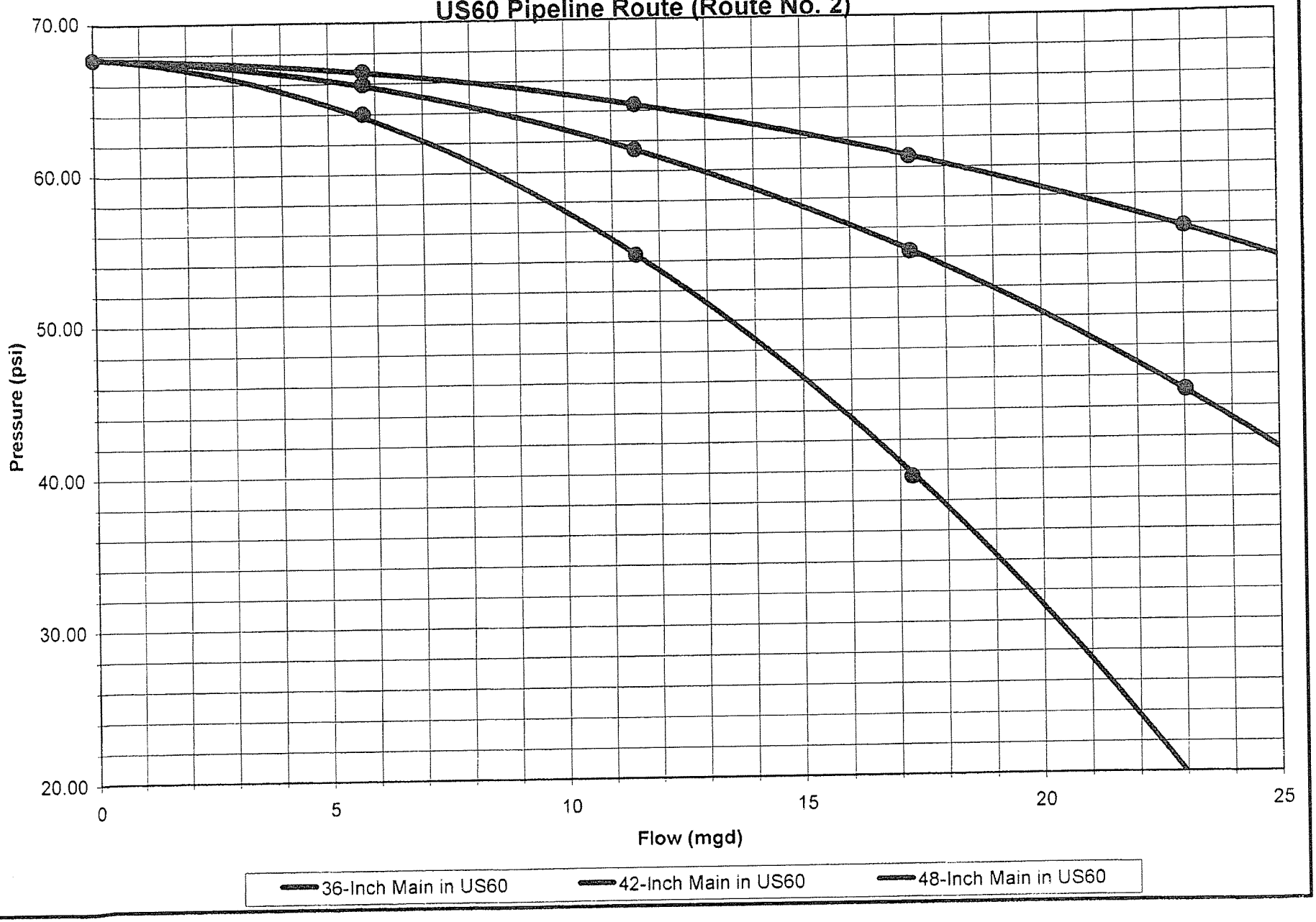


Figure 3: Flow Availability at the Jefferson/Shelby County Boundary
I-64 Pipeline Route (Route No. 3)

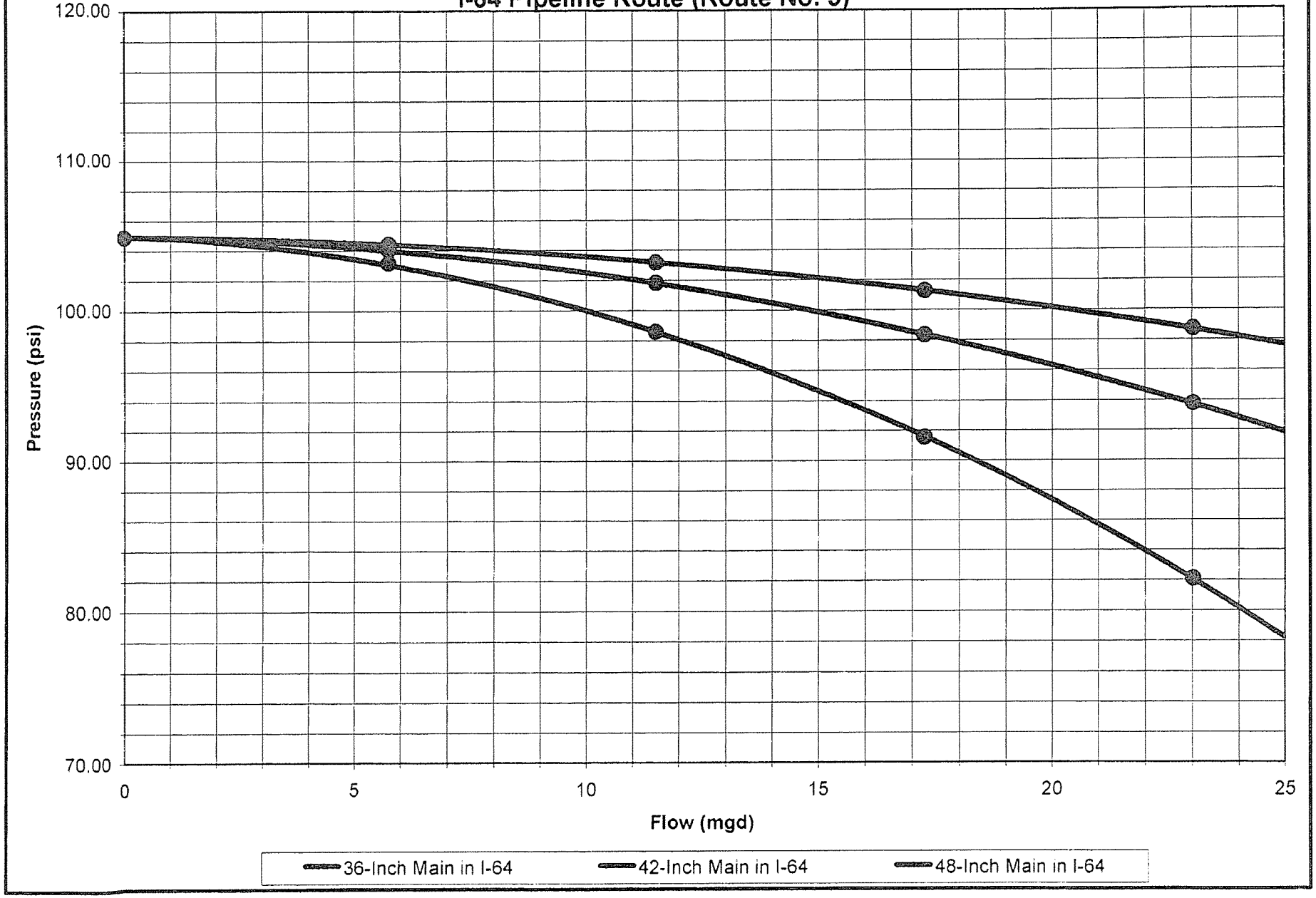
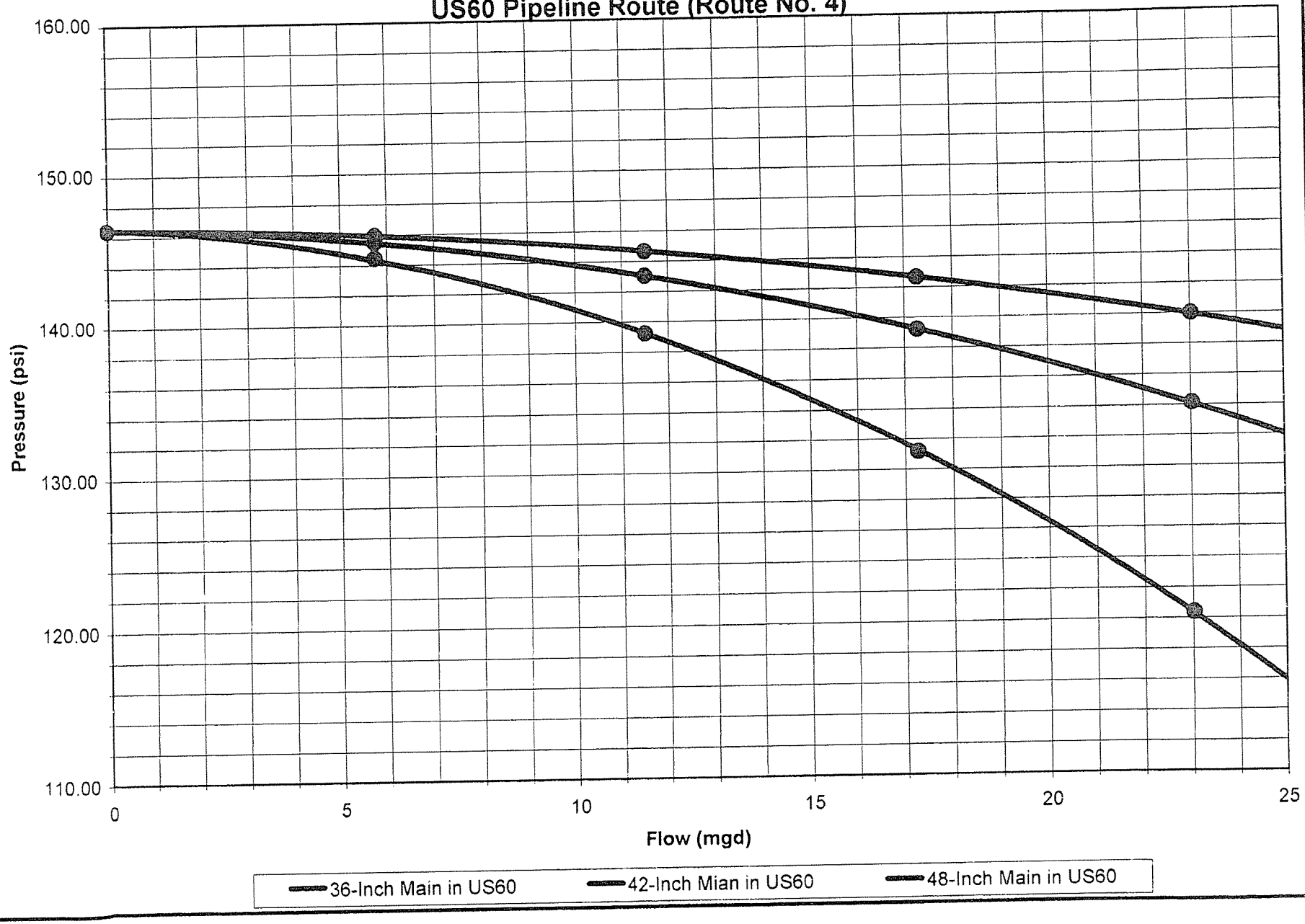


Figure 4: Flow Availability at the Jefferson/Shelby County Boundary US60 Pipeline Route (Route No. 4)



Louisville-Lexington Pipeline							C=	130	
February 4, 1998							Flow =	23.0	MGD
Pipeline operating at capacity with both booster stations							Diameter =	36	inches
		Elevation	Distance	Head Loss	HGL	Pressure	Pressure	Pressure	Pressure
Location	Station	(feet)	(feet)	(feet)	(feet)	(feet)	(psi)	Class Req'd	Class to Use
New route (first booster station)	-0.4	640	0		1288.2	648.2	280.7	300	350
New route (potental alternate booster location)	0.0	650	4,000	8.2	1288.2	638.2	276.3	300	350
New route	0.5	700	5,000	10.3	1277.9	577.9	250.2	300	350
New route	0.6	710	1,000	2.1	1277.9	567.9	245.9	250	300
	1.0	780	5,000	10.3	1267.7	487.7	211.2	250	300
	1.5	780	5,000	10.3	1257.4	477.4	206.7	250	300
	2.0	810	5,000	10.3	1247.2	437.2	189.3	200	250
	2.5	770	5,000	10.3	1236.9	466.9	202.2	250	300
	3.0	710	5,000	10.3	1226.6	516.6	223.7	250	300
	3.3	670	3,000	6.2	1220.5	550.5	238.4	250	300
	3.5	710	2,000	4.1	1216.4	506.4	219.3	250	300
	4.0	760	5,000	10.3	1206.1	446.1	193.2	200	250
	4.5	660	5,000	10.3	1195.9	535.9	232.0	250	300
	5.0	710	5,000	10.3	1185.6	475.6	205.9	250	300
	5.5	790	5,000	10.3	1175.4	385.4	166.9	200	250
	6.0	770	5,000	10.3	1165.1	395.1	171.1	200	250
	6.1	800	1,000	2.1	1163.1	363.1	157.2	200	250
	6.5	730	4,000	8.2	1154.9	424.9	184.0	200	250
	6.7	680	2,000	4.1	1150.8	470.8	203.8	250	300
	7.0	800	3,000	6.2	1144.6	344.6	149.2	150	200
	7.5	780	5,000	10.3	1134.4	354.4	153.4	200	250
	7.9	710	4,000	8.2	1126.2	416.2	180.2	200	250
	8.0	810	1,000	2.1	1124.1	314.1	136.0	150	200
	8.5	890	5,000	10.3	1113.9	223.9	96.9	100	150
	9.0	810	5,000	10.3	1103.6	293.6	127.1	150	200
	9.5	850	5,000	10.3	1093.4	243.4	105.4	150	200
	10.0	880	5,000	10.3	1083.1	203.1	87.9	100	150
	10.5	870	5,000	10.3	1072.8	202.8	87.8	100	150
	11.0	850	5,000	10.3	1062.6	212.6	92.1	100	150
	11.1	740	1,000	2.1	1060.5	320.5	138.8	150	200
	11.5	820	4,000	8.2	1052.3	232.3	100.6	150	200
	12.0	800	5,000	10.3	1042.1	242.1	104.8	150	200
	12.2	710	2,000	4.1	1038.0	328.0	142.0	150	200
	12.5	800	3,000	6.2	1031.8	231.8	100.4	150	200
	13.0	760	5,000	10.3	1021.6	261.6	113.3	150	200
	13.5	770	5,000	10.3	1011.3	241.3	104.5	150	200
	14.0	800	5,000	10.3	1001.1	201.1	87.1	100	150
	14.5	790	5,000	10.3	990.8	200.8	87.0	100	150
	15.0	830	5,000	10.3	980.6	150.6	65.2	100	150
	15.5	750	5,000	10.3	970.3	220.3	95.4	100	150
	16.0	650	5,000	10.3	960.1	310.1	134.3	150	200
Kentucky River crossing	16.1	460	1,000	2.1	958.0	498.0	215.6	250	300
	16.2	600	1,000	2.1	956.0	356.0	154.1	200	250
	16.3	700	1,000	2.1	953.9	253.9	109.9	150	200
	16.5	700	2,000	4.1	949.8	249.8	108.2	150	200
	17.0	700	5,000	10.3	939.6	239.6	103.7	150	200
	17.1	740	1,000	2.1	937.5	197.5	85.5	100	150
	17.2	760	1,000	2.1	935.5	175.5	76.0	100	150
	17.3	770	1,000	2.1	933.4	163.4	70.8	100	150
Critical high point	17.8	830	5,000	10.3	923.2	93.2	40.3	50	100
Glenns Creek crossing	17.9	660	1,000	2.1	921.1	261.1	113.1	150	200
Suction pressure slightly raised	18.1	810	2,000	4.1	917.0	107.0	46.3	50	100
Second booster station	18.1	810		0.0	1360.7	550.7	238.5	250	300
	18.3	800	2,000	4.1	1356.6	556.6	241.0	250	300
	18.8	850	5,000	10.3	1346.4	496.4	214.9	250	300
	19.3	850	5,000	10.3	1336.1	486.1	210.5	250	300
	19.6	870	3,000	6.2	1332.0	462.0	200.0	250	300
	19.8	860	2,000	4.1	1332.0	472.0	204.4	250	300
	20.3	910	5,000	10.3	1321.7	411.7	178.3	200	250
	20.8	890	5,000	10.3	1311.5	421.5	182.5	200	250
	21.3	890	5,000	10.3	1301.2	411.2	178.1	200	250
	21.8	830	5,000	10.3	1291.0	461.0	199.6	200	250
	22.0	850	2,000	4.1	1286.9	436.9	189.2	200	250
	22.5	890	5,000	10.3	1276.6	386.6	167.4	200	250
	22.7	850	2,000	4.1	1272.5	422.5	183.0	200	250
	23.0	900	3,000	6.2	1266.4	366.4	158.6	200	250
	23.5	770	5,000	10.3	1256.1	486.1	210.5	250	300
	24.0	850	5,000	10.3	1245.9	395.9	171.4	200	250
	24.4	910	4,000	8.2	1237.7	327.7	141.9	150	200
	24.5	880	1,000	2.1	1235.6	355.6	154.0	200	250
	24.9	900	4,000	8.2	1227.4	327.4	141.8	150	200
	25.0	890	1,000	2.1	1225.4	335.4	145.2	150	200
	25.5	940	5,000	10.3	1215.1	275.1	119.1	150	200
	26.0	850	5,000	10.3	1204.9	354.9	153.7	200	250
	26.5	900	5,000	10.3	1194.6	294.6	127.6	150	200
	27.0	940	5,000	10.3	1184.4	244.4	105.8	150	200
	27.5	950	5,000	10.3	1174.1	224.1	97.0	100	150
	27.6	950	1,000	2.1	1172.1	222.1	96.1	100	150
KAWC distribution system gradient	27.7	950	1,000	2.1	1170.0	220.0	95.3	100	150

Louisville-Lexington Pipeline							C=	130	
February 4, 1998							Flow =	19.0	MGD
Pipeline operating at capacity with both booster stations							Diameter =	36	inches
Location	Station	Elevation (feet)	Distance (feet)	Head Loss (feet)	HGL (feet)	Pressure (feet)	Pressure (psi)	Pressure Class Req'd	Pressure Class to Use
New route (first booster station)	-0.4	640	0		1177.7	537.7	232.8	250	300
New route (potental alternate booster location)	0.0	650	4,000	5.8	1177.7	527.7	228.5	250	300
New route	0.5	700	5,000	7.2	1170.5	470.5	203.7	250	300
New route	0.6	710	1,000	1.4	1170.5	460.5	199.4	200	250
	1.0	780	5,000	7.2	1163.3	383.3	165.9	200	250
	1.5	780	5,000	7.2	1156.1	376.1	162.8	200	250
	2.0	810	5,000	7.2	1148.9	338.9	146.7	150	200
	2.5	770	5,000	7.2	1141.7	371.7	160.9	200	250
	3.0	710	5,000	7.2	1134.5	424.5	183.8	200	250
	3.3	670	3,000	4.3	1130.1	460.1	199.2	200	250
	3.5	710	2,000	2.9	1127.3	417.3	180.7	200	250
	4.0	760	5,000	7.2	1120.1	360.1	155.9	200	250
	4.5	660	5,000	7.2	1112.9	452.9	196.1	200	250
	5.0	710	5,000	7.2	1105.7	395.7	171.3	200	250
	5.5	790	5,000	7.2	1098.5	308.5	133.6	150	200
	6.0	770	5,000	7.2	1091.3	321.3	139.1	150	200
	6.1	800	1,000	1.4	1089.8	289.8	125.5	150	200
	6.5	730	4,000	5.8	1084.0	354.0	153.3	200	250
	6.7	680	2,000	2.9	1081.2	401.2	173.7	200	250
	7.0	800	3,000	4.3	1076.8	276.8	119.9	150	200
	7.5	780	5,000	7.2	1069.6	289.6	125.4	150	200
	7.9	710	4,000	5.8	1063.9	353.9	153.2	200	250
	8.0	810	1,000	1.4	1062.4	252.4	109.3	150	200
	8.5	890	5,000	7.2	1055.2	165.2	71.6	100	150
	9.0	810	5,000	7.2	1048.0	238.0	103.1	150	200
	9.5	850	5,000	7.2	1040.8	190.8	82.6	100	150
	10.0	880	5,000	7.2	1033.6	153.6	66.5	100	150
	10.5	870	5,000	7.2	1026.4	156.4	67.7	100	150
	11.0	850	5,000	7.2	1019.2	169.2	73.3	100	150
	11.1	740	1,000	1.4	1017.8	277.8	120.3	150	200
	11.5	820	4,000	5.8	1012.0	192.0	83.2	100	150
	12.0	800	5,000	7.2	1004.8	204.8	88.7	100	150
	12.2	710	2,000	2.9	1002.0	292.0	126.4	150	200
	12.5	800	3,000	4.3	997.6	197.6	85.6	100	150
	13.0	760	5,000	7.2	990.4	230.4	99.8	100	150
	13.5	770	5,000	7.2	983.2	213.2	92.3	100	150
	14.0	800	5,000	7.2	976.0	176.0	76.2	100	150
	14.5	790	5,000	7.2	968.8	178.8	77.4	100	150
	15.0	830	5,000	7.2	961.6	131.6	57.0	100	150
	15.5	750	5,000	7.2	954.4	204.4	88.5	100	150
	16.0	650	5,000	7.2	947.2	297.2	128.7	150	200
Kentucky River crossing	16.1	460	1,000	1.4	945.8	485.8	210.4	250	300
	16.2	600	1,000	1.4	944.4	344.4	149.1	150	200
	16.3	700	1,000	1.4	942.9	242.9	105.2	150	200
	16.5	700	2,000	2.9	940.0	240.0	103.9	150	200
	17.0	700	5,000	7.2	932.8	232.8	100.8	150	200
	17.1	740	1,000	1.4	931.4	191.4	82.9	100	150
	17.2	760	1,000	1.4	930.0	170.0	73.6	100	150
	17.3	770	1,000	1.4	928.5	158.5	68.6	100	150
Critical high point	17.8	830	5,000	7.2	921.3	91.3	39.5	50	100
Glenns Creek crossing	17.9	660	1,000	1.4	919.9	259.9	112.5	150	200
Suction pressure slightly raised	18.1	810	2,000	2.9	917.0	107.0	46.3	50	100
Second booster station	18.1	810		0.0	1303.9	493.9	213.9	250	300
	18.3	800	2,000	2.9	1301.0	501.0	217.0	250	300
	18.8	850	5,000	7.2	1293.8	443.8	192.2	200	250
	19.3	850	5,000	7.2	1286.6	436.6	189.1	200	250
	19.6	870	3,000	4.3	1283.8	413.8	179.2	200	250
	19.8	860	2,000	2.9	1283.8	423.8	183.5	200	250
	20.3	910	5,000	7.2	1276.6	366.6	158.7	200	250
	20.8	890	5,000	7.2	1269.4	379.4	164.3	200	250
	21.3	890	5,000	7.2	1262.2	372.2	161.1	200	250
	21.8	830	5,000	7.2	1255.0	425.0	184.0	200	250
	22.0	850	2,000	2.9	1252.1	402.1	174.1	200	250
	22.5	890	5,000	7.2	1244.9	354.9	153.7	200	250
	22.7	850	2,000	2.9	1242.0	392.0	169.7	200	250
	23.0	900	3,000	4.3	1237.7	337.7	146.2	150	200
	23.5	770	5,000	7.2	1230.5	460.5	199.4	200	250
	24.0	850	5,000	7.2	1223.3	373.3	161.6	200	250
	24.4	910	4,000	5.8	1217.5	307.5	133.2	150	200
	24.5	880	1,000	1.4	1216.1	336.1	145.5	150	200
	24.9	900	4,000	5.8	1210.3	310.3	134.4	150	200
	25.0	890	1,000	1.4	1208.9	318.9	138.1	150	200
	25.5	940	5,000	7.2	1201.7	261.7	113.3	150	200
	26.0	850	5,000	7.2	1194.5	344.5	149.2	150	200
	26.5	900	5,000	7.2	1187.3	287.3	124.4	150	200
	27.0	940	5,000	7.2	1180.1	240.1	104.0	150	200
	27.5	950	5,000	7.2	1172.9	222.9	96.5	100	150
	27.6	950	1,000	1.4	1171.4	221.4	95.9	100	150
KAWC distribution system gradient	27.7	950	1,000	1.4	1170.0	220.0	95.3	100	150

Louisville-Lexington Pipeline							C=	130	
February 4, 1998							Flow =	1.6	MGD
Pipeline operating at *minimum flows with both* booster stations							Diameter =	36	inches
		Elevation	Distance	Head Loss	HGL	Pressure	Pressure	Pressure	Pressure
Location	Station	(feet)	(feet)	(feet)	(feet)	(feet)	(psi)	Class Req'd	Class to Use
New route (first booster station)	-0.4	640	0		983.7	343.7	148.8	150	200
New route (potental alternate booster location)	0.0	650	4,000	0.1	983.7	333.7	144.5	150	200
New route	0.5	700	5,000	0.1	983.6	283.6	122.8	150	200
New route	0.6	710	1,000	0.0	983.6	273.6	118.5	150	200
	1.0	780	5,000	0.1	983.5	203.5	88.1	100	150
	1.5	780	5,000	0.1	983.5	203.5	88.1	100	150
	2.0	810	5,000	0.1	983.4	173.4	75.1	100	150
	2.5	770	5,000	0.1	983.3	213.3	92.4	100	150
	3.0	710	5,000	0.1	983.2	273.2	118.3	150	200
	3.3	670	3,000	0.0	983.2	313.2	135.6	150	200
	3.5	710	2,000	0.0	983.2	273.2	118.3	150	200
	4.0	760	5,000	0.1	983.1	223.1	96.6	100	150
	4.5	660	5,000	0.1	983.0	323.0	139.9	150	200
	5.0	710	5,000	0.1	982.9	272.9	118.2	150	200
	5.5	790	5,000	0.1	982.9	192.9	83.5	100	150
	6.0	770	5,000	0.1	982.8	212.8	92.1	100	150
	6.1	800	1,000	0.0	982.8	182.8	79.1	100	150
	6.5	730	4,000	0.1	982.7	252.7	109.4	150	200
	6.7	680	2,000	0.0	982.7	302.7	131.1	150	200
	7.0	800	3,000	0.0	982.6	182.6	79.1	100	150
	7.5	780	5,000	0.1	982.6	202.6	87.7	100	150
	7.9	710	4,000	0.1	982.5	272.5	118.0	150	200
	8.0	810	1,000	0.0	982.5	172.5	74.7	100	150
Critical high point	8.5	890	5,000	0.1	982.4	92.4	40.0	50	100
	9.0	810	5,000	0.1	982.3	172.3	74.6	100	150
	9.5	850	5,000	0.1	982.3	132.3	57.3	100	150
	10.0	880	5,000	0.1	982.2	102.2	44.3	50	100
	10.5	870	5,000	0.1	982.1	112.1	48.6	50	100
	11.0	850	5,000	0.1	982.1	132.1	57.2	100	150
	11.1	740	1,000	0.0	982.0	242.0	104.8	150	200
	11.5	820	4,000	0.1	982.0	162.0	70.1	100	150
	12.0	800	5,000	0.1	981.9	181.9	78.8	100	150
	12.2	710	2,000	0.0	981.9	271.9	117.7	150	200
	12.5	800	3,000	0.0	981.8	181.8	78.7	100	150
	13.0	760	5,000	0.1	981.8	221.8	96.0	100	150
	13.5	770	5,000	0.1	981.7	211.7	91.7	100	150
	14.0	800	5,000	0.1	981.6	181.6	78.6	100	150
	14.5	790	5,000	0.1	981.5	191.5	82.9	100	150
	15.0	830	5,000	0.1	981.5	151.5	65.6	100	150
	15.5	750	5,000	0.1	981.4	231.4	100.2	150	200
	16.0	650	5,000	0.1	981.3	331.3	143.5	150	200
Kentucky River crossing	16.1	460	1,000	0.0	981.3	521.3	225.7	250	300
	16.2	600	1,000	0.0	981.3	381.3	165.1	200	250
	16.3	700	1,000	0.0	981.3	281.3	121.8	150	200
	16.5	700	2,000	0.0	981.2	281.2	121.8	150	200
	17.0	700	5,000	0.1	981.2	281.2	121.7	150	200
	17.1	740	1,000	0.0	981.1	241.1	104.4	150	200
	17.2	760	1,000	0.0	981.1	221.1	95.8	100	150
	17.3	770	1,000	0.0	981.1	211.1	91.4	100	150
	17.8	830	5,000	0.1	981.0	151.0	65.4	100	150
Glenns Creek crossing	17.9	660	1,000	0.0	981.0	321.0	139.0	150	200
Suction pressure significantly raised	18.1	810	2,000	0.0	981.0	171.0	74.0	100	150
Second booster station	18.1	810		0.0	1131.4	321.4	139.2	150	200
critical low point	18.3	800	2,000	0.0	1131.3	331.3	143.5	150	200
	18.8	850	5,000	0.1	1131.3	281.3	121.8	150	200
	19.3	850	5,000	0.1	1131.2	281.2	121.8	150	200
	19.6	870	3,000	0.0	1131.2	261.2	113.1	150	200
	19.8	860	2,000	0.0	1131.2	271.2	117.4	150	200
	20.3	910	5,000	0.1	1131.1	221.1	95.7	100	150
	20.8	890	5,000	0.1	1131.0	241.0	104.4	150	200
	21.3	890	5,000	0.1	1130.9	240.9	104.3	150	200
	21.8	830	5,000	0.1	1130.9	300.9	130.3	150	200
	22.0	850	2,000	0.0	1130.8	280.8	121.6	150	200
	22.5	890	5,000	0.1	1130.8	240.8	104.3	150	200
	22.7	850	2,000	0.0	1130.7	280.7	121.6	150	200
	23.0	900	3,000	0.0	1130.7	230.7	99.9	100	150
	23.5	770	5,000	0.1	1130.6	360.6	156.1	200	250
	24.0	850	5,000	0.1	1130.5	280.5	121.5	150	200
	24.4	910	4,000	0.1	1130.5	220.5	95.5	100	150
	24.5	880	1,000	0.0	1130.5	250.5	108.5	150	200
	24.9	900	4,000	0.1	1130.4	230.4	99.8	100	150
	25.0	890	1,000	0.0	1130.4	240.4	104.1	150	200
	25.5	940	5,000	0.1	1130.3	190.3	82.4	100	150
	26.0	850	5,000	0.1	1130.3	280.3	121.3	150	200
	26.5	900	5,000	0.1	1130.2	230.2	99.7	100	150
	27.0	940	5,000	0.1	1130.1	190.1	82.3	100	150
	27.5	950	5,000	0.1	1130.0	180.0	78.0	100	150
	27.6	950	1,000	0.0	1130.0	180.0	77.9	100	150
KAWC distribution system gradient	27.7	950	1,000	0.0	1130.0	180.0	77.9	100	150

Louisville-Lexington Pipeline							C=	130	
February 4, 1998							Flow =	6.0	MGD
Pipeline operating at minimum flows with both booster stations							Diameter =	36	inches
		Elevation	Distance	Head Loss	HGL	Pressure	Pressure	Pressure	Pressure
Location	Station	(feet)	(feet)	(feet)	(feet)	(feet)	(psi)	Class Req'd	Class to Use
New route (first booster station)	-0.4	640	0		1011.9	371.9	161.0	200	250
New route (potental alternate booster location)	0.0	650	4,000	0.7	1011.9	361.9	156.7	200	250
New route	0.5	700	5,000	0.9	1011.0	311.0	134.7	150	200
New route	0.6	710	1,000	0.2	1011.0	301.0	130.4	150	200
	1.0	780	5,000	0.9	1010.2	230.2	99.7	100	150
	1.5	780	5,000	0.9	1009.3	229.3	99.3	100	150
	2.0	810	5,000	0.9	1008.5	198.5	85.9	100	150
	2.5	770	5,000	0.9	1007.6	237.6	102.9	150	200
	3.0	710	5,000	0.9	1006.8	296.8	128.5	150	200
	3.3	670	3,000	0.5	1006.3	336.3	145.6	150	200
	3.5	710	2,000	0.3	1005.9	295.9	128.1	150	200
	4.0	760	5,000	0.9	1005.1	245.1	106.1	150	200
	4.5	660	5,000	0.9	1004.2	344.2	149.0	150	200
	5.0	710	5,000	0.9	1003.4	293.4	127.0	150	200
	5.5	790	5,000	0.9	1002.5	212.5	92.0	100	150
	6.0	770	5,000	0.9	1001.7	231.7	100.3	150	200
	6.1	800	1,000	0.2	1001.5	201.5	87.2	100	150
	6.5	730	4,000	0.7	1000.8	270.8	117.3	150	200
	6.7	680	2,000	0.3	1000.5	320.5	138.8	150	200
	7.0	800	3,000	0.5	999.9	199.9	86.6	100	150
	7.5	780	5,000	0.9	999.1	219.1	94.9	100	150
	7.9	710	4,000	0.7	998.4	288.4	124.9	150	200
	8.0	810	1,000	0.2	998.2	188.2	81.5	100	150
Critical high point	8.5	890	5,000	0.9	997.4	107.4	46.5	50	100
	9.0	810	5,000	0.9	996.5	186.5	80.8	100	150
	9.5	850	5,000	0.9	995.7	145.7	63.1	100	150
	10.0	880	5,000	0.9	994.8	114.8	49.7	50	100
	10.5	870	5,000	0.9	994.0	124.0	53.7	100	150
	11.0	850	5,000	0.9	993.1	143.1	62.0	100	150
	11.1	740	1,000	0.2	993.0	253.0	109.5	150	200
	11.5	820	4,000	0.7	992.3	172.3	74.6	100	150
	12.0	800	5,000	0.9	991.4	191.4	82.9	100	150
	12.2	710	2,000	0.3	991.1	281.1	121.7	150	200
	12.5	800	3,000	0.5	990.6	190.6	82.5	100	150
	13.0	760	5,000	0.9	989.7	229.7	99.5	100	150
	13.5	770	5,000	0.9	988.9	218.9	94.8	100	150
	14.0	800	5,000	0.9	988.0	188.0	81.4	100	150
	14.5	790	5,000	0.9	987.1	197.1	85.4	100	150
	15.0	830	5,000	0.9	986.3	156.3	67.7	100	150
	15.5	750	5,000	0.9	985.4	235.4	101.9	150	200
	16.0	650	5,000	0.9	984.6	334.6	144.9	150	200
Kentucky River crossing	16.1	460	1,000	0.2	984.4	524.4	227.1	250	300
	16.2	600	1,000	0.2	984.2	384.2	166.4	200	250
	16.3	700	1,000	0.2	984.1	284.1	123.0	150	200
	16.5	700	2,000	0.3	983.7	283.7	122.9	150	200
	17.0	700	5,000	0.9	982.9	282.9	122.5	150	200
	17.1	740	1,000	0.2	982.7	242.7	105.1	150	200
	17.2	760	1,000	0.2	982.5	222.5	96.4	100	150
	17.3	770	1,000	0.2	982.4	212.4	92.0	100	150
	17.8	830	5,000	0.9	981.5	151.5	65.6	100	150
Glenns Creek crossing	17.9	660	1,000	0.2	981.3	321.3	139.1	150	200
Suction pressure significantly raised	18.1	810	2,000	0.3	981.0	171.0	74.0	100	150
Second booster station	18.1	810		0.0	1145.9	335.9	145.4	150	200
critical low point	18.3	800	2,000	0.3	1145.5	345.5	149.6	150	200
	18.8	850	5,000	0.9	1144.7	294.7	127.6	150	200
	19.3	850	5,000	0.9	1143.8	293.8	127.2	150	200
	19.6	870	3,000	0.5	1143.5	273.5	118.4	150	200
	19.8	860	2,000	0.3	1143.5	283.5	122.7	150	200
	20.3	910	5,000	0.9	1142.6	232.6	100.7	150	200
	20.8	890	5,000	0.9	1141.8	251.8	109.0	150	200
	21.3	890	5,000	0.9	1140.9	250.9	108.7	150	200
	21.8	830	5,000	0.9	1140.1	310.1	134.3	150	200
	22.0	850	2,000	0.3	1139.7	289.7	125.5	150	200
	22.5	890	5,000	0.9	1138.9	248.9	107.8	150	200
	22.7	850	2,000	0.3	1138.5	288.5	124.9	150	200
	23.0	900	3,000	0.5	1138.0	238.0	103.1	150	200
	23.5	770	5,000	0.9	1137.2	367.2	159.0	200	250
	24.0	850	5,000	0.9	1136.3	286.3	124.0	150	200
	24.4	910	4,000	0.7	1135.6	225.6	97.7	100	150
	24.5	880	1,000	0.2	1135.5	255.5	110.6	150	200
	24.9	900	4,000	0.7	1134.8	234.8	101.7	150	200
	25.0	890	1,000	0.2	1134.6	244.6	105.9	150	200
	25.5	940	5,000	0.9	1133.8	193.8	83.9	100	150
	26.0	850	5,000	0.9	1132.9	282.9	122.5	150	200
	26.5	900	5,000	0.9	1132.0	232.0	100.5	150	200
	27.0	940	5,000	0.9	1131.2	191.2	82.8	100	150
	27.5	950	5,000	0.9	1130.3	180.3	78.1	100	150
	27.6	950	1,000	0.2	1130.2	180.2	78.0	100	150
KAWC distribution system gradient	27.7	950	1,000	0.2	1130.0	180.0	77.9	100	150

Louisville-Lexington Pipeline							C=	130	
February 4, 1998							Flow =	6.0	MGD
Pipeline operating at minimum flows with one booster station							Diameter =	36	inches
		Elevation	Distance	Head Loss	HGL	Pressure	Pressure	Pressure	Pressure
Location	Station	(feet)	(feet)	(feet)	(feet)	(feet)	(psi)	Class Req'd	Class to Use
New route (first booster station)	-0.4	640	0		1177.3	537.3	232.6	250	300
New route (potental alternate booster location)	0.0	650	4,000	0.7	1177.3	527.3	228.3	250	300
New route	0.5	700	5,000	0.9	1176.4	476.4	206.3	250	300
New route	0.6	710	1,000	0.2	1176.3	466.3	201.9	250	300
	1.0	780	4,000	0.7	1175.6	395.6	171.3	200	250
	1.5	780	5,000	0.9	1174.7	394.7	170.9	200	250
	2.0	810	5,000	0.9	1173.9	363.9	157.6	200	250
	2.5	770	5,000	0.9	1173.0	403.0	174.5	200	250
	3.0	710	5,000	0.9	1172.2	462.2	200.1	250	300
	3.3	670	3,000	0.5	1171.7	501.7	217.2	250	300
	3.5	710	2,000	0.3	1171.3	461.3	199.7	200	250
	4.0	760	5,000	0.9	1170.5	410.5	177.7	200	250
	4.5	660	5,000	0.9	1169.6	509.6	220.7	250	300
	5.0	710	5,000	0.9	1168.8	458.8	198.6	200	250
	5.5	790	5,000	0.9	1167.9	377.9	163.6	200	250
	6.0	770	5,000	0.9	1167.0	397.0	171.9	200	250
	6.1	800	1,000	0.2	1166.9	366.9	158.9	200	250
	6.5	730	4,000	0.7	1166.2	436.2	188.9	200	250
	6.7	680	2,000	0.3	1165.9	485.9	210.4	250	300
	7.0	800	3,000	0.5	1165.3	365.3	158.2	200	250
	7.5	780	5,000	0.9	1164.5	384.5	166.5	200	250
	7.9	710	4,000	0.7	1163.8	453.8	196.5	200	250
	8.0	810	1,000	0.2	1163.6	353.6	153.1	200	250
	8.5	890	5,000	0.9	1162.8	272.8	118.1	150	200
	9.0	810	5,000	0.9	1161.9	351.9	152.4	200	250
	9.5	850	5,000	0.9	1161.1	311.1	134.7	150	200
	10.0	880	5,000	0.9	1160.2	280.2	121.3	150	200
	10.5	870	5,000	0.9	1159.4	289.4	125.3	150	200
	11.0	850	5,000	0.9	1158.5	308.5	133.6	150	200
	11.1	740	1,000	0.2	1158.3	418.3	181.1	200	250
	11.5	820	4,000	0.7	1157.7	337.7	146.2	150	200
	12.0	800	5,000	0.9	1156.8	356.8	154.5	200	250
	12.2	710	2,000	0.3	1156.5	446.5	193.3	200	250
	12.5	800	3,000	0.5	1155.9	355.9	154.1	200	250
	13.0	760	5,000	0.9	1155.1	395.1	171.1	200	250
	13.5	770	5,000	0.9	1154.2	384.2	166.4	200	250
	14.0	800	5,000	0.9	1153.4	353.4	153.0	200	250
	14.5	790	5,000	0.9	1152.5	362.5	157.0	200	250
	15.0	830	5,000	0.9	1151.7	321.7	139.3	150	200
	15.5	750	5,000	0.9	1150.8	400.8	173.6	200	250
	16.0	650	5,000	0.9	1150.0	500.0	216.5	250	300
Kentucky River crossing	16.1	460	1,000	0.2	1149.8	689.8	298.7	300	350
	16.2	600	1,000	0.2	1149.6	549.6	238.0	250	300
	16.3	700	1,000	0.2	1149.5	449.5	194.6	200	250
	16.5	700	2,000	0.3	1149.1	449.1	194.5	200	250
	17.0	700	5,000	0.9	1148.3	448.3	194.1	200	250
	17.1	740	1,000	0.2	1148.1	408.1	176.7	200	250
	17.2	760	1,000	0.2	1147.9	387.9	168.0	200	250
	17.3	770	1,000	0.2	1147.8	377.8	163.6	200	250
	17.8	830	5,000	0.9	1146.9	316.9	137.2	150	200
Glenns Creek crossing	17.9	660	1,000	0.2	1146.7	486.7	210.8	250	300
	18.1	810	2,000	0.3	1146.4	336.4	145.7	150	200
	18.3	800	2,000	0.3	1146.0	346.0	149.8	150	200
	18.8	850	5,000	0.9	1145.2	295.2	127.8	150	200
	19.3	850	5,000	0.9	1144.3	294.3	127.4	150	200
	19.6	870	3,000	0.5	1143.8	273.8	118.6	150	200
	19.8	860	2,000	0.3	1143.5	283.5	122.7	150	200
	20.3	910	5,000	0.9	1142.6	232.6	100.7	150	200
	20.8	890	5,000	0.9	1141.8	251.8	109.0	150	200
	21.3	890	5,000	0.9	1140.9	250.9	108.7	150	200
	21.8	830	5,000	0.9	1140.1	310.1	134.3	150	200
	22.0	850	2,000	0.3	1139.7	289.7	125.5	150	200
	22.5	890	5,000	0.9	1138.9	248.9	107.8	150	200
	22.7	850	2,000	0.3	1138.5	288.5	124.9	150	200
	23.0	900	3,000	0.5	1138.0	238.0	103.1	150	200
	23.5	770	5,000	0.9	1137.2	367.2	159.0	200	250
	24.0	850	5,000	0.9	1136.3	286.3	124.0	150	200
	24.4	910	4,000	0.7	1135.6	225.6	97.7	100	150
	24.5	880	1,000	0.2	1135.5	255.5	110.6	150	200
	24.9	900	4,000	0.7	1134.8	234.8	101.7	150	200
	25.0	890	1,000	0.2	1134.6	244.6	105.9	150	200
	25.5	940	5,000	0.9	1133.8	193.8	83.9	100	150
	26.0	850	5,000	0.9	1132.9	282.9	122.5	150	200
	26.5	900	5,000	0.9	1132.0	232.0	100.5	150	200
	27.0	940	5,000	0.9	1131.2	191.2	82.8	100	150
	27.5	950	5,000	0.9	1130.3	180.3	78.1	100	150
	27.6	950	1,000	0.2	1130.2	180.2	78.0	100	150
KAWC distribution system gradient	27.7	950	1,000	0.2	1130.0	180.0	77.9	100	150

Louisville-Lexington Pipeline							C=	130	
February 4, 1998							Flow =	1.6	MGD
Pipeline operating at minimum flows with one booster station							Diameter =	36	inches
		Elevation	Distance	Head Loss	HGL	Pressure	Pressure	Pressure	Pressure
Location	Station	(feet)	(feet)	(feet)	(feet)	(feet)	(psi)	Class Req'd	Class to Use
New route (first booster station)	-0.4	640	0		1134.1	494.1	213.9	250	300
New route (potental alternate booster location)	0.0	650	4,000	0.1	1134.1	484.1	209.6	250	300
New route	0.5	700	5,000	0.1	1134.0	434.0	187.9	200	250
New route	0.6	710	1,000	0.0	1134.0	424.0	183.6	200	250
	1.0	780	4,000	0.1	1134.0	354.0	153.3	200	250
	1.5	780	5,000	0.1	1133.9	353.9	153.2	200	250
	2.0	810	5,000	0.1	1133.8	323.8	140.2	150	200
	2.5	770	5,000	0.1	1133.7	363.7	157.5	200	250
	3.0	710	5,000	0.1	1133.7	423.7	183.4	200	250
	3.3	670	3,000	0.0	1133.6	463.6	200.7	250	300
	3.5	710	2,000	0.0	1133.6	423.6	183.4	200	250
	4.0	760	5,000	0.1	1133.5	373.5	161.7	200	250
	4.5	660	5,000	0.1	1133.4	473.4	205.0	250	300
	5.0	710	5,000	0.1	1133.4	423.4	183.3	200	250
	5.5	790	5,000	0.1	1133.3	343.3	148.6	150	200
	6.0	770	5,000	0.1	1133.2	363.2	157.3	200	250
	6.1	800	1,000	0.0	1133.2	333.2	144.3	150	200
	6.5	730	4,000	0.1	1133.1	403.1	174.6	200	250
	6.7	680	2,000	0.0	1133.1	453.1	196.2	200	250
	7.0	800	3,000	0.0	1133.1	333.1	144.2	150	200
	7.5	780	5,000	0.1	1133.0	353.0	152.8	200	250
	7.9	710	4,000	0.1	1132.9	422.9	183.1	200	250
	8.0	810	1,000	0.0	1132.9	322.9	139.8	150	200
	8.5	890	5,000	0.1	1132.8	242.8	105.2	150	200
	9.0	810	5,000	0.1	1132.8	322.8	139.8	150	200
	9.5	850	5,000	0.1	1132.7	282.7	122.4	150	200
	10.0	880	5,000	0.1	1132.6	252.6	109.4	150	200
	10.5	870	5,000	0.1	1132.5	262.5	113.7	150	200
	11.0	850	5,000	0.1	1132.5	282.5	122.3	150	200
	11.1	740	1,000	0.0	1132.5	392.5	169.9	200	250
	11.5	820	4,000	0.1	1132.4	312.4	135.3	150	200
	12.0	800	5,000	0.1	1132.3	332.3	143.9	150	200
	12.2	710	2,000	0.0	1132.3	422.3	182.9	200	250
	12.5	800	3,000	0.0	1132.2	332.2	143.9	150	200
	13.0	760	5,000	0.1	1132.2	372.2	161.2	200	250
	13.5	770	5,000	0.1	1132.1	362.1	156.8	200	250
	14.0	800	5,000	0.1	1132.0	332.0	143.8	150	200
	14.5	790	5,000	0.1	1132.0	342.0	148.1	150	200
	15.0	830	5,000	0.1	1131.9	301.9	130.7	150	200
	15.5	750	5,000	0.1	1131.8	381.8	165.3	200	250
	16.0	650	5,000	0.1	1131.7	481.7	208.6	250	300
Kentucky River crossing	16.1	460	1,000	0.0	1131.7	671.7	290.9	300	350
	16.2	600	1,000	0.0	1131.7	531.7	230.2	250	300
	16.3	700	1,000	0.0	1131.7	431.7	186.9	200	250
	16.5	700	2,000	0.0	1131.7	431.7	186.9	200	250
	17.0	700	5,000	0.1	1131.6	431.6	186.9	200	250
	17.1	740	1,000	0.0	1131.6	391.6	169.5	200	250
	17.2	760	1,000	0.0	1131.6	371.6	160.9	200	250
	17.3	770	1,000	0.0	1131.5	361.5	156.5	200	250
	17.8	830	5,000	0.1	1131.5	301.5	130.5	150	200
Glenns Creek crossing	17.9	660	1,000	0.0	1131.5	471.5	204.1	250	300
	18.1	810	2,000	0.0	1131.4	321.4	139.2	150	200
	18.3	800	2,000	0.0	1131.4	331.4	143.5	150	200
	18.8	850	5,000	0.1	1131.3	281.3	121.8	150	200
	19.3	850	5,000	0.1	1131.2	281.2	121.8	150	200
	19.6	870	3,000	0.0	1131.2	261.2	113.1	150	200
	19.8	860	2,000	0.0	1131.2	271.2	117.4	150	200
	20.3	910	5,000	0.1	1131.1	221.1	95.7	100	150
	20.8	890	5,000	0.1	1131.0	241.0	104.4	150	200
	21.3	890	5,000	0.1	1130.9	240.9	104.3	150	200
	21.8	830	5,000	0.1	1130.9	300.9	130.3	150	200
	22.0	850	2,000	0.0	1130.8	280.8	121.6	150	200
	22.5	890	5,000	0.1	1130.8	240.8	104.3	150	200
	22.7	850	2,000	0.0	1130.7	280.7	121.6	150	200
	23.0	900	3,000	0.0	1130.7	230.7	99.9	100	150
	23.5	770	5,000	0.1	1130.6	360.6	156.1	200	250
	24.0	850	5,000	0.1	1130.5	280.5	121.5	150	200
	24.4	910	4,000	0.1	1130.5	220.5	95.5	100	150
	24.5	880	1,000	0.0	1130.5	250.5	108.5	150	200
	24.9	900	4,000	0.1	1130.4	230.4	99.8	100	150
	25.0	890	1,000	0.0	1130.4	240.4	104.1	150	200
	25.5	940	5,000	0.1	1130.3	190.3	82.4	100	150
	26.0	850	5,000	0.1	1130 3	280.3	121.3	150	200
	26.5	900	5,000	0.1	1130.2	230.2	99.7	100	150
	27.0	940	5,000	0.1	1130.1	190.1	82.3	100	150
	27.5	950	5,000	0.1	1130.0	180.0	78.0	100	150
	27.6	950	1,000	0.0	1130.0	180.0	77.9	100	150
KAWC distribution system gradient	27.7	950	1,000	0.0	1130.0	180.0	77.9	100	150

Type of Risk	Scenario KY Highway 55		Nominal Capacity of Pipeline
Conservative (1) **40 Year Projection** **K-A, WSWD, NSWD**	Total Cost LWC Cost (12/35) * K-A Cost (23/35) Potential LWC Revenue	$17,431,429 $11,465,714 $5,965,714 $73,400,000	35 MGD
Medium (2) **40 Year Projection** **K-A, WSWD, NSWD** **US60/T-ville**	Total Cost LWC Cost (12/35) * K-A Cost (23/35) Potential LWC Revenue	$17,431,429 $11,465,714 $5,965,714 $81,200,000	35 MGD
Aggressive (3) **40 Year Projection** **K-A, WSWD, NSWD** **US60/T-ville** **Shelbyville**	Total Cost LWC Cost (12/35) * K-A Cost (23/35) Potential LWC Revenue	$17,431,429 $11,465,714 $5,965,714 $190,700,000	35 MGD

* - 60-inch ESR to I-64; 36-inch out I-64 to Point of Delivery - LWC pays upsize to 60-inch, PS and Tank plus share of 36-inch as indicated

$2.0 LWC
$2.1 2.5
$1.5 upsize
$5.6 LWC
6.0 12/35 of 36" pipe
$11.6

SERVICE TO KENTUCKY-AMERICAN
ROUTE SCENARIOS

ROUTE	DESCRIPTION	MAIN SIZE	LENGTH L.F.	UNIT COST	TOTAL COST	SUMMARY
1	English Station Road, Urton Lane, I-265, I-64	60-inch	10,200	$375/l.f.	$3,825,000	
	I-64, Veechdale (Simpsonville) exit	48-inch	44,500	$300/l.f.	$13,350,000	
	2M Elevated Tank	N/A		N/A	$0.83/gallon	$1,660,000
	23 MGD Pump Station	N/A		N/A	$75,000/MGD	$1,725,000
						$20,560,000
	I-64, Veechdale (Simpsonville) exit	36-inch	44,500	$225/l.f.	$10,013,000	$17,223,000
2	English Station Road, US 60	60-inch	900	$375/l.f.	$337,500	
	US 60, Veechdale, I-64	48-inch	54,500	$300/l.f.	$16,350,000	
	2M Elevated Tank	N/A		N/A	$0.83/gallon	$1,660,000
	23 MGD Pump Station	N/A		N/A	$75,000/MGD	$1,725,000
						$20,072,500
	US 60, Veechdale, I-64	36-inch	54,500	$225/l.f.	$12,262,500	$15,985,000
3	English Station Road, Urton Lane, I-265, I-64	60-inch	10,200	$375/l.f.	$3,825,000	
	I-64, Jefferson County line	42-inch	25,200	$250/l.f.	$6,300,000	
	2M Elevated Tank	N/A		N/A	$0.83/gallon	$1,660,000
	23 MGD Pump Station	N/A		N/A	$75,000/MGD	$1,725,000
						$13,510,000
	I-64, Jefferson County line	36-inch	25,200	$225/l.f.	$5,670,000	$12,880,000
4	English Station Road, US 60	60-inch	900	$375/l.f.	$337,500	
	US 60, RR, Clark Station Road, Jefferson County line	42-inch	29,700	$250/l.f.	$7,425,000	
	2M Elevated Tank	N/A		N/A	$0.83/gallon	$1,660,000
	23 MGD Pump Station	N/A		N/A	$75,000/MGD	$1,725,000
						$11,147,500
	US 60, RR, Clark Station Road, Jefferson County line	36-inch	29,700	$225/l.f.	$6,682,500	$10,405,000

Recommended Improvements

bcc: Mr. Greg Heitzman, Mr. Robert Miller

LOUISVILLE WATER COMPANY

435 SOUTH THIRD STREET · LOUISVILLE, KENTUCKY 40202

TEL 502-569-3600 FAX 502-585-2806

JOHN L. HUBER
PRESIDENT

January 26, 1993

CONFIDENTIAL

Board of Water Works
Louisville, KY

Dear Directors:

RE: Kentucky-American Water Company's Water Resource Needs

Enclosed for your review is the information packet being released today by Kentucky-American Water Company concerning their future water supply needs. Mr. Edens is discussing the Least Cost Comprehensive Planning study with the Lexington-Fayette Urban County Council on January 26, 1993. In that meeting, he will outline Kentucky-American's intent to pursue a two-track decision tree for securing the needed additional water resources.

Also enclosed is the Louisville Water Company's position statement regarding the Kentucky-American proposals. Please contact me if you have questions or comments on the material.

Sincerely,

John L. Huber
President

jcm
enclosures

cc: Ms. Joan Riehm
Mr. Tim Firkins
Mr. Joseph Helm

LOUISVILLE WATER COMPANY

435 SOUTH THIRD STREET · LOUISVILLE, KENTUCKY 40202

TEL 502-569-3600 FAX 502-585-2806

JOHN L. HUBER
PRESIDENT

POSITION STATEMENT
January 26, 1993
CONTACT: Barbara Crow
Phone 569-3600

The Louisville Water Company is aware of the future water resource issues facing the Lexington area. We have had preliminary discussions with Kentucky-American Water Company, Lexington's water supplier.

Our first priority is to take care of the future water demands of our existing customers. Second, we are committed to the program established to extend water service throughout unserved areas of Jefferson County. No project will be considered that jeopardizes these positions.

The Ohio River is an abundant water resource, and we have available reserve production capacity.

Discussions with Kentucky-American will continue. Any commitment to this project will be based on extensive analysis and evaluation, and can only be done if providing wholesale service to Lexington at the Jefferson County line would benefit both communities.

Kentucky-American Water Company

WATER SUPPLY PROJECT

2300 Richmond Road, Lexington, Kentucky 40502 606-269-2386

Remarks by Robert Edens, Vice President
Kentucky-American Water Company to Lexington-Fayette
Urban County Council
January 26, 1993

Lexington-Fayette Council talk

Thank you for permitting me to be with you. I'd like to tell you where Kentucky-American Water Company stands today and where we hope to be tomorrow in order to provide safe, adequate and reliable water service to more than 230,000 persons.

What I'm about to say is covered in more detail in the material I'll leave with you. Included in that material is a summary of a 230 page report. That report was the result of an extensive and intensive least-cost comprehensive planning study that we conducted in 1992. Because we undertake such long range water supply planning, Kentucky-American is a valuable partner in the region's economic development efforts.

Before we talk about today and tomorrow, it's a good idea to take a look at yesterday. What has happened before must of necessity influence what path we will follow tomorrow.

The path we chose to take is an important one, because we are the pure water source for nearly all of Fayette County. We also directly serve parts of Woodford, Scott, Harrison and Bourbon counties. In addition, we provide water to two rural systems in Jessamine County, and to the cities of Midway and Versailles in Woodford County.

(More)

With very few exceptions, the area we serve has enjoyed a steady water supply. However, there was a severe drought in 1930, another in 1953, and a serious shortage in 1988. Since many of you lived through the 1988 emergency, I need not dwell on what a serious problem a water shortage poses to the entire community.

Our community has changed and, more to the point, our community has grown since these earlier crises. We must be realistic about the situation today. If a drought such as 1930 should recur, the area we serve could suffer a shortage of up to 15 million gallons of water per day.

Please let me assure you that we're doing everything in our power to keep such a situation from happening. There are several steps we can take to prepare for any emergency. I'll discuss those in just a moment. But first I'd like to tell you about our water quality and our existing facilities.

Water quality enjoys the highest priority with Kentucky-American. We carefully maintain and routinely update treatment facilities. We test continuously. We use our own laboratory and also make use of the American Water Works Service Company laboratory in Illinois. We perform more tests more often than government regulations dictate.

Our water-supplier neighbors in this region are aware of our quality reputation. We supply supplemental water to several of these suppliers and cooperate with all of them in several ways. As government regulation increases and gets more complex, we anticipate more small water companies will potentially ask for our help or perhaps to even merge with us. We embrace the same spirit of regional cooperation that you and other leaders showed when you made a success of the Lexington-Fayette Urban County Government.

However, although we work hard to be good regional neighbors, our major service area is Fayette County. That will continue to be the case. To provide service to you, we operate two surface water treatment plants.

One of these treatment plants is on Richmond Road, near two of our reservoirs. The other treatment plant is on the Kentucky River about 12 miles southeast of Lexington. The Kentucky River will figure prominently in our discussion today because it is the source of 80 percent of the water supplied to our service area.

We plan to make significant improvements at both treatment plants in the next few years. We will invest about $4.8 million in capital improvements to ensure a reliable water supply and to meet requirements of the federal Safe Drinking Water Act.

We store water from these treatment plants in 10 tanks, which have a total capacity of 12.84 million gallons. We distribute this water through about 1,200 miles of pipe that ranges in diameter from 2 inches to 30 inches. It will give you some idea of the extent of our service if you consider that we provide water to more than 5,300 public fire hydrants in Fayette County and more than 500 private hydrants in our service area.

That is a nuts and bolts word picture of our service system. But the most important part of that system is the end result -- the water we actually deliver to the homes and businesses of Lexington and Fayette County. That is the basis for the planning and action we must undertake within a very short time.

During 1991, our system delivered an average of 36.4 million gallons of water per day. The highest amount delivered that year was 56.4 million gallons a day.

Our studies show that our customers will require an average of 40.05 million gallons a day by 1996 and 39.6 million gallons a day by the year 2005. During a hot and dry period, the maximum demand will be 67.91 million gallons a day by 1996 and 68.24 gallons a day by the year 2005.

We were very careful and thorough in arriving at these projections. We examined many different factors and several demand scenerios. Among other things, we considered temperature, rainfall amounts, and the impact of price. We also researched population growth. Then we took into account water that is presently unaccounted for because of leaks or other factors.

We also figured in conservation and consumer education. We assumed continued use of intense leak detection programs and vigorous application of demand management techniques. Our research showed us that we can do several things to reduce demand for water. Among these things are the use of plumbing devices that save water and audits of commercial and industrial customers to help them make maximum use of the lowest possible volume of water.

All told, we figure that wise use and extensive conservation measures may save us four a half million gallons a day by the year 2005. This will not happen automatically. Every conservation program has a cost attached to it. What seems on
the surface to be a good idea must prove itself in a pilot program. Nonetheless, when all is said and done we can undoubtedly lower the amount of water we will need.

However -- and this is an important point -- no programs of which we are aware will replace our need to seek an auxiliary source of water for future use. The biggest challenge we face is to make an intelligent decision about where that water source will be.

As I mentioned a moment ago, we get 80 percent of our water from the Kentucky River. The rest comes from Jacobson Reservoir and with an emergency supply in Lake Ellerslie Reservoir. It seems logical to look first at the Kentucky River as an additional source of future water.

We at Kentucky-American Water and other groups have examined several options for future water supplies for this region. As most of you recall, local government and business officials formed a temporary regional committee after the 1988 drought.

That group, the Kentucky River Basin Steering Committee, was established specifically to plan for future regional water needs. The steering committee ordered a wide-ranging study that was funded in part by Kentucky-American.

In essence, that study included a plan to build two new dams on the Kentucky River, to repair existing locks and dams, and to replace three dams by the year 2050. It was estimated that the cost of the dams alone would be about $255 million. Those are 1991 dollars. In the same dollars, nearly another quarter billion dollars would be needed to fix all the locks.

There is no money currently available to pay for this work. Congress did approve spending $5 million in 1993 for dam repairs. Realistically, this is only a stopgap, short term measure.

There have also been suggestions by the Kentucky River Authority, which is the state body for matters concerning water supply. The Authority recently announced several possible plans of action. These plans range in estimated cost from $2 million all the way up to a quarter billion dollars.

The Authority also announced that it was considering charging a fee to those who take water from the river. The Authority said that these fees could pay for some or all of the needed improvements on the Kentucky River.

In the past, there have been other suggestions about ways to get more water from the Kentucky. However, these ideas have not led to action. Because of this, we did our own studies to help determine the best future water supply.

One option studied would use water from Pool 6 downstream of Lexington. This site is below where the Dix River feeds into the Kentucky. However, the Dix is impounded by a dam, which forms Herrington Lake. The Division of Water has indicated there is not enough evidence the Dix River will contribute significantly to the flow into Pool 6 during a drought situation. Also, any additional withdrawals from Pool 6 will be subject to stringent restrictions during low flow periods.

We have also looked at the Ohio River as a source of either raw or treated water. We looked at treating water by building our own treatment plant near the Ohio. We also checked about pumping raw water from the Ohio to our treatment facilities in Lexington.

There are a couple of factors we had to consider. It is more efficient to move treated water through a waterline than it is to move raw water. It is more cost effective to utilize existing treatment capacity than to expand it. These facts lead to another option.

We could build a 55 mile waterline from eastern Jefferson County to the western edge of our service area. This would eliminate our need to expand our treatment facilities or build new ones. We would purchase treated water from the Louisville Water Company. We could share this water with others along the route of this pipeline if there is an expressed interest and a need.

The cost for this waterline project would be about $48 million. We estimate we could have this waterline in operation by 1997. We could move enough water through the waterline to help supply the community's needs when we face a future drought condition.

I have talked about the future several times. But I don't want to mislead you into thinking I am talking about some time in the faraway future. If we are to meet tomorrow's needs, we must make some decisions very soon. Here's our timetable.

Any design work that is required should be underway by the spring of 1994 -- that's barely more than a year away. Actual construction of whatever project we undertake should begin by the spring of 1995, so that we can have an additional source available by very early in 1997.

We hope to be as flexible as possible in order to reach the adequate water goal that everyone desires. To do this, we have formed a Water Supply Project team.

This team has a dual mission. First of all, it will evaluate any efforts that would result in the two new dams being built on the Kentucky River. However, these proposals could take too long to complete. The team will also examine the Ohio River alternative, which is an attractive and doable option.

If the proposed new dams on Kentucky River can be completed in time to meet projected customer demand by 1997, we would reevaluate our efforts to build the Ohio River waterline. If the various projects proposed for the Kentucky River fail to come about, we would be ready to proceed with the Ohio River waterline.

That's where we stand today. I'm well aware that we have covered a lot of ground in this brief discussion. It might be helpful to summarize the situation with a few slides.

(1) Kentucky-American Water Company enjoys a longtime relationship with Lexington and Fayette County. We began serving the community in 1885 with just 222 customers.

(2) Today we serve 230,000 persons in a six-county Central Kentucky region. We provide this service through an extensive system.

(3) We utilize 1,200 miles of pipe, have two treatment plants, two reservoirs, and 10 storage tanks with a capacity of 12.84 million gallons. Additionally, there are more than 5300 public fire hydrants in Fayette County and 500 private hydrants in the service area.

(4) About 80 percent of our current water supply comes from the Kentucky River. We must find an additional source of supply. Here are the reasons why.

(5) By the year 2005, our average water needs will increase to 39.6 million gallons per day. That's compared to 36.4 million gallons in 1991. On a hot, dry day, peak water usage will go from 56.4 million gallons per day to 68.25 million gallons. If we have a drought like those in the past, our customers could face a shortage of 15 million gallons per day.

(6) To meet these future needs, we will follow one of two courses. If it is practical to do so, we support prompt building of the new dams on the Kentucky River. If that doesn't work out, we could turn to a waterline from the Ohio River. This is an attractive option. It would provide a virtually unlimited source of water for future needs.

(7) We are flexible. We want to do what is best for the region we serve. That's why we've formed a Water Supply Project Team to work toward a solution. We need to make a decision by the spring of 1994 -- just a little more than a year from now. Our goal, which I'm sure you share, is to continue to furnish an adequate supply of water to all existing local residents and meet the needs of planned economic growth in the area.

(8) That's a very concise summary of where we are today and where we hope to be heading tomorrow. Thank you for the opportunity to share this information with you. I'd be happy to answer your questions.

#####

KENTUCKY-AMERICAN WATER COMPANY
1990 DEMAND MANAGEMENT PLAN

SUMMARY

JANUARY 1993

Kentucky-American Water Company

WATER SUPPLY PROJECT

1. Estimated daily flow of the Kentucky River and what percentage of that flow we are taking from the river.
2. Water available in reservoirs and the river pool.
3. Customer demand compared with water treatment plant capacity.

These three factors are key, but they are not the only ones considered.

Kentucky-American management also looks at such things as time of year, temperature and rainfall forecasts.

This initial activity is called the "preliminary watch". We maintain this watch from early Spring to late Fall.

WATER SHORTAGE RESPONSE PROGRAM — LEVELS OF ACTIVITY

If our watch shows a problem is coming, we will tackle that problem with five levels of action. As things become more serious, we take more vigorous steps.

These situations and responses are highlighted in the table that is part of this report. We would move in sequence from one response to another and let you know what was coming step by step.

There isn't room in this brief report to tell you all the steps we will take or ask you to take. In general, the steps range from requests for minor and voluntary reductions in water use to (should things really be serious) government-enforced rationing of water.

We hope a water shortage does not recur. But if it does, we are ready — with your help — to meet the problem with a minimum of hardship to you.

RETURN TO NORMAL

If we ever face a water shortage, we would return to normal operation gradually. We would ask you to resume normal use of water step by step. We would do this to avoid an artificial shortage that could be created if everyone rushed to normal usage all at once.

KEEPING EVERYONE INFORMED

If we ever face a problem, we will provide constant and current reports through the media. We will also fully inform your elected and appointed officials.

If you would like a copy of the complete Demand Management Plan, please contact us.

Some terms used

MGD - Million Gallons per Day

Customer demand - Amount of water being used by customers

Withdrawal demand - Amount of water being taken from the Kentucky River

KENTUCKY-AMERICAN WATER COMPANY

1991 KENTUCKY RIVER AQUATIC STUDY TO SUPPORT INCREASE IN PERMIT TO WITHDRAW WATER

SUMMARY

JANUARY 1993

THE STUDY — WHO DID IT AND WHAT WAS DONE

Kentucky-American retained Environmental Science and Engineering Inc. (ESE) to do the study. ESE focused on a 111 mile stretch of the Kentucky River. This area reaches from river Pool 9 (where we withdraw water) downstream to near Frankfort (Pool 4).

The study looked at municipal and industrial intake and discharge points, and at boat docks. It also examined water quality.

ESE staff members took fish and macroinvertebrate (such as small insects and insect larvae) samples and water quality measurements. They reviewed historical data. ESE also ran extensive computer models to simulate many what-if conditions. ESE devoted more than 17 months to the study.

THE STUDY FINDINGS

The final study report contains more than 400 pages of text, tables and other data. Among the findings:

- Downstream users shouldn't be harmed by a 7 MGD increase in withdrawals at Pool 9. Our approved withdrawal is for a 5 MGD increase.
- Simple leakage from dams on the river will sustain a minimum water flow of 50 cubic feet per second (cfs). Note: 1.55 cfs equal 1 MGD.
- Dissolved oxygen concentrations averaged for the depth of the pool should remain above the state standards with this additional withdrawal. (Dissolved oxygen is needed for healthy aquatic life.)
- Concentrations of dissolved oxygen on the bottom of the river will be below the state standard. Anaerobic (no oxygen) conditions in Pools 8 and 9 could occur if water flow is low for a long time.
- Water could be taken from a pool causing the water level to drop below the dam's crest as long as low flows don't occur for more than 30 days.
- Low river flows aren't expected to harm macroinvertebrates. (Fish feed on these type of microorganism creatures.)
- Low river flows should have only minimal impact on the fish habitat in the Kentucky.

REVIEW AND REQUEST

The ESE aquatic study and findings were provided to the DOW in support of our request to have the water withdrawal level increased to 60 MGD and the minimum passing flow requirements reduced to 50 cubic feet per second during low periods.

A copy of the complete study is available for your review.

Kentucky-American Water Company
2300 Richmond Road, Lexington, KY 40502 • 606/269-2386
Jan Davie, Community Relations Manager

Kentucky-American Water Company

2300 Richmond Road. Lexington. Kentucky 40502 606-269-2386

WATER SUPPLY PROJECT

KENTUCKY-AMERICAN WATER COMPANY

WATER SUPPLY PROJECT GLOSSARY

7Q10 — a standard used to regulate both withdrawals from and discharges into a flowing body of water — in this instance, the Kentucky River. It is the lowest average water flow that would be expected to occur for seven consecutive days in a 10 year period.

Anaerobic conditions — an environment occurring without free oxygen. Water contains a level of dissolved oxygen which supports a variety of species. It is maintained in free flowing streams but will dissipate in stagnant water.

Base Case — the standard used for the demand projection that represents a normal, average year.

Booster station — a pumping facility used to maintain water pressure along a length of transmission main.

Clearwell — a holding tank for treated water located at a treatment facility.

Cool/Wet Weather — the standard used for the demand projection that corresponds with the lowest monthly average temperature and the highest number of non-irrigation days in each month averaged from 1982-1991.

Cubic Feet per Second (cfs) — a measurement of water flow volume. Currently, Kentucky-American is authorized by the DOW to withdraw 60 million gallons, or 92 cubic feet per second, of water a day from the Kentucky River. Reduction in the withdrawal amount begins when river flow drops to 140 cfs.

Customer demand — amount of water used by our customers.

Demand Projection Sensitivity Analysis — a number of factors were utilized to project demand in a computer model: population projections, commercial growth, per capita usage based on dwelling type and unaccounted for water amounts; to determine the sensitivity of the demand projection to changes in the factors, each factor was varied slightly in the model as part of the analysis.

Demand Scenarios — The following six variations of factors that were used in the sensitivity analysis of the demand projections: 1) base case; 2) cool, wet weather; 3) 16 percent unaccounted for water (base case used 13 percent); 4) prediction interval; 5) hot and dry with prediction interval; and 6) hot and dry weather with prediction interval and 16 percent unaccounted for water.

Disinfection — the process of adding to water an accurately measured amount of a chemical substance, such as chlorine or chlorine product, chloramine, to water to kill any harmful bacteria, thus making the water safe to drink.

DOW — the state Division of Water. This government agency regulates drinking water and raw water sources. It is also charged with protecting ground and surface water by regulating withdrawals from sources and discharges into sources.

Easement — a document allowing a utility company (e.g., water, electric, gas, cable TV) to install and maintain facilities, often underground, on private property.

Filtration — the process of passing water through layers of material, such as sand or gravel, to remove impurities from the water before delivering it to the consumer.

Finished water — water that has been purified and disinfected and is ready for customer use. Also called drinking water, tap water, treated water or potable water.

GPD — gallons per day. A measure of water flow volume.

GPM — gallons per minute. A measure of water flow volume.

Gradient — a measure of the water pressure at any given point in a water distribution system, given in feet above sea level. It is the height that water would rise in a vertical tube as a result of the available water pressure.

Hardness — the degree of minerals in water. Hard water leaves a white residue on glassware and in boilers. It is caused primarily by the presence of calcium and magnesium salts in the water. Some water softeners used in the home reduce minerals but add sodium to the water. This is significant for consumers who require a low sodium diet.

Harza — the engineering firm that conducted a study of possible solutions to the long-term regional water supply problem in the Kentucky River Basin. The study was commissioned by the Kentucky River Basin Steering Committee and partially funded by Kentucky-American.

Hot/Dry Weather — the standard used for the demand projections for hot and dry weather conditions. It determined by using the highest average temperature and the lowest monthly precipitation for each month from 1982-1991.

Interconnection — the physical connection between two companies' pipeline systems.

Jacobson Reservoir — a Kentucky-American reservoir on Richmond Road that impounds untreated water from East Hickman Creek. The reservoir is supplemented by a pipeline from the Kentucky River and holds this water for treatment and ultimate use by our customers.

Kentucky-American — Kentucky-American Water Company (KAWC).

Kentucky River Authority (KRA) — the governing body established by the Kentucky Legislature in 1986 to manage water within the Kentucky River Basin.

Kentucky River Basin — the land area from which all precipitation flows to the Kentucky River. It extends from Beattyville to Carrollton where the Kentucky River joins the Ohio River. There are more than a half million people in the Basin area, 411,000 of which are dependent on the river as their water source.

Kentucky River Basin Steering Committee — a regional committee established following the summer drought of 1988 to evaluate the long range water supply options for communities served by the Kentucky River.

Lake Ellerslie Reservoir — a Kentucky-American reservoir on Richmond Road that impounds untreated water from West Hickman Creek and holds it for purification and ultimate use by our customers during emergencies.

Lost and Unaccounted for Water — the difference in the amount of water pumped and the amount used by customers. Most lost and unaccounted for water is caused by small leaks in distribution pipes. It also includes illegal, unmetered taps and unmeasured quantities of water drawn from fire hydrants and private fire services that are not included in the fire departments' estimates of usage.

LWC — Louisville Water Company.

Mark-out — the process of identifying and marking the location of underground facilities by painting marks on the road surface or curbs.

Meter Box — a tubular enclosure installed underground outside of a home. The enclosure contains a meter to measure the amount of water used.

Meter Vault — an underground structure housing equipment such as valves, meters and backflow preventers on various types of service lines.

MGD — million gallons per day. A measure of water flow volume.

mg/L — milligrams per liter. mg/L is equivalent to parts per million. Used to measure concentrations of substances in water.

Peak demand — the most water used by our customers in a given time period.

pH — a measure of the hydrogen ion concentration in water. pH signifies the acidity or alkalinity of water. A pH value below 7.0 is acidic. A pH value above 7.0 is alkaline. Most natural waters have pH values between 5.5 and 8.6. The pH factor of Kentucky-American treated water is 7.83.

Pool # — pool of water created by one of the 14 locks and dams along the Kentucky River. Pool #9 is where Kentucky-American Water Company's intake is located. The intake is in Fayette County at river mile 167.3.

Potable Water — water which is safe to drink. Also called tap water, treated water or finished water.

PPM — parts per million. A measure of the concentrations of substances in water.

Prediction Interval — used a regression analysis of historical max/ratio as opposed to the historical average max/average day ratio in the base case fit to a confidence factor.

PRV — pressure reducing valve.

PSI — pounds per square inch.

Public Service Commission — a state government agency headed by an appointed, three member panel which sets rates and approves operating regulations for all privately-owned utilities in Kentucky.

Qualified Bidder — a contractor who, by ability, past performance and sufficient insurance coverage, is determined to be capable of completing the work and is permitted to bid on the installation of company facilities.

Raw water — untreated water.

Reservoir — a natural or artificial basin of water.

Retrofit kits — packages of water saving devices which are used with plumbing fixtures to reduce water usage. Kentucky-American kits contain two flow restrictors and a water displacement bag for toilet tanks (includes two leak detector tablets).

Right of Way — property adjacent to a roadway that is owned by local, state or federal government.

Road Opening Permit — permission obtained from the town, county or state to disturb a road surface in order to install or repair company-owned water lines.

Safe Yield — an amount of water available on a daily basis for withdrawal during a drought period. Kentucky-American's safe yield of the Kentucky River and Jacobson Reservoir combined is 35 MGD during a drought of record - 15 MGD below the 50 MGD average day demand projected over a drought period.

Softening — the removal of chemicals which cause water to be hard. Calcium is most responsible for hardness. Home softening units usually replace calcium ions with sodium ions. This is significant for consumers who require a low-salt diet.

Stand Pipe — a type of above ground tank that begins at ground level and is used to hold water. Also referred to as "ground storage".

Static Pressure — the pressure of water measured at one point in a distribution system when water is at rest in the system.

Surface Water — water contained in lakes, ponds, rivers, etc.

Transmission main — a pipeline used for distributing water from one point to another. Most often refers to large volumes of water.

Treatment — the process of producing finished water.

Treatment deficit — the difference between the availability of raw water and the ability to produce finished water.

Turbidity — a measurement of water clearness and its ability to allow light to pass through it. Turbid water may appear cloudy. Water may have a high color value and still have a low turbidity.

Turbulence — a large amount of air in the water, which creates a disturbance.

Valve — a device to stop and start the flow of water in a pipe.

Vault — See "Meter Vault."

Venturi Meter — a device for measuring the flow of water. Most commonly used for large volumes of water flow.

Water district — not-for-profit water suppliers that are privately owned and governed by the PSC. They are usually formed to provide water to rural areas and are often eligible for government assistance.

Water purveyor — an entity which supplies water, such as a district, company or municipality.

Withdrawal demand — amount of water taken from the Kentucky River by all sources, including Kentucky-American.

Kentucky-American Water Company

WATER SUPPLY PROJECT

2300 Richmond Road, Lexington, Kentucky 40502 606-269-2386

NEWS RELEASE

Contact: Jan Davie
606/268-6332

LEXINGTON, Ky. -- (Jan. 26, 1993) Kentucky-American Water Company presented its 1992 Least Cost Comprehensive Planning Study to the Lexington/Fayette Urban County Council today. The report is a review of investments needed over the next five and 15 year planning periods to maintain water quality, improve service, accommodate growth in the service area and meet existing and projected supply demands of its customers.

The study identifies nearly $88 million dollars in needed projects over the time period. $68.5 million would be spent in the first five years with 70 percent of that going for an improved water supply. The remainder of the dollars throughout the 15 year planning period would be used to add 10.75 million gallons of storage capacity, install nearly 70 miles of mains and make improvements to meet water quality standards and new regulations.

"The study makes it clear that our projected customer demand for 1993 exceeds our ability to treat sufficient quantities of water by 2.6 million gallons per day and it will increase to 4.5 million gallons per day by 1997," said Bob Edens, vice president and manager of Kentucky-American Water Company in explaining the reason for the water supply priority. "A water supply shortage of 15 million gallons a day could occur during a prolonged drought," Edens said. The projected shortfalls took into account the continuing effects of voluntary and mandated conservation efforts of customers.

(More)

A review of supply options in the study indicated that buying treated water from Louisville Water Company and pumping it along a 55 mile waterline would be the lowest cost, most practical and feasible involving the Ohio River as a new source. Edens noted "The Ohio River as a water source has not been fully developed." He added residential, industrial and recreational growth pressures are a limiting factor in the Kentucky River remaining a reliable water source. "While work continues on finding ways to improve the river as a supply, we must be prepared to meet our customers' needs," he said. Edens also pointed out that sufficient water supply is vital for the economic development efforts of the region.

Edens said the water supply plans contained in the Kentucky River Authority Water Withdrawal Fee Study would also be factored into any final decision the company makes. "We are especially interested in the KRA plan that proposes building two new dams built at #10 and #12 by 1998," he said. "Studies we've been a part of show those dams would definitely give us the supply we are looking for, but funding and construction timelines are the biggest concerns." Edens also noted that if the two new dams are built, Kentucky-American would also need to expand or build treatment facilities and other infrastructures. "Those costs, along with any withdrawal assessments by the Authority on our customers, would be a major factor in the analysis," he said.

The waterline option detailed in the company's Least Cost Comprehensive Planning Study would carry between two and 15 million gallons of treated water a day, depending on Kentucky-American's customer demand.

Other supply options evaluated in the Kentucky-American study, but judged more costly, less practical, or simply not feasible, included building a supplementary water supply intake in Pool 6 of the Kentucky River, and two other Ohio River waterline plans that would have required building new treatment facilities or pumping raw water to Lexington for treatment at expanded facilities. Kentucky-American was also a part of the Kentucky River Basin Steering Committee that reviewed 27 regional water supply alternatives.

Edens told the council that the company had formed a Water Supply Project team that would be following a "decision tree" approach to determining a final supply solution. "We have about 16 months before construction on some solution must begin," he said. "1997 isn't that far away." To keep on schedule, the team has begun negotiations with Louisville Water Company, is reviewing waterline routes and will work on easement acquisitions while at the same time monitoring the Kentucky River Authority progress on building the two new dams on the river.

In relation to the several plans being considered to build new dams, Edens told the Council that "as long as those solutions are available in time" they remain an option for meeting his customers' future water supply needs. Edens said the company supports long-range plans for repairing existing locks and dams on the Kentucky River as well as building new dams. "We presently get 80 percent of our water from the river and have a huge investment there in intake systems, filtration plants, and pumping stations. This does not include our investment in the two reservoirs, which supplement our river supply."

"The bottom line is that we must have a safe, adequate, and reliable supply of water to meet our customer demands at an affordable price," Edens said.

Kentucky-American Water Company either directly serves or supplies water to customers in Fayette, Harrison, Bourbon, Woodford, Scott and Jessamine counties. Population projections developed by the University of Louisville Urban Studies Institute show 10 percent growth in the service area from 1990 to 2020.

# # #

KENTUCKY-AMERICAN WATER COMPANY

1992 LEAST COST/COMPREHENSIVE PLANNING STUDY

SUMMARY

JANUARY 1993

Kentucky-American Water Company

WATER SUPPLY PROJECT

There is an attractive alternative. We could purchase treated water from the Louisville Water Company. Their water is obtained from the Ohio River, which represents a virtually unlimited source. We would bring this water to our service area through a waterline.

We propose to pursue this option at the same time we continue to support other possible projects on the Kentucky River. That's why we have formed a Water Supply Project Team. For the next 16 months, the team will continue to examine the waterline option and the progress by the Kentucky River Authority toward building two new dams on the Kentucky River. By May 1994, we'll make a final decision on going forward with the best option in order to meet our 1997 deadline for increased supply.

If a Kentucky River project works out to meet projected customer demand by 1997, we would reevaluate our waterline efforts. If the new dams on the Kentucky River do not materialize soon enough, we would be ready to gain the needed supply from the Louisville Water Company.

EXAMINING THE OPTIONS

After the 1988 drought, government officials formed a temporary regional committee: the Kentucky River Basin Steering Committee. Its job was to plan for future regional water needs. This committee commissioned a study by the Harza Engineering Company which was funded in part by Kentucky-American.

That study favored a plan to build two new dams on the Kentucky River, to repair existing dams and locks, and to replace three dams by the year 2050. It was estimated that the cost of the new dams alone, in 1991 dollars, would be $255 million.

Fixing the locks would nearly double that amount. No money to pay for this work exists now, however the Kentucky River Authority is currently considering charging fees to all who take water from the river and its tributaries (excluding agricultural needs) in order to pay for some or all of the improvements.

Other proposals to get more water have surfaced in the past, but none materialized. Because of this, we did our own studies to seek a future water supply.

One option studied included utilization of water from lock pool #6 downstream from where the Dix River feeds into the Kentucky River. However, the Dix is impounded by a dam, which forms Herrington Lake. The Division of Water has indicated there is not enough evidence the Dix River will contribute significantly to the flow into Pool 6 during a drought situation. Also, any additional withdrawals from Pool 6 will be subject to stringent restrictions during low flow periods.

We have also looked at the Ohio River as a source of either raw or treated water. We examined treating water by building our own treatment plant near the Ohio and pumping it through a waterline to our service area. We also checked pumping raw water from the Ohio for treatment in our Lexington facilities

It is more efficient, however, to move treated, rather than raw water through a waterline. It is more cost effective to utilize existing treatment capacity than expand it.

The most cost effective Ohio River option would be to build a 55 mile waterline from eastern Jefferson County to the western edge of our service area and purchase treated water from the Louisville Water Company. This would eliminate the need to expand our existing treatment capacity. We could also share this treated water with others along the route of the waterline if there is an expressed interest and need.

The cost for such an undertaking would be about $48 million. The waterline would be large enough to supply the necessary 15 million gallons a day shortage we project during drought conditions. It could be in operation by 1997.

Kentucky-American Water Company

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WATER SUPPLY PROJECT

WATER SUPPLY PROJECT FACT SHEET

KENTUCKY-AMERICAN WATER SYSTEM DATA

Service area: Fayette, Harrison, Woodford, Bourbon, Scott and two water systems in Jessamine County.

- 1991 Customers: 77,942 (approx. 230,000 people)
- 1,200+ miles of waterline (Year-end 1991)
- 10 storage tanks with 12.84 million gallons (mg) capacity
- Clearwell storage at treatment facilities: 4.0 mg
- 5,300 public fire hydrants in Fayette County
- 500 hydrants which are private or located outside Fayette County
- Rated treatment capacity: 65 million gallons a day (mgd) (Kentucky River Station = 40 mgd; Richmond Road Station = 25 mgd)
- Water Sources: Kentucky River, Jacobson Reservoir, Lake Ellerslie Reservoir

CUSTOMER WATER DEMAND

- 1988: (actual) average daily use 36.7 mgd, peak use 63.9 mgd
- 1991: (actual) average daily use 36.4 mgd, peak use 56.4 mgd
- 1996: (forecast)[1] average daily use 40.05 mgd, peak use 67.91 mgd
- 2005: (forecast)[1] average daily use 39.60 mgd, peak use 68.25 mgd

[1] Forecasts include potential water savings of .92 mgd in 1996 and 2.77 mgd in 2005 due to new plumbing codes. This also assumes a hot/dry situation.

WATER SUPPLY PROJECT OPTIONS

Two options seem the most promising.

1. Buy treated water from the Louisville Water Company and pump it through a waterline that would run from eastern Jefferson County to western Fayette County.
2. Use improved water supply resources of the Kentucky River if the new dams proposed by the Harza Study can be financed and built in time to meet our projected 1997 customer demand; expand treatment facilities and other infrastructures to handle the additional water.

WATERLINE OPTION DESCRIPTION

The proposed waterline will be 55 miles of 36 inch pipe with as many as three booster stations located between Jefferson and Fayette Counties. We would purchase between 2 and 15 million gallons a day of treated water from Louisville Water Company depending on customer demand.

Waterline Option Timing

1993 through 1994

- Monitor progress of the Kentucky River Authority on new dams
- Negotiations with Louisville Water Company on water purchase agreement
- Route selection
- Waterline/booster stations engineering design
- Discussions with water districts and other entities along the waterline route to determine water service interest and final waterline size
- Meet with landowners along route/sign easement agreements
- Permitting
- Obtain PSC certificate of convenience and necessity

1995 through 1996

- Waterline construction

1997

- Waterline in service
- Waterline Option Cost — Approximately $48,300,000

Purchasing and pumping treated water from Louisville Water Company to our service territory means no construction or expansion of Kentucky-American's production facilities. This represents a savings to our customers and shareholders of more than $30,000,000 (1992 dollars) compared to the alternate Ohio River waterline project considered in our comprehensive planning study.

Rate Impact

Current Average Residential - $47.30 per quarter (Based on 5750 gallons per month)
Forecast Average Residential - $61.49 to $62.44 per quarter (Based on 5750 gallons per month)

Environmental Considerations

The proposed waterline route will follow existing utility easements for many of the 55 miles in order to avoid disturbance of environmentally sensitive areas. Regular meetings with landowners, local officials and local citizens groups are planned throughout the project to ensure environmental protection. Once complete, the waterline will undergo the same careful scrutiny and maintenance as performed on the 1,200 plus miles of waterline we currently manage.

KENTUCKY RIVER ALTERNATIVE PLAN DESCRIPTION

The Kentucky River Authority Water Withdrawal Fee Study released December 17, 1992 focused on two proposals originally identified in the Harza Study. Both alternatives featured the building of new dams at lock and dam #10 and #12 which would create enough water supply to offset the projected deficit, not only for Kentucky-American's service area but for the entire river basin.

Kentucky River Option Timing

Two timing alternatives were presented for each proposal. Due to their significance to Kentucky-American's water supply issue, only the timelines presented for new dam construction at #10 and #12 are critical. The proposals indicate construction on the dams would begin as early as 1993 or as late as 2008. The KRA study also indicated that project priorities may be rearranged as discussions continue.

Kentucky River Option Cost (1991 Dollars)

KRA Proposals 2-4a(A) and 2-4a(B) project a combined cost of $54,360,000 for new dams at site #10a and #12.

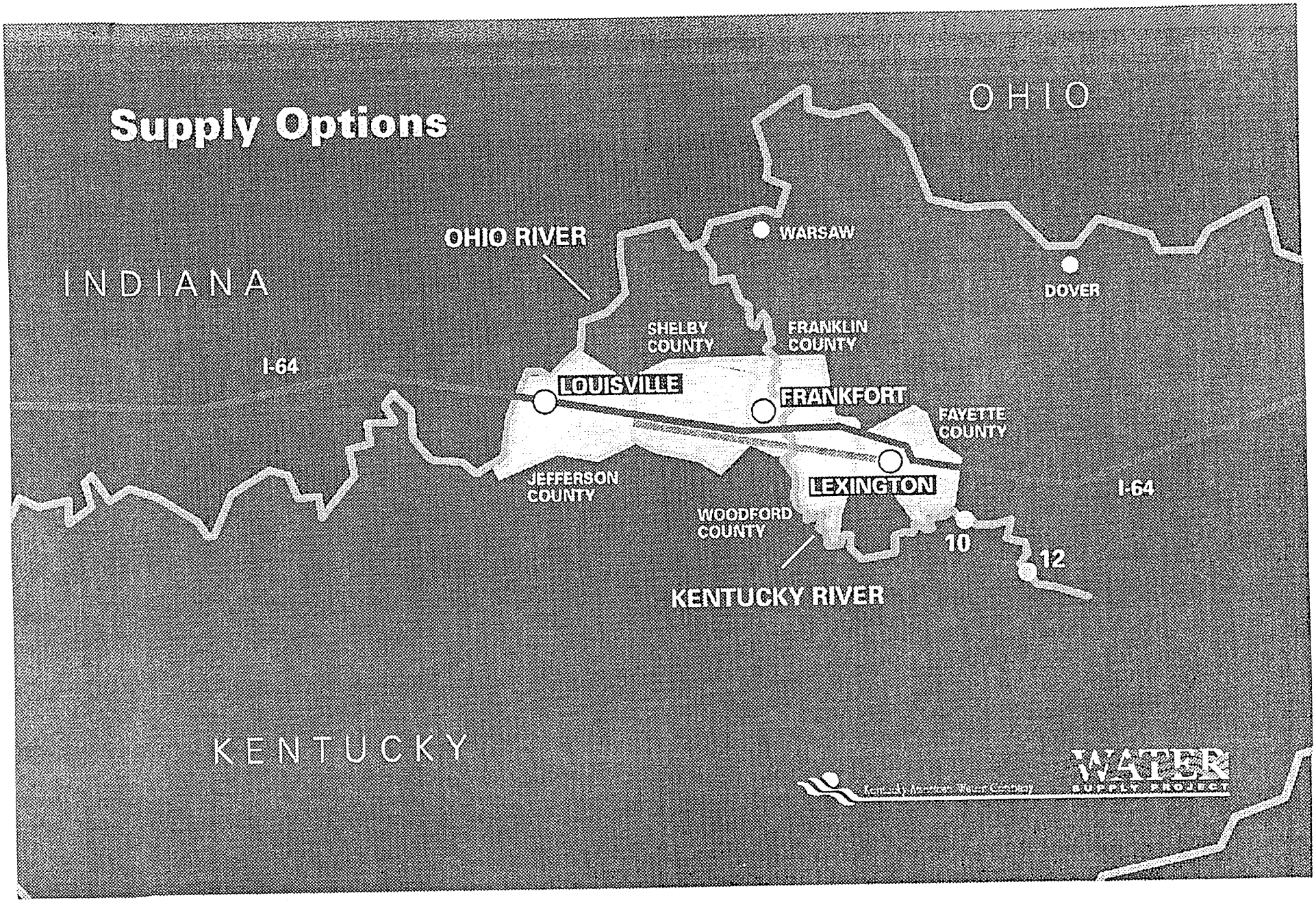
KRA Proposals 2-8A and 2-8B project a combined cost of $53,230,000 for new dams at #10 and #12 . (The new dam at #10 in these proposals would be 11 feet lower than in proposals 2-4a(A) and 2-4a(B).)

Rate Impact

Rate impact would be based on water withdrawal user fees and bond amortization schedules selected by the KRA. This can not be determined until a regional water supply solution is selected.

Environmental Considerations

The Harza study notes that construction of major new dams on the river could have both adverse and beneficial impacts on river resources. The study recommends collection of baseline data on all water, land and cultural resources within the river basin. The primary studies to be done are: Water and Sediment Quality; Fish, Wildlife and Botanical Resources; Historic and Archaeological Resources; and Recreation Resources.


Supply Options
OHIO
INDIANA
KENTUCKY
OHIO RIVER
WARSAW
DOVER
SHELBY COUNTY
FRANKLIN COUNTY
I-64
LOUISVILLE
FRANKFORT
FAYETTE COUNTY
JEFFERSON COUNTY
LEXINGTON
I-64
WOODFORD COUNTY
10
12
KENTUCKY RIVER
WATER

Kentucky-American Water Company

WATER SUPPLY PROJECT

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Policy Statement on
The Kentucky River Basin Steering Committee
Recommended Long-Range Plan

* We support improvements on the Kentucky River since it is our main water source. We have hundreds of millions of dollars already invested in pumping stations, treatment plants, laboratories, waterlines.

* The Kentucky River Basin Steering Committee's recommended long-range plan called for the construction of two or three new dams with the assumption that locks and/or dams 5-14 be replaced over the next 50 years. Total cost for this plan is $255 million without locks and $455 million with locks.

* There is no money currently available to pay for this work. Historically, projects of this magnitude often take decades to fund and complete. Congress did approve spending $5 million in 1993 for dam repairs. Realistically, this is only a stopgap, short term measure.

* The key element is that by 1997, Kentucky-American Water Company has to have an additional 15 million gallons a day to adequately serve our customers.

* We view the $48 million waterline connection with Louisville Water Company as the most practical, feasible and affordable alternative. With it, we can assure our customers of having sufficient treated water by 1997.

* If we have adequate assurance by May 1994 that the state and the federal government will commit the $60 million to $100 million dollars needed to build the new dams in Pools 10-12 (with or without locks) by 1997, we could put the Kentucky-American/Louisville Water Company waterline on hold.

Kentucky-American Water Company

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WATER SUPPLY PROJECT

Waterline Option
Service Policy

* Kentucky-American's principle objective is to ensure adequate supply for our existing customers. This is the reason for constructing the waterline.

* Constructing the waterline provides an opportunity for individuals wanting service, or water suppliers needing additional capacity, to purchase water from Kentucky-American. We want to explore new service with all interested parties. The waterline can be sized to accommodate their needs.

* Kentucky-American will not provide service to existing customers of another water company or district unless ordered to do so.

* Service terms will be consistent for all customers and rates will be compatible with what current Kentucky-American customers are paying. Detailed water service options will be available after we have discussed this issue with affected parties along the route. Kentucky-American's schedule of rates must be approved by the Kentucky Public Service Commission.