

# Rubin & Hays

ATTORNEYS AT LAW

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CHARLES S. MUSSON  
W. RANDALL JONES  
CHRISTIAN L. JUCKETT

April 24, 2015

Mr. Jeff Derouen  
Executive Director  
Public Service Commission  
P.O. Box 615  
Frankfort, Kentucky 40602

RECEIVED

APR 27 2015

PUBLIC SERVICE  
COMMISSION

Re: Beech Grove Water System, Inc. PSC Application

Dear Mr. Derouen:

Enclosed please find the original and ten (10) copies of the Application of the Beech Grove Water System, Inc., for a Certificate of Public Convenience and Necessity to construct and finance a water system improvements project pursuant to KRS 278.020 and 278.300.

Also enclosed are eleven (11) copies of the exhibits required pursuant to 807 KAR 5.001.

If you need any additional information or documentation, please let us know.

Sincerely,

Rubin & Hays

By   
W. Randall Jones

WRJ:jlm  
Enclosures

cc: Ms. Sheila Murphy, Beech Grove Water System

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**RECEIVED**

APR 27 2015

PUBLIC SERVICE  
COMMISSION

In the matter of:

**APPLICATION OF THE BEECH GROVE )**  
**WATER SYSTEM, INC. FOR A CERTIFICATE OF )**  
**PUBLIC CONVENIENCE AND NECESSITY )**  
**TO CONSTRUCT AND FINANCE A WATER ) Case No. 2015 - \_\_\_\_\_**  
**IMPROVEMENTS PROJECT PURSUANT TO )**  
**KRS 278.020 AND 278.300 )**

**APPLICATION**

The Beech Grove Water System, Inc. (the "Applicant"), by counsel, pursuant to KRS 278.020, petitions the Commission for a certificate of public convenience and necessity to construct a waterworks improvement project and finance said project. The following information is filed in accordance with the Commission's regulations:

1. The Applicant is a non-profit corporation of McLean County, created and existing under the provisions of Chapter 273 of the Kentucky Revised Statutes. The Applicant was incorporated in the Commonwealth of Kentucky on March 13, 1970 and is currently in good standing with the Kentucky Secretary of State. The Association is now, and has been since its inception, regulated by the Commission, and all records and proceedings of the Commission with reference to the Association are incorporated in this Application by reference.

2. The governing body of the Association is its Board of Directors, with power to make contracts in furtherance of its lawful and proper purpose as provided for in KRS Chapter 273 and all applicable law and regulations.

3. The mailing address of the Association is as follows:

Beech Grove Water System, Inc.  
c/o Ms. Sheila Murphy, Manager  
445 State Route 56N  
Calhoun, Kentucky 42327  
Telephone: (270) 273-5738  
Fax: (270) 273-5007  
Email: [beechgrovewaters@bellsouth.net](mailto:beechgrovewaters@bellsouth.net)

3. A description of the Applicant's water system and its property stated at original cost by accounts is contained in its 2013 Annual Report, which is incorporated by reference pursuant to 807 KAR 5:001 Section (11)(5). All required normal financial schedules and other data are in the Annual Report;

4. The water improvements project which is the subject matter of this Application consists of the acquisition and installation of a complete AMI (Advanced Meter Infrastructure) system for a total of 566 new Zenner meters (see meter specifications attached hereto as **Exhibit "A"**) throughout the Beech Grove community (the "Project") (see the Qualified Provider Agreement between the Applicant and Shambaugh & Son, LP (the "Agreement") attached hereto as **Exhibit "B"**. ;

5. The Applicant published a Request for Proposals/Qualification for a Guaranteed Savings Contract in the Messenger-Inquirer on August 22, 2014 and received a response from EMCOR Construction Services (parent company of Shambaugh & Son, LP). An affidavit of publication is attached hereto as **Exhibit "C"**. A portion of the Proposal of EMCOR is attached hereto as **Exhibit "D"**;

6. The Project is in the public interest and will improve the Applicant's system and provide accuracy and timeliness in meter readings;

7. The total project cost is approximately \$515,000, as forth in the Sources and Uses of Funds attached hereto as **Exhibit “E”**;

8. No easements are necessary for the Project;

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

10. Based on these facts, the Applicant believes that it is in the public interest that this certificate be granted and that the plan of financing be authorized;

11. The following information is provided in response to 807 KAR 5:001 Section (14)(2);

a. Corporation - The Applicant was incorporated in the Commonwealth of Kentucky on March 13, 1970 and is currently in good standing with the Kentucky Secretary of State;

12. The following information is supplied to 807 KAR 5:001 Section (15)(2);

a. Facts relied upon to show that the Project is in the public interest: The Project will provide more accurate meter readings and expedite the time necessary by the Applicant employees to read the meters;

b. No new franchises are required. No permits are required;

c. There are no diagrams of the proposed Project as it involves the acquisition and installation of radio read meters only;

d. Three (3) maps of suitable scale are not applicable in this case as the new radio read meters are replacing existing meters;

e. The construction costs will be funded from the proceeds of a loan in the approximate amount of \$515,000 (subject to adjustment of up to 10%) (the “Loan”) being arranged with the assistance of D.A. Davidson & Co., Public Finance/Financial Advisors, Kansas City, Missouri. (see preliminary schedules of D.A. Davidson attached as **Exhibit “F”**);

f. The estimated cost savings of the operation of the system after Project completion is detailed in **Exhibit “G”** attached hereto;

13. The following information is provided as required by 807 KAR 5:001 Section (18);

a. A general description of the property is contained in the 2013 Annual Report;

b. Financial information relating to the Loan is contained in the Schedules referred to in paragraph 12(e) above;

c. All funds are to be used in accordance with the Sources and Uses of Funds, see **Exhibit “F”**;

d. No real property is being acquired in connection with this Project;

e. No proceeds of the Loan will be used to refund outstanding obligations.

f. The Loan will be secured by and paid out of the revenues of the Applicant’s system.

14. The Applicant does not employ a Certified Public Accountant to prepare audited financial statements. The Applicant has completed and filed the required financial compilations as set forth in the Applicant’s 2013 Annual Report on file with this Commission.

15. Pursuant to 807 KAR 5:001, Section 12 - Financial Exhibit; the Applicant hereby responds as follows:

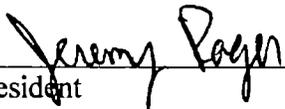
(i) Section 12(1)(b): The Applicant states that it had less than \$5,000,000 in gross annual revenue in the immediate past calendar year and that no material changes to the Applicant’s financial condition have occurred since the end of the twelve (12) month period contained in the Applicant’s most recent Annual Report on file with this Commission.

- (ii) Section 12(2)(a), (b) and (c) Stock: The Applicant does not have any authorized, issued or outstanding stock as of the date hereof.
- (iii) Section 12(2)(d) Mortgages: The Applicant does not have any outstanding mortgages as of the date hereof.
- (iv) Section 12(2)(e), (f) and (g) Indebtedness: The Applicant does not have any outstanding indebtedness.
- (v) Section 12(2)(h) Dividends: The Applicant has no outstanding stock and therefore pays no dividends.
- (vi) Section 12(2)(i) Financial Statements: See paragraph #14 above.

**WHEREFORE**, the Applicant, Beech Grove Water System, Inc., requests that the Public Service Commission of Kentucky grant to the Applicant the following:

- A. A certificate of public convenience and necessity permitting the Applicant to acquire and install a water system improvement project; and
- B. An order approving the issuance of securities in the form of a loan in the approximate amount of \$515,000 (subject to adjustment of up to 10%).

Beech Grove Water System, Inc.

By  \_\_\_\_\_  
President  
445 State Route 56N  
Calhoun, Kentucky 42327  
Telephone: (270) 273-5738  
Fax: (270) 273-5007  
Email: [beechgrovewaters@bellsouth.net](mailto:beechgrovewaters@bellsouth.net)

Rubin & Hays

By  \_\_\_\_\_  
W. Randall Jones  
Kentucky Home Trust Building  
450 South Third Street  
Louisville, Kentucky 40202  
Telephone: (502) 569-7525  
Fax: (502) 569-7555  
Email: [wrjones@rubinhays.com](mailto:wrjones@rubinhays.com)



**ZENNER PERFORMANCE**  
**Multi-Jet Type Magnetic Drive**  
**Cold Water Meters NITRO I**

5/8" (DN 15mm)  
3/4" (DN 20mm)  
1" (DN 25mm)  
1 1/2" (DN 40mm)  
2" (DN 50mm)

U.S.A. Patent No. US 6345541 B1



**INTRODUCTION:** ZENNER PERFORMANCE Nitro I Water Meters utilize a magnetically driven multi-jet design. They are designed to measure cold potable water where flow is in one direction only in residential, commercial, and industrial settings.

**OPERATION:** Water flows through the meter's strainer and into the measuring chamber where it drives the impeller. A drive magnet transmits the motion of the impeller to a driven magnet located within the hermetically sealed register. Powerful rare earth magnets eliminate slipping and uncoupling to increase overall accuracy. The magnet is connected to a gear train which translates the impeller's rotation into volume totalization displayed on the register dial face.

**CONSTRUCTION:** ZENNER PERFORMANCE Nitro I Water Meters consist of three basic components: main case, measuring chamber and sealed register. The main cases are constructed using either C89833 or C89850 Brass Alloys. Measuring Chambers are constructed of a durable synthetic polymer. Registers are available as either direct read or electronic output.

**MAINTENANCE:** ZENNER PERFORMANCE Nitro I Water Meters are engineered and manufactured to provide long-term service and operate virtually maintenance free. The precise simple design allows for interchangeable parts, reducing parts inventory.

**REGISTRATION:** ZENNER PERFORMANCE Nitro I Water Meters utilize a magnetically driven, hermetically sealed design. The sealed design eliminates dirt, moisture infiltration, and prevents fogging. The register includes a large odometer-type totalization display, center sweep hand (360°) test circle, low flow leak detector. All ZENNER PERFORMANCE Meters have electronic output capabilities for easy conversion to Automated Meter Reading. 5/8" through 1" capacities are: 10,000,000 Gallons, 1,000,000 Cubic Feet, 100,000 Cubic Meters, 6 odometer wheels. 1 1/2" and 2" registration capacities are: 100,000,000 Gallons, 10,000,000 Cubic Feet, 1,000,000 Cubic Meters, 6 odometer wheels.

**CONFORMANCE:** ZENNER PERFORMANCE Nitro I Water Meters are tested and comply with AWWA C708, ISO 4064, and G13IT19001-ISO9000 performance standards.

**TAMPERPROOF FEATURES:** Customer removal of the register to obtain free water is prevented through the use of a locking device that requires a special tool, only available to water utilities.

**CONNECIIONS:** These meters have been designed with ease of installation in mind through the use of wrench pads. Tailpiece/Unions for installations of meters are available as an option for various pipe types, sizes, and misaligned pipes.

**ZENNER PERFORMANCE**

P.O. BOX 895, Banning, CA 92220, (951) 849-8822, Fax (951) 755-8816  
mail@zennerusa.com, www.zennerusa.com

MODEL		PMN01	PMN02	PMN03	PMN04	PMN05	PMN07	PMN08	PMN09	PMN11	PMN12
SIZE		5/8 x 1/2	5/8 x 3/4	3/4" Short	3/4" x 3/4"	3/4" x 1"	1"	1-1/2" Female Threads	1-1/2" Flanged	2" Female Threads	2" Flanged
High Flow Rate	USGPM	20	20	30	30	30	50	100	100	160	160
Continuous Flow	USGPM	10	10	15	15	15	25	50	50	80	80
Starting Flow	USGPM	3/64	3/64	5/64	5/64	5/64	5/64	1/2	1/2	3/4	3/4
Normal Flow	USGPM	1 - 20	1 - 20	2 - 30	2 - 30	2 - 30	3 - 50	5-100	5-100	8-160	8-160
Low Flow	USGPM	1/4	1/4	1/2	1/2	1/2	3/4	1 1/2	1 1/2	2	2
Extreme High Flow (Intermittent)	USGPM	25	28	32	32	32	60	120	120	180	180
Maximum Working Pressure	P.S.I.	150	150	150	150	150	150	150	150	150	150
Maximum Temperature	Deg. F	122	122	122	122	122	122	122	122	122	122
Length	Inches	7 1/2	7 1/2	7 1/2	9	9	10 3/4	12 5/8	13	15 1/4	17
Length with Couplings	Inches	12 1/2	12 1/2	12 1/2	14 1/2	14 1/2	16 1/2	-	-	-	-
Height	Inches	4 3/4	4 3/4	4 3/4	4 3/4	4 3/4	5	7	7	7	7
Weight	Pounds	4.5	4.5	4.5	6	6.3	7	15	20	21	25

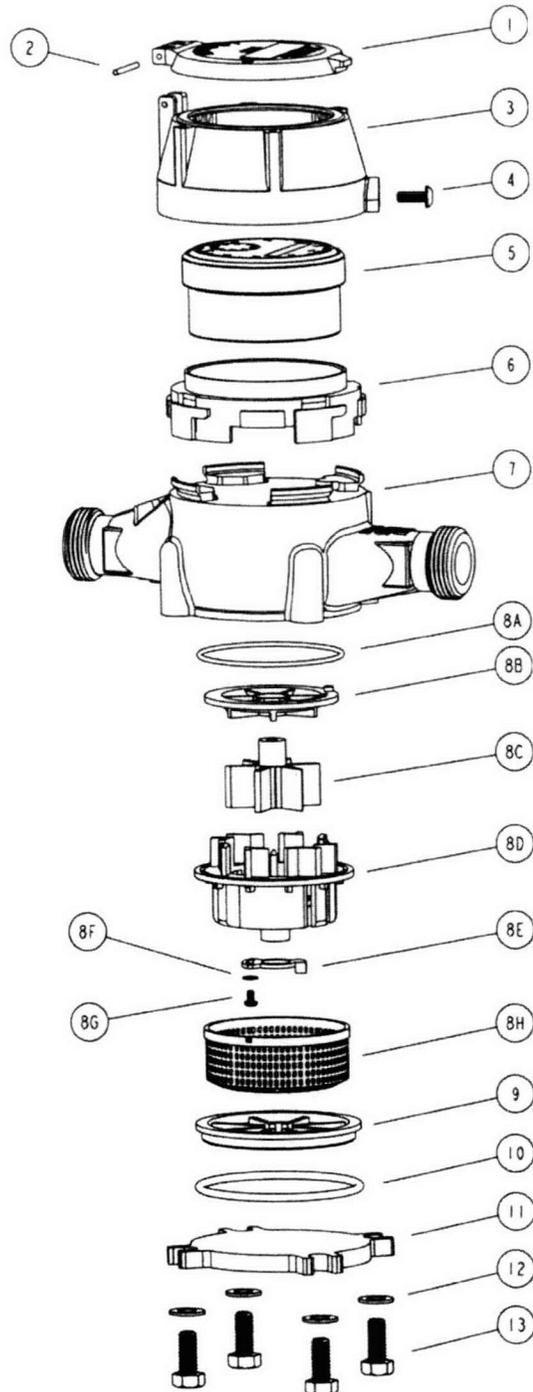


Certified to  
NSF/ANSI 61-G

**ZENNER PERFORMANCE**

Multi-Jet Type Cold Water Meters NITRO I Parts List Models PMN01, PMN02, PMN03

NO.	DESCRIPTION	QTY
1-B	REGISTER COVER - BRASS	1
1-P	REGISTER COVER - PLASTIC	1
2	REGISTER COVER HINGE PIN	1
3-B	REGISTER SHROUD - BRASS	1
3-P	REGISTER SHROUD - PLASTIC	1
4	TAMPER SCREW	1
5-CF	REGISTER (CUBIC FEET)	1
5-CM	REGISTER (CUBIC METERS)	1
5-US	REGISTER (U.S. GALLONS)	1
6	SHROUD RETAINING RING	1
7	HOUSING	1
8	CHAMBER ASSEMBLY COMPLETE	1
8A	O-RING, CHAMBER SEAL	1
8B	CALIBRATION PLATE, TOP	1
8C	IMPELLER	1
8D	IMPELLER HOUSING	1
8E	CALIBRATION PLATE, BOTTOM	1
8F	WASHER, FLAT, CAL PLATE	1
8G	SCREW, PAN HEAD, CAL PLATE	1
8H	STRAINER	1
9	SEAL RETAINER	1
10	O-RING, BOTTOM PLATE SEAL	1
11-B	BOTTOM PLATE, BRASS	1
11-C	BOTTOM PLATE, CAST IRON EPOXY COATED	1
12	WASHER, FLAT, SS	4
13	BOLT, HEX HEAD, SS	4

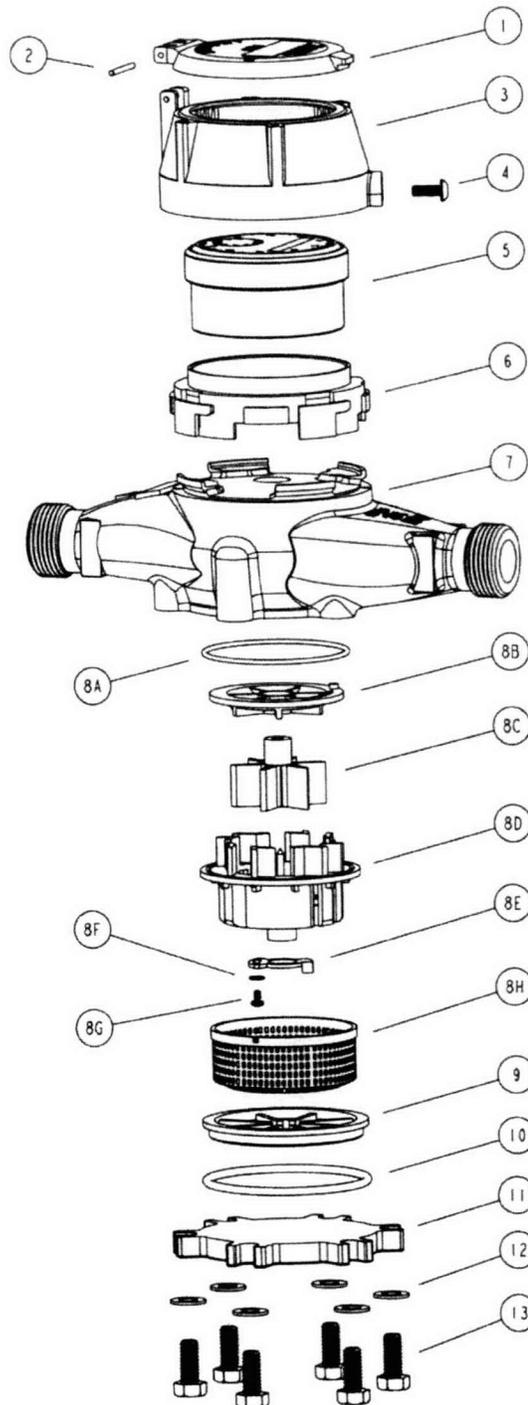


**ZENNER PERFORMANCE**

**ZENNER PERFORMANCE**

Multi-Jet Type Cold Water Meters NITRO I Parts List Models PMN04, PMN05

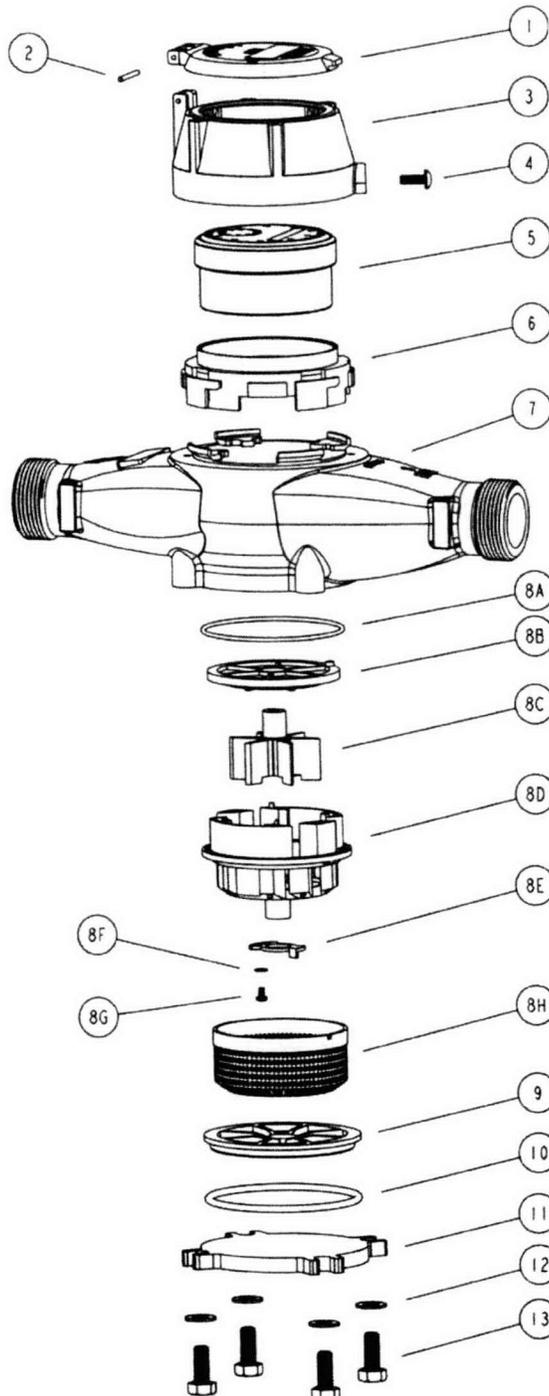
NO.	DESCRIPTION	QTY
1-B	REGISTER COVER - BRASS	1
1-P	REGISTER COVER - PLASTIC	1
2	REGISTER COVER HINGE PIN	1
3-B	REGISTER SHROUD - BRASS	1
3-P	REGISTER SHROUD - PLASTIC	1
4	TAMPER SCREW	1
5-CF	REGISTER (CUBIC FEET)	1
5-CM	REGISTER (CUBIC METERS)	1
5-US	REGISTER (U.S. GALLONS)	1
6	SHROUD RETAINING RING	1
7	HOUSING	1
8	CHAMBER ASSEMBLY COMPLETE	1
8A	O-RING, CHAMBER SEAL	1
8B	CALIBRATION PLATE, TOP	1
8C	IMPELLER	1
8D	IMPELLER HOUSING	1
8E	CALIBRATION PLATE, BOTTOM	1
8F	WASHER, FLAT, CAL PLATE	1
8G	SCREW, PAN HEAD, CAL PLATE	1
8H	STRAINER	1
9	SEAL RETAINER	1
10	O-RING, BOTTOM PLATE SEAL	1
11	BOTTOM PLATE, BRASS	1
12	WASHER, FLAT, SS	6
13	BOLT, HEX HEAD, SS	6



**ZENNER PERFORMANCE**

**ZENNER PERFORMANCE**  
Multi-Jet Type Cold Water Meters NITRO I Parts List Model PMN07

NO.	DESCRIPTION	QTY
1-B	REGISTER COVER - BRASS	1
1-P	REGISTER COVER - PLASTIC	1
2	REGISTER COVER HINGE PIN	1
3-B	REGISTER SHROUD - BRASS	1
3-P	REGISTER SHROUD - PLASTIC	1
4	TAMPER SCREW	1
5-CF	REGISTER (CUBIC FEET)	1
5-CM	REGISTER (CUBIC METERS)	1
5-US	REGISTER (U.S. GALLONS)	1
6	SHROUD RETAINING RING	1
7	HOUSING	1
8	CHAMBER ASSEMBLY COMPLETE	1
8A	O-RING, CHAMBER SEAL	1
8B	CALIBRATION PLATE, TOP	1
8C	IMPELLER	1
8D	IMPELLER HOUSING	1
8E	CALIBRATION PLATE, BOTTOM	1
8F	WASHER, FLAT, CAL PLATE	1
8G	SCREW, PAN HEAD, CAL PLATE	1
8H	STRAINER	1
9	SEAL RETAINER	1
10	O-RING, BOTTOM PLATE SEAL	1
11-B	BOTTOM PLATE, BRASS	1
11-C	BOTTOM PLATE, CAST IRON EPOXY COATED	1
12	WASHER, FLAT, SS	4
13	BOLT, HEX HEAD, SS	4

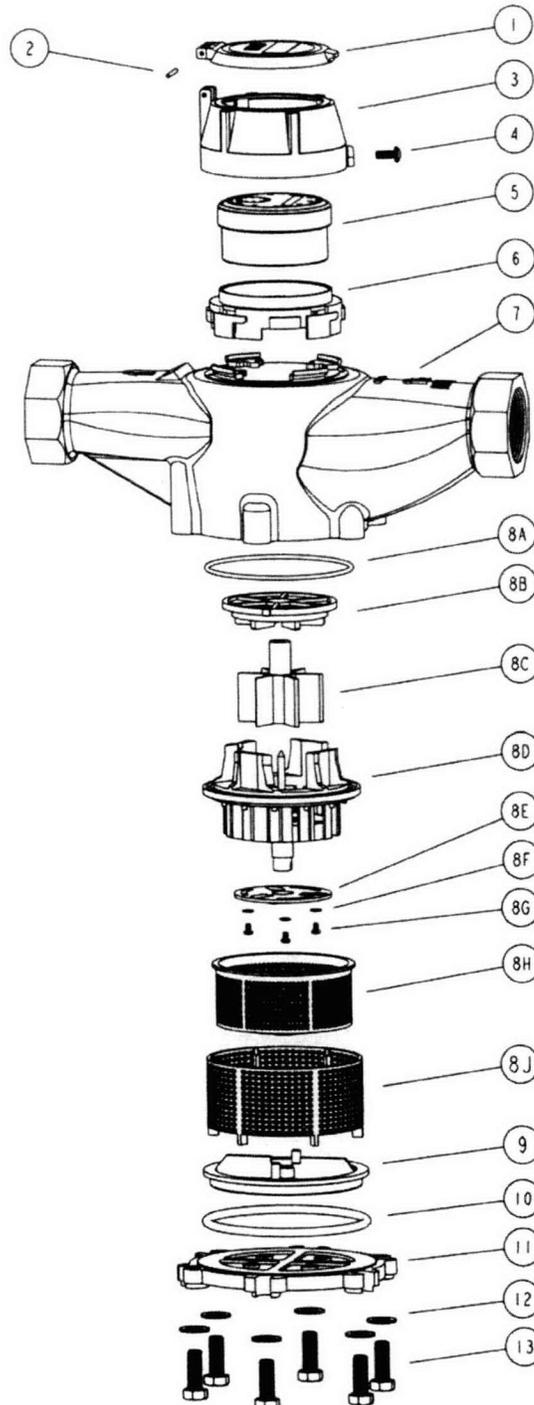


**ZENNER PERFORMANCE**

**ZENNER PERFORMANCE**

Multi-Jet Type Cold Water Meters NITRO I Parts List Models PMN08, PMN11

NO.	DESCRIPTION	QTY
1-B	REGISTER COVER - BRASS	1
1-P	REGISTER COVER - PLASTIC	1
2	REGISTER COVER HINGE PIN	1
3-B	REGISTER SHROUD - BRASS	1
3-P	REGISTER SHROUD - PLASTIC	1
4	TAMPER SCREW	1
5-CF	REGISTER (CUBIC FEET)	1
5-CM	REGISTER (CUBIC METERS)	1
5-US	REGISTER (U.S. GALLONS)	1
6	SHROUD RETAINING RING	1
7	HOUSING	1
8	CHAMBER ASSEMBLY COMPLETE	1
8A	O-RING, CHAMBER SEAL	1
8B	IMPELLER HOUSING TOP PLATE	1
8C	IMPELLER	1
8D	IMPELLER HOUSING	1
8E	CLAIBRATION PLATE	1
8F	WASHER, FLAT, SS, CAL PLATE	3
8G	SCREW, PAN HEAD, SS, CAL PLATE	3
8H	STRAINER, INSIDE	1
8J	STRAINER, OUTSIDE	1
9	SEAL RETAINER	1
10	O-RING, BOTTOM PLATE SEAL	1
11	BOTTOM PLATE, BRASS	1
12	WASHER, FLAT, SS	6
13	BOLT, HEX HEAD, SS,	6

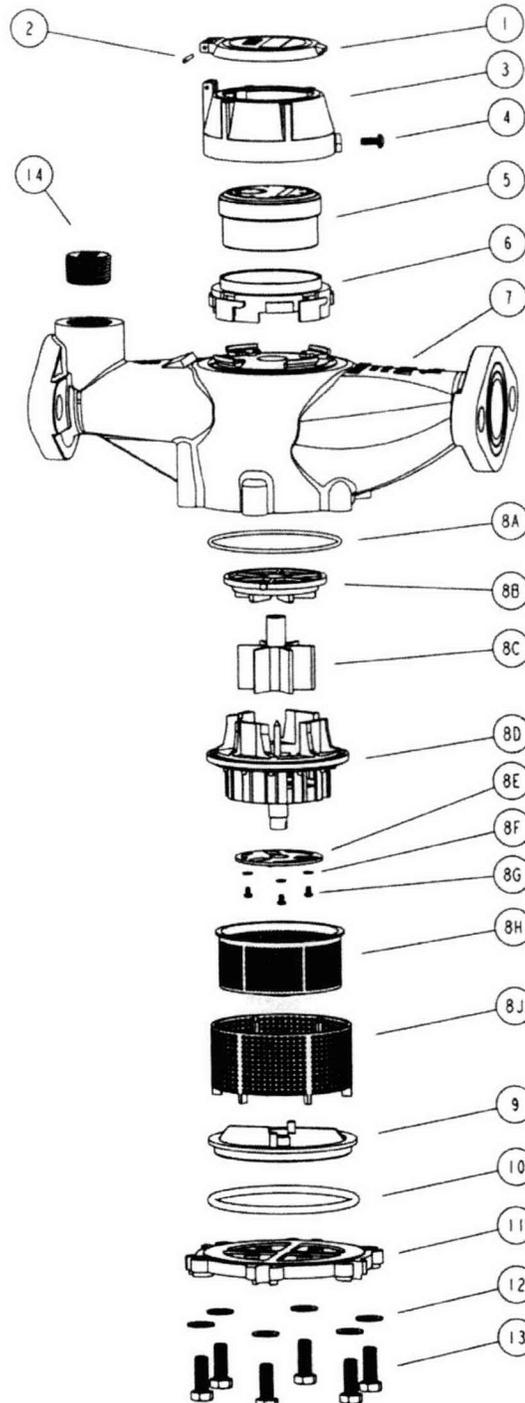


**ZENNER PERFORMANCE**

**ZENNER PERFORMANCE**

Multi-Jet Type Cold Water Meters NITRO I Parts List Model PMN09, PMN12

NO.	DESCRIPTION	QTY
1-B	REGISTER COVER - BRASS	1
1-P	REGISTER COVER - PLASTIC	1
2	REGISTER COVER HINGE PIN	1
3-B	REGISTER SHROUD - BRASS	1
3-P	REGISTER SHROUD - PLASTIC	1
4	TAMPER SCREW	1
5-CF	REGISTER (CUBIC FEET)	1
5-CM	REGISTER (CUBIC METERS)	1
5-US	REGISTER (U.S. GALLONS)	1
6	SHROUD RETAINING RING	1
7	HOUSING	1
8	CHAMBER ASSEMBLY COMPLETE	1
8A	O-RING, CHAMBER SEAL	1
8B	IMPELLER HOUSING TOP PLATE	1
8C	IMPELLER	1
8D	IMPELLER HOUSING	1
8E	CLAIBRATION PLATE	1
8F	WASHER, FLAT, SS, CAL PLATE	3
8G	SCREW, PAN HEAD, SS, CAL PLATE	3
8H	STRAINER, INSIDE	1
8J	STRAINER, OUTSIDE	1
9	SEAL RETAINER	1
10	O-RING, BOTTOM PLATE SEAL	1
11	BOTTOM PLATE, BRASS	1
12	WASHER, FLAT, SS	6
13	BOLT, HEX HEAD, SS	6
14	TEST PLUG, BRASS, 1"	1

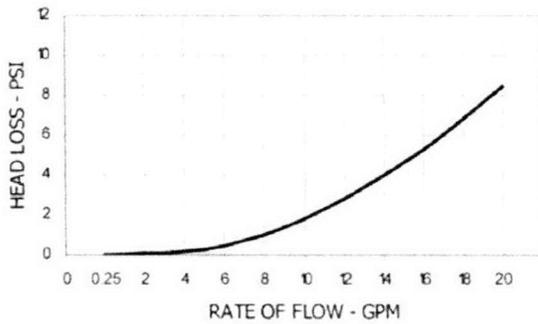


**ZENNER PERFORMANCE**

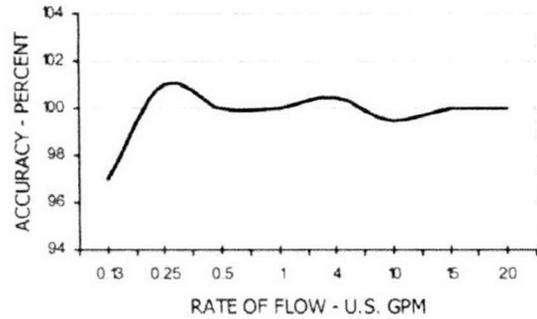
ZENNER PERFORMANCE  
 Multi-Jet Type Magnetic Drive Cold Water Meters NITRO I

### Typical Performance Curves

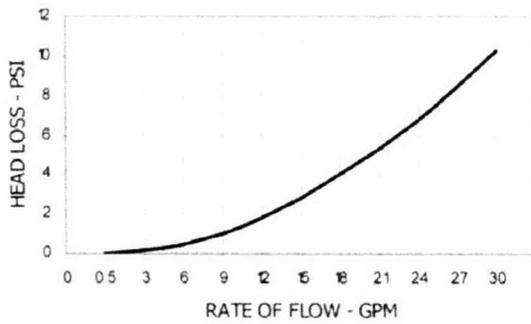
**HEAD LOSS CURVE**  
**5/8" PMN01 and PMN02**



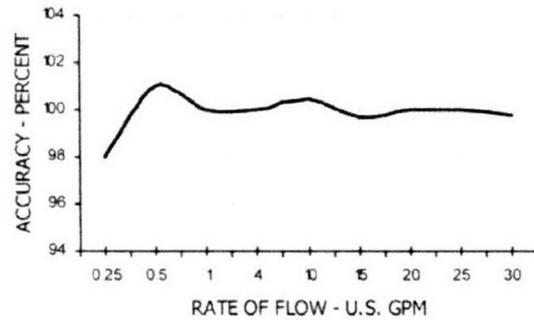
**ACCURACY CURVE**  
**5/8" PMN01 and PMN02**



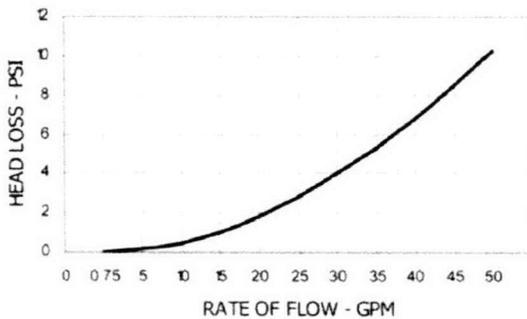
**HEAD LOSS CURVE**  
**3/4" PMN03, PMN04 and PMN05**



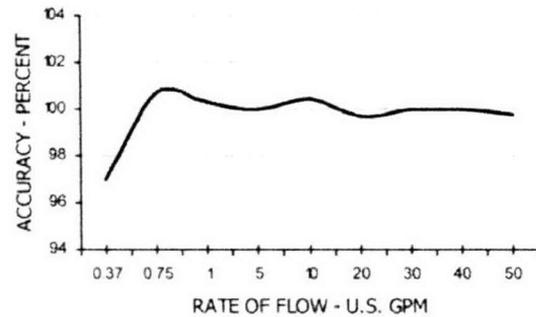
**ACCURACY CURVE**  
**3/4" PMN03, PMN04 and PMN05**



**HEAD LOSS CURVE**  
**1" PMN07**



**ACCURACY CURVE**  
**1" PMN07**

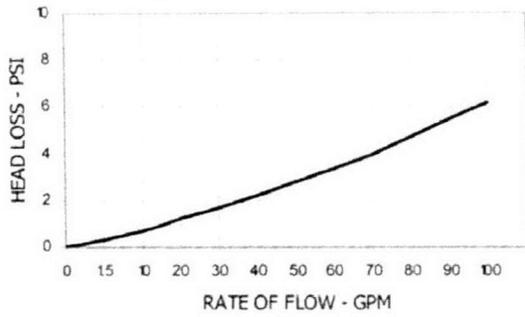


ZENNER PERFORMANCE

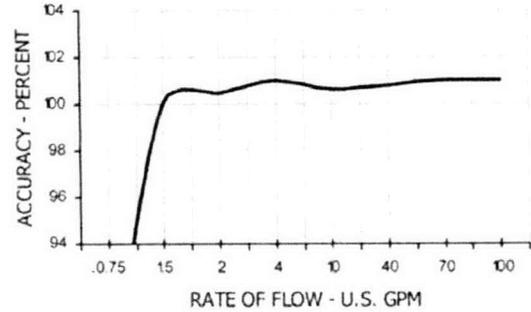
P.O. Box 895 | Banning, CA 92220 | phone (951) 849-8822 | fax (951) 755-8816  
 mail@zennerusa.com | www.zennerusa.com

ZENNER PERFORMANCE  
 Multi-Jet Type Magnetic Drive Cold Water Meters NITRO I

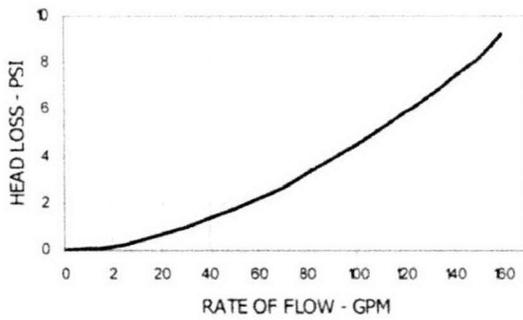
**HEAD LOSS CURVE**  
**1-1/2" PMN08 AND PMN09**



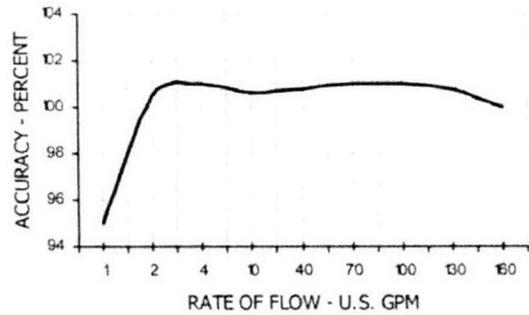
**ACCURACY CURVE**  
**1-1/2" PMN08 AND PMN09**



**HEAD LOSS CURVE**  
**2" PMN11 AND PMN12**



**ACCURACY CURVE**  
**2" PMN11 AND PMN12**



# Qualified Provider Agreement

Between

**Beech Grove Water System, Inc.**

And

**Shambaugh & Son, LP**

January 29, 2015  
~~December 2014~~

## TABLE OF ARTICLES:

1. Agreement
2. Glossary
3. General
4. Work by PROVIDER
5. Performance Guarantee
6. CLIENT'S Responsibility
7. Changes and Delays
8. Compensation
9. Acceptance
10. Insurance and Allocation of Risk
11. Hazardous Material Provisions
12. Disputes
13. Miscellaneous Provisions

**Article 1 AGREEMENT**

This QUALIFIED PROVIDER AGREEMENT is made this \_\_\_\_<sup>th</sup> day of December, 2014 (the "AGREEMENT") by and between Shambaugh & Son, LP ("PROVIDER"), and the party identified below as the CLIENT.

**CLIENT:**

Beech Grove Water System, Inc.  
445 State Route 56 North  
Calhoun, KY 42327

**AUTHORIZED REPRESENTATIVE:**

Thomas Conrad, President  
Shirley Cheatham, Secretary/Treasurer  
Phone: 270.273.5738

**PROVIDER:**

Shambaugh & Son, LP  
5128 W. 79<sup>th</sup> Street  
Indianapolis, IN 46268

**With offices located at:**

5128 W. 79<sup>th</sup> Street  
Indianapolis, IN 46268

**AUTHORIZED REPRESENTATIVE:**

Craig S. Martin,  
Business Development Manager  
Shambaugh & Son LP  
Phone: 317.822.7890, Fx: 260.487.2255

For services in connection with the following project:

**Automatic Meter Reading (AMR) Project**

## **Articles and Attachments**

This Agreement shall consist of this document which includes the following twelve articles and indicated Exhibits ("Contract Documents") which are acknowledged by CLIENT and PROVIDER and incorporated herein by this reference:

### **Articles:**

1. Agreement
2. Glossary
3. General
4. Work by PROVIDER
5. Performance Guarantee
6. CLIENT'S Responsibility
7. Changes and Delays
8. Compensation
9. Acceptance
10. Insurance and Allocation of Risk
11. Hazardous Material Provisions
12. Disputes
13. Miscellaneous Provisions

### **Exhibits:**

- Exhibit 1-A Scope of Work and Services
- Exhibit 1-B Performance Assurance Agreement
- Exhibit 1-C Draw Schedule
- Exhibit 1-D Construction Schedule

This Agreement, when accepted in writing by an authorized representative of CLIENT and by an authorized representative of PROVIDER, constitutes the entire, complete and exclusive agreement between the "Parties". The above referenced and any other expressly incorporated documents constitute the entire agreement between the Parties, and shall be jointly referred to as either Agreement or Contract Documents, relative to the project scope as defined in Article 4 and Exhibit 1-A and supersede all prior and contemporaneous negotiations, statements, representations, agreements, documents, letters of intent, awards, or proposals, either written or oral relative to the same. This Agreement may be modified only by a written instrument signed by both Parties.

### **COMPENSATION/TERMS OF PAYMENT:**

As full consideration for the performance of the Work set forth in Article 4 and Exhibit 1-A and for the Performance Guarantee set forth in Article 5 and Performance Assurance Agreement defined in Exhibit 1-B, CLIENT shall pay to

PROVIDER the Contract Sum on a Lump Sum basis in such manner as agreed in Exhibit 1-C (Draw Schedule), and Exhibit 1-D (Construction Schedule), and in accordance with the payment terms and conditions established by the Contract Documents.

Agreed to for: Beech Grove Water System, Inc. (CLIENT)

(Signature) by:

Print Name and Title: Thomas Conrad, President

Date: 1-21-15 ~~December 21, 2014~~

(Signature) by:

Print Name and Title: Shirley Cheatham, Secretary/Treasurer

Date: 1-22-15 ~~December 22, 2014~~

Agreed to for: Shambaugh & Son, LP (PROVIDER)

(Signature) By:

Print Name and Title: Craig S. Martin, Business Development Manager

Date: 1-29-15 ~~December 29, 2014~~

## Article 2 Glossary

The following terms shall, for all purposes of this Agreement and the Contract Documents, have the meanings stated herein, unless the context otherwise specifies or requires, or unless otherwise defined in the Contract Documents:

The following terms shall, for all purposes of this Agreement, have the meanings stated herein, unless the context otherwise specifies or requires or unless otherwise defined elsewhere in the Contract Documents:

**"Accumulated Realized Savings"** means the sum of the actual savings achieved from the Effective Date of this Agreement through the end of the current Annual Period, derived from the sum of Actual Measured and Verified Savings plus the Stipulated Savings.

**"Accumulated Guaranteed Savings"** means the sum of the Guaranteed Measured and Verified Savings plus the Stipulated Savings from the beginning of the Guarantee Term through the end of the current Annual Period.

**"Actual Measured and Verified Savings"** means those savings, which can be measured and verified by the methodology as set forth in Exhibit 1-B.

**"Annual Guaranteed Savings"** means the Guaranteed Measured and Verified Savings plus the Stipulated Savings guaranteed to be achieved in any Annual Period of the Guarantee Term following the Construction Period as described in Exhibit 1-B.

**"Annual Period"** is defined as consecutive twelve month periods of time commencing with the initial date of the measurement and verification phase of the project.

**"Annual Realized Savings"** means the actual savings achieved by CLIENT during an Annual Period, calculated as the sum of the Actual Measured and Verified Savings plus the Stipulated Savings.

**"Base Year and Baseline"** is defined as a specific period of time and any data used for, or resulting from, the analysis of that period, respectively

**"Btu"** means a unit of thermal energy defined as a British thermal unit.

**"Construction Period"** defined as commencing on the date of contract signing and ending when the last portion of the project begins its warranty period.

**"Construction Period Savings"** means the accumulated Actual Measured and Verified Savings plus the Stipulated Savings achieved from the Effective Date of this Agreement until the beginning of the Guarantee Term.

**"Contingency Funds"** are funds set aside by CLIENT and not included in the Guaranteed Maximum Price contract amount. To the extent that Contingency Funds are used for additional Work under Article 7 or 8 those funds will be used to increase the Guaranteed Maximum Price value of the contract.

**"Deliverables"** are defined as a scope or product provided by one party to the other under this Agreement.

**"Equipment"** is defined as any material provided on behalf of CLIENT under the terms of this Agreement.

**"Equipment (Major)"** is defined as significant equipment covered under the scope of services provided by PROVIDER such as boilers, chillers, air handling equipment or unit ventilators, and pumps and motors.

**"Excess Savings"** means the Annual Realized Savings less the Annual Guaranteed Savings for the annual period. If the amount is zero or less there is no Excess Savings amount for that annual period.

**"Facilities"** means the buildings covered under the scope of this Agreement.

**"Facility Improvement Measure (FIM)" or "Energy Conservation Measure (ECM)"** means the equipment, devices, materials and/or software as installed by PROVIDER at the CLIENT facilities, or as repaired or replaced by CLIENT hereunder, for the purpose of improving facility utilization.

**"Final Completion"** is defined as a portion of the project or the total project accepted by CLIENT.

**"Fully Optimized Energy Savings"** is defined as 100% of the calculated and expected energy savings.

**"GSC"** means the Guaranteed Savings Contract, dated as of ~~December 2014~~ <sup>January 29, 2015</sup>, by and between CLIENT and PROVIDER. Cm

**"Guaranteed Measured and Verified Savings"** means the Measured and Verified Savings guaranteed to be achieved as described in Exhibit 1-B.

**"Guarantee Term"** means the fifteen-year period beginning after the Construction Period on a mutually agreed upon date whereupon annual measurement and verification commences.

**"Industry engineering standards"** used in this Agreement includes the following: (1) lifecycle costing, (2) R. S. Means estimating methods, (3) CLIENT historical data, (4) equipment manufacturer's data and/or (5) American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) standards.

**"Instruments"** are defined as any tool used in the delivery of work or troubleshooting of the scope of the project such as gauges, meters, laptops, etc.

**"kW and kWh"** means Kilowatt and Kilowatt hour, respectively.

**"Material Change"** is defined as changes to the mechanical system or its operation that may affect energy or operational savings or system performance of the mechanical system.

**"Measured and Verified Savings"** are the actual savings resulting from the annual utility bill comparison as described in Exhibit 1-B.

**"Notice"** is defined as providing notification between parties as required under this Agreement.

**"Performance Assurance Agreement"** is described in Exhibit 1-B.

**"Performance Guarantee"** is described in this Agreement.

**"Performance Guarantee Period"** means the 15-year period beginning after the Construction Period on a mutually agreed upon date whereupon annual measurement and verification commences.

**"Permitted Users"** are defined as those technicians having access to the mechanical system and control devices including computers, controllers, logic boards, etc.

**"Savings Shortfall"** means the Annual Guaranteed Savings less the Annual Realized Savings for any Annual Period of the Performance Guarantee Period. If the amount is zero or less there is no Savings Shortfall amount for that annual period.

**"Site"** means the property on which the Facilities are located.

**"Stipulated Energy Savings"** are energy savings that have been mutually agreed upon by PROVIDER and CLIENT prior to or upon the Effective Date of this Agreement specifically identified in Exhibit 1-B.

**"Stipulated Operational Savings"** are operational savings that have been mutually agreed upon by PROVIDER and CLIENT prior to or upon the Effective Date of this Agreement specifically identified in Exhibit 1-B.

**"Stipulated Savings"** are the Stipulated Operational Savings and the Stipulated Energy Savings that have been mutually agreed upon by PROVIDER and CLIENT prior to or upon the Effective Date of this Agreement specifically identified in Exhibit 1-B.

**"Substantially Complete"** means that CLIENT has approved the completed Work performed by PROVIDER and signed the necessary documents agreeing to and approving that the Work satisfies the terms of this Agreement.

**"Therm"** is a measure of energy equal to 100,000 Btu.

**"Total Guaranteed Savings"** includes Annual Guaranteed Savings during each Annual Period of the Performance Guarantee Period, but not including any Construction Period Savings.

**"Total Realized Savings"** are the amount of savings actually achieved, calculated and adjusted as set forth in this Exhibit 1-B, and includes all savings achieved during the Construction Period as well.

**"Work"** is defined as an agreed-upon scope of project performed by PROVIDER.

### **Article 3 General**

**3.1 CLIENT hereby engages and PROVIDER hereby accepts the engagement to perform and provide the Work set forth in Exhibit 1-A hereof and in accordance with the terms and conditions of this Agreement.**

**3.2 PROVIDER shall perform the Work as an independent contractor with exclusive control of the manner and means of performing the Work in accordance with the requirements of this Agreement. PROVIDER has no authority to act or make any agreements or representations on behalf of CLIENT. This Agreement is not intended, and shall not be construed to create, between CLIENT and PROVIDER, the relationship of principal and agent, joint venturers, co-partners or any other such relationship, the existence of which is hereby expressly denied. No employee or agent of PROVIDER shall be, or shall be deemed to be, an employee or agent of CLIENT.**

**3.3 PROVIDER represents, warrants and covenants to CLIENT that:**

**(a) It has all requisite corporate power and statutory authority to enter into this Agreement, and that its execution hereof has been duly authorized and does not and will not constitute a breach or violation of any of PROVIDER'S organizational documents, any applicable laws or regulations, or any agreements with third parties;**

**(b) It has done and will continue to do all things necessary to preserve and keep in full force and effect its existence and the Agreement;**

**(c) This Agreement is the legal, valid and binding obligation of PROVIDER, in accordance with its terms, and all requirements have been met and procedures have been followed by PROVIDER to ensure the enforceability of the Agreement;**

**(d) To PROVIDER'S best knowledge, there is no pending or threatened, suit, action, litigation or proceeding against or affecting PROVIDER that affects the validity or enforceability of this Agreement;**

**(e) It is duly authorized to do business in all locations where the Work is to be performed; and,**

**(f) It is a qualified provider as defined in Kentucky Code HB-264 (1996), and SB-157 (1996), and HB-639 (1998), as amended.**

**3.4 CLIENT represents, warrants and covenants to PROVIDER that:**

**(a) It has all requisite corporate power and statutory authority to enter into this Agreement, and that its execution hereof has been duly authorized and does not and will not constitute any material breach or violation of any of CLIENT'S organizational documents, any applicable laws or regulations, or any agreements with third parties;**

**(b) It has done and will continue to do all things necessary to preserve and keep in full force and effect its existence and the Agreement;**

**(c) This Agreement is the legal, valid and binding obligation of CLIENT, in accordance with its terms, and all requirements have been met and procedures**

have been followed by CLIENT to ensure the enforceability of the Agreement;  
and,

(d) To CLIENT'S best knowledge, there is no pending or threatened, suit, action, litigation or proceeding against or affecting CLIENT that affects the validity or enforceability of this Agreement.

#### **Article 4 Work by PROVIDER**

The total cost of Work performed by PROVIDER under Exhibit 1-A is (\$489,710.00), subject to adjustments and changes per the terms of this Agreement. This Agreement is contingent on CLIENT receiving acceptable project financing and entering into a fully-funded financing arrangement with a third-party lender by May 31, 2015. If acceptable financing cannot be found this Agreement becomes void. CLIENT will use all good faith efforts to secure such financing consistent with standard financing terms and current financing interest rates. PROVIDER has no obligation to provide any Work whatsoever until these financing conditions have been satisfied.

4.1 PROVIDER will perform the Work expressly described in this Agreement and in any change orders that are issued under this Agreement and signed by both Parties. The Work performed by PROVIDER shall be conducted in a workmanlike manner.

4.2 PROVIDER shall perform the Work during its normal working hours unless the Work performed affects the CLIENT's normal activities, Monday through Friday inclusive, excluding holidays, unless otherwise agreed herein. CLIENT shall make the Site available in order for the Work to proceed in an efficient manner.

4.3 PROVIDER is not required to conduct safety, reacceptance or other tests, install new devices or equipment or make modifications to any Equipment beyond the scope of the Work set forth in this Agreement. Any CLIENT request to change the scope or nature of the Work must be in the form of a mutually agreed upon written change order, effective only when executed by the Parties.

4.4 All Deliverables shall become CLIENT'S property upon full payment to PROVIDER. PROVIDER may retain file copies of such Deliverables. All Instruments shall remain PROVIDER'S property. To the extent specified in Exhibit 1-A, Permitted Users shall have a right to make and retain copies of Instruments except uncompiled code, and to use all Instruments, provided, however, that the Instruments shall not be used or relied upon by any parties other than Permitted Users, and such use shall be limited to the particular project and location for which the Instruments were provided. All Deliverables and Instruments provided to CLIENT are for Permitted Users' use and only for the purposes disclosed to PROVIDER. CLIENT shall not transfer any Deliverables or copies of Instruments to others or use them or permit them to be used for any extension of the Work or any other project or purpose, without PROVIDER' express written consent. Any reuse of Deliverables or Instruments for other projects or locations without the written consent of PROVIDER, or use other than by Permitted Users, is not permitted, is a breach of this Agreement, and will be at Permitted Users' and/or such other user's sole risk and without liability to PROVIDER; and, unless expressly prohibited by law, the Permitted Users, jointly

and severally, shall indemnify, defend and hold PROVIDER harmless from any claims, losses or damages arising from such unauthorized use.

4.5 PROVIDER may assign any or all portions of its Work to one or more subcontractors. PROVIDER shall be responsible for any portion of the Work performed by any subcontractor of PROVIDER. PROVIDER shall not have any responsibility, duty or authority to direct, supervise or oversee any contractor of CLIENT or their work or to provide the means, methods or sequence of their work or to stop their work. PROVIDER'S work and/or presence at the Site shall not relieve others of their responsibility to CLIENT or to others.

4.6 PROVIDER warrants that:

(a) Unless otherwise agreed, all Equipment shall be new and of good quality. Until one year from the date of installation of major Equipment components determined by a letter of warranty sent to CLIENT, all Equipment manufactured by PROVIDER or bearing its nameplate will be free from defects in material and workmanship arising from normal use and service. Equipment manufactured by parties other than PROVIDER shall only carry the manufacturer's warranty, which shall be assigned to CLIENT.

(b) Labor for all Work, excluding any future maintenance services, is warranted to be free from defects in workmanship for one year from the date of installation of major Equipment components determined by a letter of warranty sent to CLIENT.

(c) CLIENT shall agree, sign and return the letter of warranty in an expeditious manner upon CLIENT'S satisfaction of PROVIDER'S completion of the installation of major Equipment components.

4.7 Warranty Limitation:

(a) The limited warranties set forth in Section 4.6 will be void as to, and shall not apply to, any Equipment (i) repaired, altered or improperly installed by any person other than PROVIDER or its Authorized Representative; (ii) subjected to unreasonable or improper use or storage, used beyond rated conditions, operated other than per PROVIDER'S or the manufacturer's instructions, or otherwise subjected to improper maintenance, negligence or accident; (iii) damaged because of any use of the Equipment after CLIENT has, or should have, knowledge of any defect in the Equipment; or (iv) not manufactured, fabricated and assembled by PROVIDER or not bearing PROVIDER'S nameplate. However, PROVIDER assigns to CLIENT, without recourse, any and all assignable warranties available from any manufacturer, supplier, or subcontractor of such Equipment.

(b) Any claim under the limited warranty granted above must be made in writing to PROVIDER within thirty (30) days after discovery of the claimed defect unless discovered directly by PROVIDER. Such limited warranty only extends to CLIENT and not to any subsequent owner of the Equipment. The CLIENT'S sole and exclusive remedy for any Equipment or Services not conforming with this limited warranty is limited to, at PROVIDER's option: (i) repair or replacement of defective components of covered Equipment; (ii) re-performance of the defective

portion of the Services; or, (iii) to the extent previously paid, the issuance of a credit or refund for the original purchase price of such defective component or portion of the Equipment or Services.

(c) PROVIDER shall not be required to repair or replace more than the component(s) of the Equipment or the portion of the Work and Services actually found to be defective. PROVIDER'S warranty liability shall not exceed the purchase price of such item. Repaired or replaced Equipment or Services will be warranted hereunder only for the remaining portion of the original warranty period.

4.8 THE EXPRESS LIMITED WARRANTIES PROVIDED ABOVE ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES, STATUTORY, EXPRESS, OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED. PROVIDER MAKES NO WARRANTY, EXPRESS OR IMPLIED, THAT ANY EQUIPMENT PROVIDED HEREUNDER WILL PREVENT ANY LOSS, OR WILL IN ALL CASES PROVIDE THE PROTECTION FOR WHICH IT IS INSTALLED OR INTENDED. THE LIMITED EXPRESS WARRANTIES AND REPRESENTATIONS SET FORTH IN THIS AGREEMENT MAY ONLY BE MODIFIED OR SUPPLEMENTED IN A WRITING EXECUTED BY A DULY AUTHORIZED SIGNATORY OF EACH PARTY.

4.9 PROVIDER will not be responsible for the maintenance, repair or replacement of, or the services necessitated by reason of:

(a) Non-maintainable, non-replaceable or obsolete parts of the Equipment beyond the warranties herein, including but not limited to: ductwork, shell and tubes, heat exchangers, coils, unit cabinets, casings, refractory material, electrical wiring, water and pneumatic piping, structural supports, cooling tower fill, slats and basins, etc. unless otherwise specifically stated herein; or (b) CLIENT, or a third-party's, negligence, abuse, misuse, improper or inadequate repairs or modifications, improper operation, lack of operator maintenance or skill, corrosion, erosion, improper or inadequate water treatment, electrolytic action, chemical action, failure to comply with manufacturer's operating and environmental requirements, Acts of God, or other reasons beyond PROVIDER'S control. Unless expressly agreed in writing, PROVIDER is not responsible for the removal or reinstallation of replacement valves, dampers, or waterflow and tamper switches with respect to pipes and ductwork, including vent or drain system. PROVIDER ASSUMES NO RESPONSIBILITY FOR ANY SERVICE PERFORMED ON ANY EQUIPMENT OTHER THAN FOR THAT PERFORMED BY PROVIDER OR ITS AGENTS.

4.10 PROVIDER shall obtain all approvals, permits and consents from government authorities and others as may be required for the performance of the Work.

## **Article 5 Performance Guarantee**

5.1 PROVIDER guarantees that the Guaranteed Savings generated over the Guarantee Term will be no less than the Total Guaranteed Savings shown in the Performance Assurance Agreement, Exhibit 1-B. The measurement and verification calculation methodology for determining the Measured and Verified Savings is set forth in the Performance Assurance Agreement, Exhibit 1-B.

5.1.1 General. Except as otherwise provided, energy savings will be calculated for each month of each Annual Period as the product of (a) "units of energy saved" (kWh, Therms, GJ, etc.) multiplied by (b) "cost of energy."

(a) Units of energy saved are computed as specified in Exhibit 1-B. Units of energy saved are calculated by subtracting current period measured units of energy consumed from the adjusted Baseline units of energy defined in Exhibit 1-B. Adjustments to the Baseline energy units are based on factors such as weather, occupancy, operating hours, etc., and changes to the Baseline conditions and operating practices as defined in Exhibit 1-B.

(b) Cost of energy units and any future escalation factors which are to be applied are set forth in Exhibit 1-B.

5.2 PROVIDER and CLIENT agree that the January 1, 2013 through December 31, 2013 Baseline data provided by CLIENT which is set forth in Exhibit 1-B is a full and accurate reflection of the existing Facilities, equipment, operation, business use and energy usage, and that such Baseline data will be the basis on which all future energy use will be compared in order to determine the Annual Realized Savings and the Accumulated Realized Savings.

5.3 PROVIDER and CLIENT agree that the Baseline defined in Exhibit 1-B will represent the new operating and/or equipment profile of the Facilities resulting from the FIM implementation. The Performance Guarantee is dependent upon and is subject to the express condition that CLIENT operates and maintains its Facilities within the Baseline parameters during the entire term of the Performance Guarantee Period.

5.4 CLIENT agrees to notify PROVIDER prior to or within 30 days of any:

(a) Any change to operating schedules, strategies, equipment and conditions in the Facilities from those described in the Baseline data; or,

(b) Any other changes in or at the Facilities that may increase or decrease energy usage, including without limitation: changes in operations, business conducted, occupancy, hours of operation, and energy consuming equipment and malfunctions, failures and related changes in energy consuming equipment; or,

(c) Any damage to, or destruction of, the FIM Work that may result in a change.

5.5 PROVIDER agrees to respond and advise CLIENT within 30 days of the receipt of a notice of a change that PROVIDER will:

- (a) Continue the Performance Assurance Agreement without adjustments;
- (b) Require an adjustment to the Performance Assurance Agreement as a result of the change; or,
- (c) Where a commercially reasonable adjustment to the Performance Guarantee is unavailable, terminate the Performance Assurance Agreement and terminate the Performance Guarantee.

5.6 Failure of CLIENT to notify PROVIDER of a change shall void the Performance Guarantee and the Performance Assurance Agreement where a commercially reasonable adjustment is unavailable and where a Savings Shortfall cannot be prevented.

5.7 PROVIDER shall include the costs of the Measurement and Verification Services labor. A guarantee bond will be required only on the amount of guaranteed, measured and verified energy savings shown in Exhibit 1-B.

5.8 Unless expressly contrary to law, any disputes concerning the calculation of the Annual Realized Savings, the Accumulated Realized Savings, or changes to the Baseline under this Agreement, that are not resolved by negotiation between the Parties within thirty (30) days of the notice of the dispute, will be resolved by a third-party professional engineering firm reasonably acceptable to both PROVIDER and CLIENT. The determination of such firm will be final and binding upon CLIENT and PROVIDER. The non-prevailing party will each be responsible for the fees of such firm.

## **Article 6 CLIENT's Responsibilities**

6.1 CLIENT, without cost to PROVIDER, shall:

(a) Designate a contact person with authority to make decisions for CLIENT regarding the Work and provide PROVIDER with information sufficient to contact such person in an emergency;

(b) Coordinate the work of contractors under CLIENT'S sole control with the Work and Services so as not to disrupt the Work and Services proceeding in an efficient manner.

(c) Provide or arrange for access and make all reasonable provisions for PROVIDER to enter any Site where Work is to be performed so that Work may proceed in an efficient manner;

(d) Permit PROVIDER to control and/or operate all of the Facilities' controls, systems, apparatus, equipment and machinery necessary to perform the Work;

(e) Furnish PROVIDER with existing building drawings, surveys, legal descriptions, waste management plans and all other available information pertinent to the Work and any Site where the Work is to be performed as may be reasonably requested by PROVIDER;

(f) In accordance with Article 11 hereof, notify PROVIDER promptly of all known or suspected Hazardous Materials at the Site, of any contamination of the Site by Oil or Hazardous Material, and of any other conditions requiring special care or which may reasonably be expected to affect the Work, and provide PROVIDER with any available documents describing the quantity, nature, location and extent of such materials, contamination or conditions;

(g) Comply with all laws and provide any notices required to be given to any government authorities in connection with the Work, except such notices PROVIDER has expressly agreed in writing to give;

(h) Provide PROVIDER with legally required materials and information (including but not limited to Material Safety Data Sheets) related to all Hazardous Materials located at any Site where the Work is to be performed;

(i) Furnish to PROVIDER any contingency plans, safety programs and other policies, plans or programs related to any Site where the Work is to be performed;

(j) Operate, service and maintain all Equipment according to the manufacturer's recommendations including those set forth in the manufacturer's operating manuals or instructions, as well as all requirements of applicable law or of authorities having jurisdiction. CLIENT shall furnish all needed servicing and parts for said FIMs, which parts shall become part of the FIMs. Such Equipment shall be operated only in the specified operating environment, which shall be supplied by CLIENT, including without limitation: (1) suitable electrical service, including clean, stable, properly conditioned power, to all Equipment; (2) telephone lines, capacity and connectivity as required by such Equipment; and (3) heat, light, air conditioning or other environmental controls, and other utilities in accordance with the specifications for the Equipment; (4) Promptly notify PROVIDER of any unusual or materially changed operating conditions, hours of

usage, system malfunctions, installed equipment or building alterations that may affect the Equipment or energy usage or any Services; and,  
(k) If applicable, provide and pay for a dedicated voice grade dial-up phone line, or a mutually agreed communication method, and install a terminal block, or an equivalent communication mechanism, in a mutually agreed upon location. All on-line service Equipment (excluding the phone line) will remain the property of PROVIDER unless otherwise stated herein.

6.2 Unless contrary to law, CLIENT acknowledges that the technical and pricing information contained in this Agreement is confidential and proprietary to PROVIDER and agrees not to disclose it or otherwise make it available to others without PROVIDER's express written consent.

6.3 CLIENT acknowledges that it is now and shall at all times remain in control of the project Site. Except as expressly provided herein, PROVIDER shall not be responsible for the adequacy of the health or safety programs or precautions related to CLIENT'S activities or operations, CLIENT'S other contractor, the work of any other person or entity, or Site conditions. PROVIDER shall not be responsible for inspecting, observing, reporting or correcting health or safety conditions or deficiencies of CLIENT or others at the Site. So as not to discourage PROVIDER from voluntarily addressing health or safety issues while at the Site, in the event PROVIDER does address such issues by making observations, reports, suggestions or otherwise, CLIENT shall not hold, or attempt to hold, PROVIDER liable or responsible on account thereof.

## **Article 7 Changes and Delays**

7.1 As the Work is performed, conditions may change or circumstances, outside PROVIDER'S reasonable control and outside the scope of the Work that is to be funded with CLIENT'S Contingency Funds (including changes of law), may develop which would require PROVIDER to expend additional costs, effort or time to complete the Work, in which case PROVIDER will notify CLIENT and an equitable adjustment will be made to PROVIDER'S compensation and the time for performance. In the event conditions or circumstances require the Work to be suspended or terminated, PROVIDER shall be compensated for Work previously performed and for costs reasonably incurred in connection with the suspension or termination.

7.2 Either Party may request additions, deletions, modifications or changes to the Work. Any such requests shall only become effective upon execution of a written agreement by authorized representatives of both Parties.

7.3 PROVIDER may, in its sole discretion, substitute alternative parts, goods or equipment in the performance of the Work, provided that any such substitution shall be of an equal or better quality upon notification and approval by CLIENT.

7.4 PROVIDER shall not be responsible for loss, delay, injury, damage or failure of performance that may be caused by circumstances beyond its reasonable control, including, but not limited to, acts or omissions by CLIENT or its employees, agents or contractors, Acts of God, war, civil commotion, acts or omissions of government authorities, fire, theft, corrosion, flood, water damage, lightning, freeze-ups, strikes, lockouts, differences with workmen, riots, explosions, quarantine restrictions, delays in transportation, or shortage of vehicles, fuel, labor or materials. In the event of such delay or failure, the time for performance shall be extended by a period equal to the time lost plus a reasonable recovery period and the compensation shall be equitably adjusted to compensate for additional costs PROVIDER incurs due to such delay. If any such delay exceeds sixty (60) days, either Party may terminate this Agreement upon three (3) days notice to the other Party and CLIENT shall promptly pay PROVIDER for the allocable portion of the Work completed and for any costs and expenses of termination and for any loss or damage incurred with respect to materials, equipment, tools and machinery, including reasonable overhead and profit.

## **Article 8 Compensation**

8.1 Unless otherwise agreed in writing, PROVIDER shall be compensated for any extra work requested by CLIENT at current prevailing rates and shall be reimbursed for costs and expenses (plus reasonable profit and overhead) incurred in its performance of the Work or Services. The Contract Sum provides for, and is in consideration of, only the Work and Services specifically included under Article 4, Scope of Work, and further defined in Exhibit 1-A. All other work or services, including but not limited to the following, shall be separately billed or surcharged on a time and materials basis:

- (a) Emergency services performed at CLIENT'S request, if inspection does not reveal any deficiency covered by the Scope of Work and Services, Exhibit 1-A;
- (b) Work performed at CLIENT'S request at times other than during PROVIDER normal working hours; and
- (c) Work performed on equipment not covered by the Scope of Work and Services, Exhibit 1-A.
- (d) Any additional work and/or services shall result in a corresponding increase in the guaranteed maximum price set forth in Article 4 of this Agreement.

8.2 Unless otherwise agreed in writing, PROVIDER may invoice CLIENT on a monthly or other progress-billing basis. CLIENT and PROVIDER agree to the terms of payment set forth in Exhibit 1-D attached hereto subject to the rest of this Agreement. If CLIENT disagrees with any portion of an invoice, it shall notify PROVIDER in writing of the amount in dispute and the reason for its disagreement within 15 days of receipt of the invoice, and shall pay the portion not in dispute.

8.3 Except as provided in Section 8.2 of this Agreement, PROVIDER may suspend or terminate the Work at any time if payment is not received when due and shall be entitled to compensation for the Work previously performed and for costs reasonably incurred in connection with the suspension or termination.

8.4 Except for disputed amounts as described in Section 8.2 of this Agreement, amounts not paid within 30 days of invoice date, CLIENT shall pay interest from invoice date until payment is received at the lesser of 8% per annum or the maximum rate allowed by law.

8.5 Except to the extent expressly agreed in writing, PROVIDER'S fees do not include any taxes, excises, fees related to the Work, and CLIENT shall pay such amounts or reimburse PROVIDER for any amounts it pays upon documentation provided to CLIENT that it finds satisfactory. If CLIENT claims that the Work is subject to a tax exemption or direct payment permit, it shall provide PROVIDER with a valid exemption certificate or permit and, unless specifically prohibited by law, shall, to the extent permitted by law indemnify, defend and hold PROVIDER harmless from any taxes, costs and penalties arising out of the use or

acceptance of same except for disputed amounts as described in Section 8.2 of this Agreement.

## **Article 9 Acceptance**

When PROVIDER believes that all, or an independent, definable phase or portion, of the Work is Substantially Complete, PROVIDER will submit a Certificate of Substantial Completion to CLIENT. If the described portion of the Work as performed is Substantially Complete as defined herein, CLIENT will accept that portion of Work by signing the Certificate of Substantial Completion and returning it to PROVIDER. If CLIENT believes the portion of the Work is not Substantially Complete, then CLIENT shall notify PROVIDER within fifteen (15) business days of any discrepancies and PROVIDER shall correct the Work to conform to the description of the Work set forth herein and resubmit the Certificate of Substantial Completion to the CLIENT if PROVIDER agrees with the notice of discrepancies or, if PROVIDER disagrees with the notice, notify the CLIENT of its disagreement and such disagreement shall be resolved under the terms of this Agreement. If CLIENT does not deliver written notice to PROVIDER within fifteen (15) business days of receiving the Certificate of Substantial Completion, CLIENT will be deemed to have agreed to, signed and returned the Certificate of Substantial Completion. Any disputes concerning the Substantial Completion of the Work will be resolved in accordance with Section 13.4 of this Agreement. Each party will be responsible for an equal share of the fees of the mediator.

When PROVIDER believes that all of the Work is Substantially Complete, PROVIDER will submit a Certificate of Final Completion to CLIENT. If all of the Work as performed is Finally Complete as defined herein, CLIENT will accept the Work by signing the Certificate of Final Completion and returning it to PROVIDER. If CLIENT believes all of the Work is not Finally Complete, then CLIENT shall notify PROVIDER within fifteen (15) business days of any discrepancies and PROVIDER shall correct the Work to conform to the description of the Work set forth herein and resubmit the Certificate of Final Completion to the CLIENT if PROVIDER agrees with the notice of discrepancies or, if PROVIDER disagrees with the notice, notify the CLIENT of its disagreement and such disagreement shall be resolved under the terms of this Agreement. If CLIENT does not deliver written notice to PROVIDER within fifteen (15) business days of receiving the Certificate of Final Completion, CLIENT will be deemed to have agreed to, signed and returned the Certificate of Final Completion. Any disputes concerning the Final Completion of the Work will be resolved in accordance with Section 13.4 of this Agreement. Each Party will be responsible for an equal share of the fees of the mediator.

## **Article 10 Insurance and Allocation of Risk**

10.1 PROVIDER shall maintain the following insurances while performing the Work and shall add CLIENT as an "Additional Insured" to each policy that is referenced in subsections (c) through and including (e) hereof:

(a) Workers' Compensation at the statutory amounts and limits as prescribed by applicable law.

(b) Employer's Liability insurance (and, where applicable, Stop Gap extended protection endorsement) limits of liability shall be:

- \$2,000,000 General Aggregate
- \$2,000,000 Products – Comp/OP AGG
- \$2,000,000 Personal & Adv Injury
- \$2,000,000 Per Occurrence

(c) PROVIDER shall carry Automobile Liability insurance in the Occurrence Coverage Form covering all owned, hired and non-owned automobiles and trucks used by or on behalf of PROVIDER providing insurance for bodily injury liability and property damage liability for the limits of: \$2,000,000 per occurrence/aggregate

(d) PROVIDER shall carry Excess Liability insurance in the Occurrence Coverage Form with limits of: \$5,000,000 per occurrence/aggregate

10.2 CLIENT will maintain, at its own expense, property insurance written on a builder's "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus the value of subsequent modifications and cost of materials supplied or installed by others, on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in Contract Documents or otherwise agreed in writing by PROVIDER, until final payment has been made to PROVIDER or this Agreement is terminated, whichever is earlier. The policy form shall include without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, windstorm, falsework, testing and startup, rebuilding and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for PROVIDER'S services and expenses required as result of such insured loss. If the insurance requires deductibles or retentions, CLIENT shall pay costs not covered because of such deductibles or retentions. This insurance shall cover portions of the Work off the Site, and also portions of the Work in transit. Partial occupancy or use shall not commence unless the insurance company providing this insurance has consented to such partial occupancy or use by endorsement for otherwise. PROVIDER shall maintain boiler and machinery insurance which shall specifically cover such insured objects during installation and until Acceptance by CLIENT. The insurance required by this section shall include the interests of CLIENT, PROVIDER, subcontractor and sub-subcontractor in the Work.

PROVIDER shall be included as an additional insured on each such insurance coverage. CLIENT and PROVIDER waive all rights against each other and any of their subcontractors, sub-subcontractors, agents and employees for damages caused by fire or other causes of loss to the extent covered by the insurance required by this section and for any other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by CLIENT as fiduciary. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged. Insurance certificates shall be furnished upon request.

10.3 Risk of loss of materials and Equipment furnished by PROVIDER shall pass to the CLIENT upon the earlier of either i) issuance of warranty, or ii) Substantial Completion of that portion of the Work involving such material and Equipment. However, until PROVIDER is paid in full, PROVIDER shall retain title for security purposes only and the right to repossess the materials and Equipment.

10.4 PROVIDER will indemnify CLIENT from and against third party losses, claims, expenses and damages (including reasonable attorney's fees) for personal injury or physical damage to property (collectively "Damages"). Such indemnification shall be solely to the extent the Damages are caused by or arise directly from PROVIDER or its employees, consultants' or agents' negligent acts or omissions or willful misconduct in connection with PROVIDER'S performance of the Work. PROVIDER'S obligations under this indemnity shall not extend to Damages arising out of or in any way attributable to the negligence of CLIENT or its agents, contractors or employees. PROVIDER reserves the right to control the defense and settlement of any claim for which PROVIDER has an obligation to indemnify hereunder.

UNLESS CONTRARY TO APPLICABLE LAW, IN NO EVENT SHALL CLIENT OR PROVIDER BE LIABLE UNDER THIS INDEMNITY OR OTHERWISE UNDER THIS AGREEMENT FOR SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES, INCLUDING COMMERCIAL LOSS, LOSS OF USE, OR LOST PROFITS, HOWEVER CAUSED, EVEN IF PROVIDER OR THE CLIENT HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, ADDITIONALLY, PROVIDER'S AGGREGATE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES OR EXPENSES ARISING OUT OF THIS AGREEMENT, OR OUT OF ANY GOODS OR SERVICES FURNISHED UNDER THIS AGREEMENT, WHETHER BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY, AGENCY, WARRANTY, TRESPASS, INDEMNITY OR ANY OTHER THEORY OF LIABILITY, SHALL BE LIMITED TO TEN PERCENT (10%) OF THE TOTAL COMPENSATION RECEIVED BY PROVIDER FROM THE CLIENT UNDER THIS AGREEMENT.

**10.5 As to Patents and Copyrights:**

(a) PROVIDER will, at its own expense, defend or at its option settle any suit or proceeding brought against CLIENT in so far as it is based on an allegation that any Work (including parts thereof), or use thereof for its intended purpose, constitutes an infringement of any United States patent or copyright, if PROVIDER is promptly provided Notice and given authority, information, and assistance in a timely manner for the defense of said suit or proceeding. PROVIDER will pay the damages and costs awarded in any suit or proceeding so defended. PROVIDER will not be responsible for any settlement of such suit or proceeding made without its prior written consent. In case the Work, or any part thereof, as a result of any suit or proceeding so defended is held to constitute infringement or its use by CLIENT is enjoined, PROVIDER will, at its option and its own expense, either: (i) procure for CLIENT the right to continue using said Work; (ii) replace it with substantially equivalent non-infringing Work; or (iii) modify the Work so it becomes non-infringing.

(b) PROVIDER will have no duty or obligation to CLIENT under Section 10.5(a) to the extent that the Work is: (i) supplied according to CLIENT'S design or instructions wherein compliance therewith has caused PROVIDER to deviate from its normal course of performance ; (ii) modified by CLIENT or its contractors after delivery; or (iii) combined by CLIENT or its contractors with items not furnished by provider and by reason of said design, instruction, modification, or combination a suit is brought against CLIENT. In addition, if by reason of such design, instruction, modification or combination, a suit or proceeding is brought against PROVIDER, unless expressly prohibited by law, CLIENT shall protect PROVIDER in the same manner and to the same extent that PROVIDER has agreed to protect CLIENT under the provisions of Section 10.5(a ) above.

(c) THIS SECTION 10.5 IS AN EXCLUSIVE STATEMENT OF ALL THE DUTIES OF THE PARTIES RELATING TO PATENTS AND COPYRIGHTS, AND DIRECT OR CONTRIBUTORY PATENT OR COPYRIGHT AND OF ALL THE REMEDIES OF THE CLIENT RELATING TO ANY CLAIMS, SUITS, OR PROCEEDINGS INVOLVING PATENTS AND COPYRIGHTS. Compliance with Section 10.5 as provided herein shall constitute fulfillment of all liabilities of the Parties under the Agreement with respect to the intellectual property indemnification.

**10.6** The Parties acknowledge that the price for which PROVIDER has agreed to perform the Work and obligations under this Agreement was calculated based upon the foregoing allocations of risk, and that each Party has expressly relied on and would not have entered into this Agreement but for such allocations of risk.

## **Article 11 Hazardous Materials Provisions**

11.1 The Work does not include directly or indirectly performing or arranging for the detection, testing, handling, storage, removal, treatment, transportation, disposal, monitoring, abatement or remediation of any contamination of any Site at which Work is performed and any soil or groundwater at the Site by petroleum or petroleum products (collectively called "Oil"), asbestos, PCBs or hazardous, toxic, radioactive or infectious substances, including any substances regulated under RCRA, CERCLA or any other federal, state or local environmental laws, regulations, statutes, rules, standards or ordinances (collectively called "Hazardous Materials"), including without limitation: ionization smoke detectors, ballasts, mercury bulb thermostats, used oil, contaminated filters, contaminated absorbents, and refrigerant. Except as expressly disclosed pursuant to Section 11.2, CLIENT represents and warrants that there are no Hazardous Materials or Oil, present at the CLIENT'S locations where the Work is to be performed. PROVIDER will notify the CLIENT immediately if it discovers or reasonably suspects the presence of any previously undisclosed Oil or Hazardous Material. All Services have been priced and agreed to by PROVIDER in reliance on CLIENT'S representations as set forth in this Article. The discovery or reasonable suspicion of Hazardous Materials or hazardous conditions at a Site where PROVIDER is to perform Work or of contamination of the Site by Oil or Hazardous Materials not previously disclosed pursuant to Section 11.2 shall entitle PROVIDER to suspend the Work immediately, subject to mutual agreement of terms and conditions applicable to any further Work, or to terminate the Work and to be paid for Work previously performed.

11.2 CLIENT warrants that, prior to the execution of the Agreement, it notified PROVIDER in writing of any and all Oil or Hazardous Materials, known to the best of its knowledge, present, potentially present or likely to become present at the Site and provided a copy of any Site safety policies and information, including but not limited to lock-out and tag procedures, chemical hygiene plan, material safety data sheets, and other items covered or required to be disclosed or maintained by federal, state, or local laws, regulations or ordinances.

11.3 Regardless of whether or not Oil or Hazardous Material was disclosed pursuant to Section 11.2, CLIENT shall be solely responsible for properly testing, abating, encapsulating, removing, disposing, remedying or neutralizing such Oil or Hazardous Materials, and for the costs thereof unless such Oils or Hazardous Materials are introduced to the Site by PROVIDER. In the event PROVIDER is responsible for introducing Oil or Hazardous Materials on the Site, PROVIDER shall be solely responsible for all of the actions and costs identified in the immediately preceding sentence. Even if an appropriate change order has been entered into pursuant to Section 11.1, PROVIDER shall have the right to stop the Work until the Site is free from Oil or Hazardous Materials unless such Oil or Hazardous Materials are introduced to the Site by PROVIDER. In such event, PROVIDER will receive an equitable extension of time to complete the Work, and

compensation for delays caused by Oil or Hazardous Materials remediation; provided, however that no such extension of time will be provided if such Oil or Hazardous Materials is introduced to the Site by PROVIDER. In no event shall PROVIDER be required or construed to take title, ownership or responsibility for such Oil or Hazardous Materials unless such Oils or Hazardous Materials are introduced to the Site by PROVIDER. CLIENT shall sign any required waste manifests in conformance with all government regulations, listing CLIENT as the generator of the waste unless such Oils or Hazardous Material are introduced to the Site by PROVIDER. If someone other than CLIENT is the generator of the waste, CLIENT shall arrange for such other person to sign such manifests; provided, however, if such Oil or Hazardous Materials are introduced to the Site by PROVIDER, PROVIDER shall sign any required waste manifests in conformance with all government regulations, listing PROVIDER as the generator of the waste.

11.4 Except where expressly prohibited by law, for separate consideration of \$10 and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the CLIENT shall indemnify, defend and hold PROVIDER harmless from and against any damages, losses, costs, liabilities or expenses (including attorneys' fees) arising out of any Oil or Hazardous Materials or from the CLIENT'S breach of, or failure to perform its obligations under this Article; provided, however, that no such indemnification shall be provided to PROVIDER if such Oil or Hazardous Materials are introduced to the Site by PROVIDER.

## **Article 12 Disputes**

12.1 The Parties desire to resolve disputes arising out of this Agreement without litigation. Accordingly, except for action seeking a temporary restraining order or injunction related to the purposes of this Agreement, or suit to compel compliance with this dispute resolution process, the Parties agree to use the following alternative dispute resolution procedure as their sole remedy with respect to any controversy or claim arising out of, or relating to, this Agreement or its breach.

12.2 At the written request of a Party, each Party will appoint a knowledgeable, responsible representative to meet and negotiate in good faith to resolve any dispute arising under this Agreement. The locations, format, frequency, duration, and conclusion of these discussions shall be left to the discretion of the representatives. Upon agreement, the representatives may utilize other alternative dispute resolution procedures, such as mediation to assist in the negotiations. Discussions and correspondence among the representatives for purposes of these negotiations shall be treated as confidential information developed for purposes of settlement, exempt from discovery and productions, which shall not be admissible in the arbitration described below or in any lawsuit without the concurrence of all Parties. Documents identified in or provided with such communications, which are not prepared for purposes of the negotiations, are not so exempted and may, if otherwise admissible, be admitted in evidence in the arbitration or lawsuit.

12.3 If the negotiations do not resolve the dispute within 60 days of the initial written request, the dispute shall be submitted to binding arbitration by a single arbitrator pursuant to the Construction Industry Arbitration Rules of the American Arbitration Association. A Party may demand such arbitration in accordance with the procedures set out in those rules. Discovery shall be controlled by the arbitrator and shall be permitted to the extent set out in this section. Each Party may submit in writing to a Party, and that Party shall so respond, to a maximum of any combination of 35 (none of which may have subparts) of the following: interrogatories, demands to produce documents, and requests for admission. Each Party is also entitled to take the oral deposition of one individual of another Party. Additional discovery may be permitted upon mutual agreement of the Parties or by the arbitrator upon a showing of good cause. The arbitration hearing shall be commenced within 60 days of the demand for arbitration. The arbitration shall be held in the city where the project is located. The arbitrator shall control the scheduling so as to process the matter expeditiously. The Parties may submit written briefs. The arbitrator shall rule on the dispute by issuing a written opinion within 30 days after the close of hearings. The times specified in this section may be extended upon mutual agreement of the Parties or by the arbitrator upon a showing of good cause. Judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction.

12.4 Notice of the demand for arbitration shall be filed in writing with the other Party to the Agreement and with the American Arbitration Association. The demand for arbitration shall be made within a reasonable time after the claim, dispute, or other matter in question has arisen, and in no event shall it be made after the date when institution of legal or equitable proceedings based on such claim, dispute, or other matter in question would be barred by the applicable statute of limitations.

12.5 Unless otherwise agreed in writing, PROVIDER shall carry on the Work and maintain its progress during any arbitration proceedings, and the CLIENT shall continue to make payments to PROVIDER in accordance with the Contract Documents.

12.6 The prevailing Party in any arbitration shall be able to collect from the other Party all expenses the prevailing Party incurs while protecting the prevailing Party's rights under this Agreement. This shall include any appropriate legal or administrative action that the prevailing Party must take to protect the prevailing Party's interests, such as, but not limited to, attorney and accounting fees, court reporter fees, filing fees, the actual cost of effecting service of papers or providing witnesses, and expenses incurred by the prevailing Party.

## **Article 13 Miscellaneous Provisions**

13.1 Notices between the Parties shall be in writing and shall be hand-delivered or sent by certified mail, express courier, acknowledged telefax, or email properly addressed to the appropriate Party. Any such notice shall be deemed to have been received when delivered in-person or when sent by telefax or email, or five (5) business days subsequent to deposit in the U.S. mail, or one (1) day after deposit with express (overnight, one day delivery) courier.

13.2 Neither CLIENT nor PROVIDER shall assign or transfer any rights or obligations under this Agreement, except that either Party may assign this Agreement to its affiliates and that PROVIDER may use subcontractors in the performance of the Work. Nothing contained in this Agreement shall be construed to give any rights or benefits to anyone other than CLIENT and PROVIDER without the express written consent of both Parties.

13.3 This Agreement shall be governed by and construed in accordance with the laws of the State or Commonwealth within which the Facilities are located.

13.4 This Agreement and all provisions of this Agreement allocating responsibility or liability between the Parties shall survive the completion of the Work and the termination of this Agreement.

13.5 PROVIDER'S performance of the Work is expressly conditioned on CLIENT assenting to all of the terms of this Agreement, notwithstanding any different or additional terms contained in any writing at any time submitted or to be submitted to PROVIDER by CLIENT relating to the Work, even if signed by PROVIDER, unless PROVIDER signs a written statement expressly indicating that such terms supersede the terms of this Agreement

13.6 Any provision of this Agreement found to be invalid, unlawful or unenforceable by a court of law shall be ineffective to the extent of such invalidity, and deemed severed here from, without invalidating the remainder of this Agreement. All other provisions hereof shall remain in full force and effect.

13.7 The waiver by a party of any breach by the other party of any term, covenant or condition hereof shall not operate as a waiver of any subsequent breach hereof. No waiver shall operate or be effective unless made in writing and executed by the party to be bound thereby.

13.8 In the event that the statute or CLIENT requires that PROVIDER procure a performance bond and/or a payment bond, PROVIDER shall provide a performance and payment bond in the amount of the Contract Sum, as adjusted by change orders, if any, within ten (10) days of contract signing, if required expressly under the terms of the Work, or within thirty (30) days of any change order requiring the provision of said bonds. The performance and payment bond

will solely apply to the Work performed during the Construction Period and to the required statutory lien filing period thereafter. The performance and payment bond will not apply to any of the obligations included in the Performance Guarantee, Article 5 and Performance Assurance Agreement in Exhibit 1-B, contained herein (if the project carries a guaranteed, measured and verified energy savings amount). The cost associated with the procurement of the bonds shall be paid by CLIENT.

## **Exhibit 1-A - Scope of Work and Services**

### **1. Article 1: Scope of Services**

- 1.1. Description: Except as otherwise expressly provided herein, PROVIDER shall provide the necessary labor and material to perform the following scope of Work listed below for CLIENT.
- 1.2. General: Provide appropriate clerical services.
  - 1.2.1. Construction Performance Bond
  - 1.2.2. Construction Payment Bond
- 1.3. Technical Specifications, Drawings, and Exhibits: The Work shall be performed in accordance with the specifications, drawings and other attachments hereto, which are specifically incorporated herein.
- 1.4. Specific Elements: The Work areas are assumed to have safe, free and clear access. The available use of site facilities, including water, electricity and restroom facilities is also assumed. The owner has first right of refusal to all equipment, piping and electrical removed as a part of this project. It should be noted that the following work utilizes straight-time labor, only (Monday through Friday 7:00am – 4:00pm) and does not include any required asbestos, lead paint or fuel oil tank and associated soil abatement:

## **Beech Grove Water System, Inc. - (\$489,710.00)**

### **A. Residential and Commercial Water Meter Replacement Project**

- A.1.1. Provide a complete AMI (Advanced Meter Infrastructure) system for a total of (566) new water meters throughout the Community of Beech Grove, KY. All new water meters and the AMI system will be manufactured by Zenner USA.
- A.1.2. Prior to the start of this water meter replacement project, PROVIDER will work with the CLIENT's personnel to finalize procedures to be followed for general public notification of this meter replacement project and access requirements for all meters located inside residential and commercial premises.
- A.1.3. Disconnect and remove the existing water meters throughout the community based on the following quantities provided to PROVIDER from CLIENT:
  - (362) – 5/8"x3/4" water meters
  - (10) – 1" water meters

\* Existing water meters are currently located throughout the community outside residential homes and commercial businesses in below grade water meter boxes and vaults with removable access lids. Removed existing water meters will be photographed, logged and stored at CLIENT supplied location for 3 months following completion of project. The

CLIENT will be responsible to recycle and / or dispose of the existing water meters after that period of time. Total number of existing water meters disconnected and removed as part of this project will be 372 water meters.

A.1.4. Disconnect and remove the manual read head on the existing water meters to be reused as part of this project. Existing water meters replaced throughout the Community since January 1, 2013 will be reused and left in place based on the following quantities provided to PROVIDER from the CLIENT:

- (192) – 5/8"x3/4" water meters

A.1.5. Furnish and install AMI (Advanced Meter Infrastructure) water meters and radio transmitters throughout the community. Existing water meters shall be replaced to match the size of the removed existing water meters based on the following sizes and quantities provided to PROVIDER from CLIENT:

<b>Meter Installation Summary Table</b>			
<b>Meter Size</b>	<b>Type of Meter</b>	<b>Quantity</b>	<b>Description</b>
5/8" x 3/4"	Multi-Jet	362	New AMI water meter with radio transmitter
5/8" x 3/4"	Multi-Jet	192	Reuse existing water meters replaced since January 1, 2013, replace manual read head with new AMI encoder and radio transmitter
1"	Multi-Jet	10	New AMI water meter with radio transmitter
<b>TOTAL:</b>		<b>564</b>	

<b>Meter Location Summary Table</b>		
<b>Meter Size</b>	<b>Quantity</b>	<b>Location</b>
5/8" x 3/4"	554	Underground meter pit / vault
1"	10	Underground meter pit / vault
<b>TOTAL:</b>	<b>564</b>	

A.1.6. The water meter replacement quantities and locations shown in the above tables are based upon data provided to PROVIDER from CLIENT. Any additional existing water meters that are found during installation will not be replaced as part of this contract. Any excess water meters and radio transmitters not installed will be returned to CLIENT to be used as future replacement / new service stock. If additional quantities are requested to be installed by CLIENT during this project, that install unit price per meter will be negotiated at that

- time since that is outside the scope of the work shown above.
- A.1.7. After PROVIDER makes three (3) attempts to gain access for water meter replacement and is not able to gain such access, the water meter and transmitter material for that account will be turned over to CLIENT for later replacement by the water department personnel.
  - A.1.8. Furnish and install a new underground service vault and new main service 6" ultrasonic AMI water meter downstream of the existing main service meter at the connection point to Henderson County Water. All associated valves and transition piping will be included for a complete workable system.
  - A.1.9. Furnish and install a new underground service vault and new main service 4" ultrasonic AMI water meter downstream of the existing main service meter at the connection point to West Davies County Water. All associated valves and transition piping will be included for a complete workable system.
  - A.1.10. Provide a handheld programming unit to CLIENT for future maintenance and new service connections to the new AMI system.
  - A.1.11. Furnish and install multiple enhanced repeaters throughout the community as required to operate the new AMI system.
  - A.1.12. Furnish and install a collector station with an antenna and all associated equipment on the existing community Water Department / Fire Station building.
  - A.1.13. Furnish and install all software required to read the new AMI water meters.
  - A.1.14. Furnish and install multiple enhanced repeaters and collectors as needed throughout the community as required to operate the new AMI system.
  - A.1.15. Complete system programming and testing is included. Three (3) days of complete system training will be given once system installation is complete.
  - A.1.16. Daily phone support and a complete one year maintenance service agreement are included.
  - A.1.17. Manufacturer reading system annual phone support is included for the first 10 years of this project.
  - A.1.18. Manufacturer maintenance / software support is included for the first 10 years of this project.
  - A.1.19. Manufacturing warranties apply for all equipment provided as part of this project.

All removed non water meter materials unwanted by CLIENT will become property of PROVIDER for proper removal and disposal.

Notes: In addition to the above scope of work, CLIENT is responsible for the following items set forth below in conjunction with this water meter replacement project:

1. CLIENT is responsible for manual meter reading until one month after project acceptance. PROVIDER will give radio read access to CLIENT after meter programming has been completed and tested.
2. Prior to project implementation CLIENT will provide a listing of any water meter issues, including limited access, water meters under water in exterior meter pits or issues with animals at residential locations. CLIENT shall work with each customer in order to gain safe access to these areas before installation is attempted by PROVIDER.
3. Assistance to PROVIDER in the location of existing service shut-off valves as needed for water meter replacements. PROVIDER will utilize individual metering isolation valves where available and operation without assistance from CLIENT.
4. All replaced existing water meters will be reinstalled at the depth dictated by the current water service line depth. It will be CLIENT's responsibility to change the existing water service line depth if a change in depth is required.
5. Existing water meter boxes / vaults and lids will be reused as part of this project. Relocation, raising or lowering of existing meter boxes / vaults is not included as part of this project. Existing water meter setters will be reused as part of this project. CLIENT is responsible to replace damaged or non-operational existing water meter setters as required before PROVIDER installs new water meter. CLIENT shall coordinate all areas affected with PROVIDER before installation begins.
6. CLIENT is responsible for water line repairs further than 24" away from the water meter. If the replaced water meter is located in a pit or vault, CLIENT is responsible for water line repairs outside the pit or vault, even if the required repair needed is less than 24" away from water meter. PROVIDER is not liable for damages outside this 24" work area, either on the water distribution side or on the CLIENT water service side in conjunction from the water meter replacement process.
7. PROVIDER will not be responsible for piping or equipment modifications required to gain access to existing water meters located in limited access areas.
8. PROVIDER will not be responsible for clearing residential or commercial areas in order to gain access to existing water meters for replacement. PROVIDER will coordinate with CLIENT installation procedures to be followed in order to gain safe access to these areas before installation is attempted.

#### **B. New Zone Water Metering Project**

- B.1.1. Furnish and install three (3) - 6", two (2) - 4" and one (1) - 3" ultrasonic AMI zone water meters at specified locations in the Community of Beech Grove, KY in order to measure water flows in various zones. All new water meters and the AMI system will be manufactured by Zenner USA.

- B.1.2. Furnish and install two (2) isolation valves at each new zone water meter location to match the water meter size shown above.
- B.1.3. Furnish and install six (6) new water meter pits with lids near each new zone water meter location. New AMI radio transmitter at each zone meter to be located inside new water meter pit.
- B.1.4. Complete water meter programming and testing is included.
- B.1.5. Manufacturing warranties apply for new zone water meters provided as part of this project.

**2. Article 2: Construction Period**

- 2.1. PROVIDER shall commence Work within fifteen (15) days of CLIENT receiving successful project financing. CLIENT will notify PROVIDER in writing once financing has been secured and finalized thereby funding the project.
- 2.1 Milestones: Specific scheduling milestones and coordination requirements are included as part of this contract.

**Exhibit 1-B Performance Assurance Agreement**

The following Table and Articles are attached and made part of this Exhibit:

- Article 1      Guaranteed Savings
- Article 2      Baseline Water Usage and Cost
- Article 3      Actual Measured and Verified Savings
- Article 4      Stipulated Savings
- Article 5      Utility Information Release

**Article 1: Guaranteed Savings**

1.1 PROVIDER guarantees that the savings generated for each Annual Period of the Guarantee Term will be equal to the amounts shown in Table 1.2. The measurement and verification calculation methodology for determining the Actual Measured and Verified Savings is set forth in this Exhibit. The Guaranteed Measured and Verified Savings is dependent upon and is subject to the express condition precedent that CLIENT enters into and maintains, during the entire Guarantee Term, the annual measurement and verification. If CLIENT fails to enter into, breaches, cancels or otherwise causes the termination of the annual measurement and verification the Guaranteed Savings shall terminate immediately and be void and of no force or effect.

1.2 Table A – Guaranteed Savings Summary

Annual Period	Stipulated Savings				Guaranteed Measured and Verified Savings	TOTAL Annual Savings
	Annual Energy Savings	* Annual Water Meter Accuracy Savings	Annual Operational Savings	Annualized Cost Avoidance Savings	\$	\$
Construction	\$3,000	\$7,000	\$0	\$1,000	\$0	\$11,000
Year 1	\$8,653	\$17,750	\$42,832	\$9,345	\$0	\$78,580
Year 2	\$8,999	\$18,460	\$44,117	\$9,345	\$0	\$80,921
Year 3	\$9,359	\$19,198	\$45,440	\$9,345	\$0	\$83,343
Year 4	\$9,733	\$19,966	\$46,804	\$9,345	\$0	\$85,848
Year 5	\$10,123	\$20,765	\$48,208	\$9,345	\$0	\$88,441
Year 6	\$10,528	\$21,596	\$49,654	\$9,345	\$0	\$91,122
Year 7	\$10,949	\$22,459	\$51,144	\$9,345	\$0	\$93,897
Year 8	\$11,387	\$23,358	\$52,678	\$9,345	\$0	\$96,768
Year 9	\$11,842	\$24,292	\$54,258	\$9,345	\$0	\$99,738
Year 10	\$12,316	\$25,264	\$55,886	\$9,345	\$0	\$102,811

Year 11	\$12,809	\$26,274	\$57,563	\$9,345	\$0	\$105,991
Year 12	\$13,321	\$27,325	\$59,290	\$9,345	\$0	\$109,281
Year 13	\$13,854	\$28,418	\$61,068	\$9,345	\$0	\$112,685
Year 14	\$14,408	\$29,555	\$62,900	\$9,345	\$0	\$116,208
Year 15	\$14,984	\$30,737	\$64,787	\$9,345	\$0	\$119,854
<b>Total Guaranteed Savings</b>	<b>\$176,264</b>	<b>\$362,419</b>	<b>\$796,629</b>	<b>\$141,175</b>	<b>\$0</b>	<b>\$1,476,486</b>

\* The annual water meter accuracy savings shown in the Table A are calculated dollars based on baseline period water meter accuracy as compared to the new projected meter accuracy. The baseline period used for this calculation is the twelve month period beginning January 1, 2013 and ending December 31, 2013.

1.2.1 CLIENT and PROVIDER stipulate and agree that all of the Annual Energy and Annual Water Meter Accuracy Savings identified above in Table A shall be considered fully satisfied upon CLIENTS's final acceptance of the Project. The annual water meter accuracy savings will not be measured in accordance with any of the options listed below as part of this exhibit.

1.2.2 CLIENT and PROVIDER stipulate and agree that all of the Annual Operational Savings and Annualized Cost Avoidance Savings identified above in Table A shall be considered fully satisfied upon CLIENT's final acceptance of the Project.

1.2.3 The Guarantee Term shall be determined by the dividing the Contract Value, or project cost, by the Annual Guaranteed Savings.

### 1.3 Guarantee Accounting

1.3.1 PROVIDER will calculate the Annual Realized Savings as the sum of the Actual Measured and Verified Savings plus the Stipulated Savings.

1.3.2 PROVIDER shall prepare an annual reconciliation statement within the later of forty-five (45) calendar days after receipt of complete utility data or seventy-five (75) calendar days of the last day of each Annual Period to determine whether Annual Realized Savings for such Annual Period resulted in an Excess Savings or a Savings Shortfall by comparing the Annual Guaranteed Savings and the Annual Realized Savings.

1.3.3 Should the Annual Realized Savings for any Annual Period be

more than the Guaranteed Savings for that Annual Period, PROVIDER will apply the Excess Savings toward the Annual Total Guaranteed Savings for the immediately following Annual Period.

1.3.4 Any additional operational and energy costs including utility rebates avoided by CLIENT from any steps taken by PROVIDER in Facilities during the Guarantee Term will be added to the Annual Realized Savings for the respective Annual Period.

1.3.5 Should Accumulated Measured and Verified Savings meet or exceed Total Guaranteed Measured and Verified Savings prior to the end of the Guarantee Term PROVIDER'S obligations shall be fulfilled and the annual measurement and verification shall be terminated during the current annual reporting period.

1.3.6 If PROVIDER can correct a shortfall through operational improvement at no expense to CLIENT and with no future operational expenses and CLIENT declines to allow such operational improvement then any future shortfall the improvement would have corrected will be Stipulated Savings and added on an annual basis. Should the Annual Realized Savings at the end of any Annual Period be less than the Annual Guaranteed Savings after including any Excess Savings described in Section 1.3.3 above, the Savings Shortfall shall be:

1.3.6.1 (a) Carried over to the next Annual Period and increase the Annual Guaranteed Savings for such Annual Period; or

1.3.6.2 (b) In the event that the Savings Shortfall occurs in the final Annual Period, PROVIDER shall pay CLIENT the Savings Shortfall within thirty (30) days following the completion of the annual reconciliation for such final Annual Period.

#### 1.4 Information and Changes in Use

1.4.1 CLIENT will notify PROVIDER in writing within thirty (30) calendar days of:

1.4.1.1 (a) Any Changes to energy consuming or regulating equipment, operating schedules, business/services conducted, occupancy, or hours of operation; or

1.4.1.2 (b) Any malfunctions, failures and related changes in energy consuming or regulating equipment; or

1.4.1.3 (c) Any damage to, destruction of, or condemnation of

the Work.

1.4.2 CLIENT will provide PROVIDER with accurate Facility operating information, including energy usage and cost, executed preventive maintenance and repair records and occupancy levels during each Annual Period, as soon as such information becomes available to CLIENT. Without limiting the generality of the foregoing, CLIENT will provide PROVIDER with copies of all utility bills within thirty (30) calendar days of receipt during the Guarantee Term.

1.4.3 CLIENT will provide such remote access, through the Energy Management System software package or otherwise, as PROVIDER reasonably requests. All charges related to telephone/data line installation, activation and communication services are the responsibility of CLIENT.

#### 1.5 Guarantee Limits

1.5.1 The payments and credits based on Savings Shortfalls, if any, are the sole remedy of CLIENT for the Guaranteed Savings. Any payments made or to be made to CLIENT under the terms of the Guaranteed Savings shall not exceed the payments actually made by CLIENT to PROVIDER for the Contract Sum.

#### 1.6 Dispute Resolution

1.6.1 Any disputes concerning the calculation of the Annual Realized Savings or the Accumulated Realized Savings under this contract will be resolved as set forth in this agreement.

#### 1.7 Discontinuance of Guarantee Clause

1.7.1 Should CLIENT decide to discontinue the guarantee before the end of the contract period, 30 days notice will be given in writing and one of the following will apply:

1.7.1.1 PROVIDER will terminate the annual measurement and verification and CLIENT agrees to pay PROVIDER a prorated percentage of the annual fee based on the date at the end of the 30-day notice and the current annual reporting period.

1.7.1.2 PROVIDER will terminate the annual measurement and verification and PROVIDER agrees to reimburse CLIENT a prorated percentage of the annual fee paid to PROVIDER based on the date at the end of the 30-day notice and the current annual reporting period.

**2 Article 2: Baseline Water Usage and Cost**

2.1 Water is supplied to CLIENT through separate metered services.

2.2 The Base Year unit costs summarized in Table B below were established from utility data provided by CLIENT and shall be used for all Base Year calculations unless more complete and/or reliable data is made available prior to the Guarantee Term.

Table B – Baseline Water Meter Accuracy Summary

<b>Baseline Water Meter Accuracy Summary</b>			
<b>Meter Size</b>	<b>Quantity</b>	<b>Baseline Accuracy</b>	<b>Annual Metered Usage (Gallons)</b>
5/8" x 3/4"	554	92%	-
1"	10	Not measured	-
<b>TOTAL:</b>			<b>42,696,103</b>

\* Per utility data for the annual period from January 1, 2013 to December 31, 2013 as provided by CLIENT

**2.3 Annual Percentage Increase**

2.3.1 Water costs used to determine the value of the annual energy savings are those in effect during the Base Year, or the majority there of, will be held constant over the Guarantee Term. Although water prices have historically escalated in response to economic factors, such as inflation, keeping them constant over the Guarantee Term is a conservative approach. As water prices increase CLIENT will realize more savings than anticipated. However, in the unlikely event that water prices decrease, the water saved will still be valued at the Base Year rates.

### **3 Article 3: Actual Measured and Verified Savings**

- 3.1 PROVIDER calculates the Actual Measured and Verified Savings according to the methods provided by the International Performance Measurement and Verification Protocol (IPMVP). The IPMVP is a voluntary consensus document written by and for technical, procurement, and financial personnel in government, commerce, and industry. The IPMVP provides an overview of current measurement and verification techniques and sets a framework for verifying third-party-financed performance projects for public and private sector projects. The IPMVP is intended to be used as a basis for establishing payment of performance contracts. The following procedures are intended to be fully compatible and consistent with the IPMVP.**
- 3.2 The Guaranteed Measured and Verified Savings summarized in Table A will be measured and verified according to Option A.**
  - 3.2.1 Option A (Stipulated) is for projects in which there is not a high degree of interaction between installed Facility Improvement Measures and/or the measurement of individual component savings can be isolated from the rest of the facility.**
    - 3.2.1.1 Option A is best applied where:**
      - 3.2.1.1.1 Interactive effects between retrofits or with other facility equipment can be assumed to be not significant.**
      - 3.2.1.1.2 The independent variables that affect energy use are not complex and excessively difficult to represent with manufacturer's data, historical data or engineering standards/analysis.**
      - 3.2.1.1.3 There is a high degree of confidence by PROVIDER and CLIENT that the Guaranteed Measured and Verified Savings will be realized from established industry trends.**
      - 3.2.1.1.4 The cost associated with Options B or C are not justified, approach or exceed the Guaranteed Measured and Verified Savings.**
      - 3.2.1.1.5 The continued effectiveness of the facility improvement can be assessed by routine visual inspection of stipulated parameters.**
    - 3.2.1.2 Actual Measured and Verified Savings**

**3.2.1.2.1 Guaranteed Measured and Verified Savings in Table A shall equal Actual Measured and Verified Savings for Option A and all energy savings shall be Stipulated Energy Savings deemed to be achieved per Article 4 of this Agreement.**

**3.2.1.2.2 Stipulated Energy Savings are based upon Industry Engineering Standards using (1) CLIENT historical data, (2) equipment manufacturer's data and (3) American Water Works Association (AWWA) standards.**

**3.3 Water Meter Accuracy Savings are not measured and verified in the same manner as other energy conservation measures, as energy and/or water are not being conserved or saved in a physical sense. This item being "saved" is technically "unbilled water or lost revenue." PROVIDER guaranteed savings relating to water meters is limited solely to the accuracy of the water meters as listed in Table C below, operating under normal conditions, which have been replaced pursuant to this Agreement. All savings relating to the water meter replacement are agreed upon and will be considered achieved and met in full upon final project acceptance.**

**3.3.1 CLIENT agrees to the following requirements as acceptance of this project in order for full Water Meter Accuracy benefits to be realized:**

**3.3.1.1 CLIENT acknowledges that population growth or shrinkage and changes in commercial business, industrial business and wholesale customers may affect water consumption and its associated water revenue.**

**3.3.1.2 At a minimum, CLIENT shall be responsible for maintaining the existing water rate schedules. Any reduction in monthly base charges, monthly allowable minimum base consumption, or monthly volume charges may reduce the anticipated project benefits to be recovered from improving water meter accuracy.**

**3.3.1.3 CLIENT acknowledges that weather may effect water consumption by customers. Changes in annual rainfall amounts may serve to either increase or decrease billed consumption and its associated billed water revenue.**

**3.3.1.4 CLIENT assumes responsibility for authorizing any non-metered water usage by anyone throughout the**

city.

- 3.3.1.5 Future care and maintenance of the utility system, including all water meters, AMI equipment and systems, meter boxes, and meter vaults at or above manufacturers' specifications and recommendations.
  - 3.3.1.6 CLIENT assumes responsibility for maintaining water quality. Any water quality issues that arise that affect the water meter manufacturers' warranty are the responsibility of CLIENT and may void the manufactures warranty.
  - 3.3.1.7 CLIENT assumes responsibility for maintaining the average system pressure that was present during the baseline consumption period. A decrease in system pressure may cause subsequent decreases in the consumption and billed water revenue.
  - 3.3.1.8 CLIENT acknowledges that the implementation of any water conservation or rationing programs will serve to decrease consumption and therefore decrease billed water revenue.
- 3.4 The water meters identified in Scope of Work, Annual water meter guaranteed accuracy will be as agreed upon in Table A. Annual accuracy tests will not be performed in support of this guarantee.
- 3.4.1 Water Meter Accuracy Savings Methodology / Calculations
    - 3.4.1.1 Water revenue is billed by metered water usage. If a water meter is not accurate, not all of the delivered water is billed to the water customer. As water meters age, they become less accurate. This creates an ever increasing percentage of unbilled water/sewer revenue. By replacing the water meters with new more accurate water meter models, the water meter accuracy is increased and therefore more water revenue is achieved by CLIENT. As many factors determine actual water usage, such as; weather, local economy, population shifts, etc., PROVIDER and CLIENT have agreed upon a baseline usage, by customer type and meter size, to calculate the financial benefit to CLIENT.

For

example:

If the baseline water billed usage for all water meters across the Community = 40,000,000 gallons/year and the baseline water meter

accuracy averaged for all water meters = 92%, the total water available to be billed = 42,000,000 gallons/year divided by 92% = 43,478,261 gallons/year. Therefore the unbilled water is 43,478,261 - 40,000,000 = 3,478,261 gallons/year.

If the new water meters are guaranteed to have 100.0% accuracy, the guaranteed benefit to CLIENT is calculated as follows:

Based on average water revenue of \$7.11 per 1000 gallons of billed water.

40,000,000 gallons/year divided by 100.0% water meter accuracy = 40,000,000 gallons/year.

When compared to the Baseline of 43,478,261 gallons/year of unbilled water:

43,478,261 gallons/year minus 40,000,000 gallons/year = 3,478,261 gallons /year, CLIENT has increased revenue of 3,478,261 gallons at \$7.11/ 1000 gallons = \$24,730.44.

Table C – Water Meter Guaranteed Accuracy

<b>Water Meter Guaranteed Accuracy</b>		
<b>Year</b>	<b>Water Meter Size 5/8"x3/4"</b>	<b>Water Meter Sizes 1"</b>
1	100.0%	100.0%
2	100.0%	100.0%
3	100.0%	100.0%
4	100.0%	100.0%
5	100.0%	100.0%
6	100.0%	100.0%
7	100.0%	100.0%
8	100.0%	100.0%
9	100.0%	100.0%
10	100.0%	100.0%
11	99.5%	99.5%
12	99.0%	99.0%
13	98.5%	98.5%
14	98.0%	98.0%
15	97.5%	97.5%

**4 Article 4: Stipulated Savings**

4.1 CLIENT and PROVIDER agree that the Stipulated Savings in Table A will be deemed to be achieved upon execution of this Agreement. The Annual Stipulated Savings shall be applied to each Annual Period following the Construction Period of the Guarantee Term, and shall not be measured or monitored during the Guarantee Term. Neither CLIENT nor PROVIDER will have any right to object to the use of Annual Stipulated Savings in the calculation of Annual Realized Savings.

**4.2 Annual Percentage Increase**

4.2.1 Costs used to determine the value of the Stipulated Savings are based on either actual cost provided by CLIENT or industry engineering standards, and will be held constant over the Guarantee Term. Although operational and construction costs have historically escalated in response to economic factors, such as inflation, keeping them constant over the Guarantee Term is a conservative approach therefore CLIENT will realize more savings than anticipated.

**5 Article 5: Utility Information Release**

5.1 CLIENT agrees to provide to PROVIDER copies or electronic files of utility billing for each of the applicable accounts for the Guarantee Term in order to substantiate and/or evaluate the utility usage within the city.

6.2 CLIENT agrees to provide to PROVIDER authorization to contact utility providers on behalf of CLIENT regarding rates, tariffs, and other applicable utility information for the Guarantee Term in order to substantiate and/or evaluate the utility usage within the community.

**Exhibit 1-C Draw Schedule**

**Project Draw Schedule**  
(Lump Sum)

Contract Amount (Base Bid) \$489,710.00

<u>Date</u>	<u>Draw</u>	<u>Comment</u>
CLOSING	\$225,000.00	Draw 1 (Mobilization, Design, Bond, Materials & Warranty)
4/1/2015	\$ 125,000.00	Draw 2*
5/1/2015	\$ 100,000.00	Draw 3*
6/1/2015	\$ 25,000.00	Draw 4*
7/1/2015	\$ 14,710.00	Draw 5* – Final Acceptance

\*Note - Dates of these draws will be determined after proper financing has been secured. Dates shown are projected.

Customer account # \_\_\_\_\_

Address \_\_\_\_\_

Telephone # \_\_\_\_\_

**Exhibit 1-D Construction Schedule**

PROVIDER shall provide to CLIENT a construction timeline within fifteen (15) days upon receipt of letter from CLIENT stating that CLIENT has secured project financing.

12/30/00  
[Handwritten signature]

AFFP  
LEGAL NOTICE REQUEST FOR PRO

**Affidavit of Publication**

STATE OF KY }  
COUNTY OF DAVIESS } SS

LEGAL NOTICE  
REQUEST FOR PROPOSALS / QUALIFICATIONS FOR A GUARANTEED SAVINGS CONTRACT

Carla Renfrow, being duly sworn, says:

Notice is hereby given that The Community of Beech Grove, McLean County Kentucky will receive Request for Proposals for a Guaranteed Savings Contract until 11:00 a.m., September 19th, 2014, at The Beech Grove Water Office, located at 445 N HWY 56, Calhoun KY 42327. Please submit nine (9) hard copies and one electronic copy of responses. Selection of qualified provider will occur by the governing elected on OCT. 14th 2014. The meeting will be held at the Beech Grove Fire Department.

That she is Accounting Clerk of the Messenger- Inquirer, a daily newspaper of general circulation, printed and published in Owensboro, Daviess County, KY; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

A GUARANTEED ENERGY SAVINGS AND FACILITY PROGRAM FOR THE COMMUNITY OF BEECH GROVE, KENTUCKY

August 22, 2014

The City's objectives in issuing this request for proposal is to provide a means in which to select a single qualified provider to perform the implementation of a guaranteed savings contract. The contract shall follow applicable Codes Kentucky General Assembly bills, HB-639 (1998), HB-264 (1996), and SB-157 governing Performance Contracting in the Commonwealth of Kentucky. Final selection will be made in accordance with the policies and administrative directive of The Community of Beech Grove, McLean County Kentucky.

That said newspaper was regularly issued and circulated on those dates.

The qualified provider to whom the work is awarded shall conform to the prevailing wage rates for this area. The qualified provider will be required to submit a performance bond to ensure the qualified provider's faithful performance of their obligations over the term of the guaranteed savings contract. To receive a copy of the Request for Proposals, please contact: Sheila Murphy 445 HWY 56 N. Calhoun, KY 42327. 270-273-5738 (Fax) 270-273-5770  
Any and all questions will be submitted in writing to Ms. Murphy. Contacting elected officials or CITY Staff will result in companies' elimination from consideration on this project. Email is the preferred method for communication.

SIGNED:

Carla Renfrow  
Accounting Clerk

The Community of Beech Grove Kentucky reserves the right to accept the Request for Proposal that, in its opinion, best serves the interests of the Community.

Subscribed to and sworn to me this 22nd day of August 2014.

Melanie Miller  
Melanie Miller, , Daviess County, KY

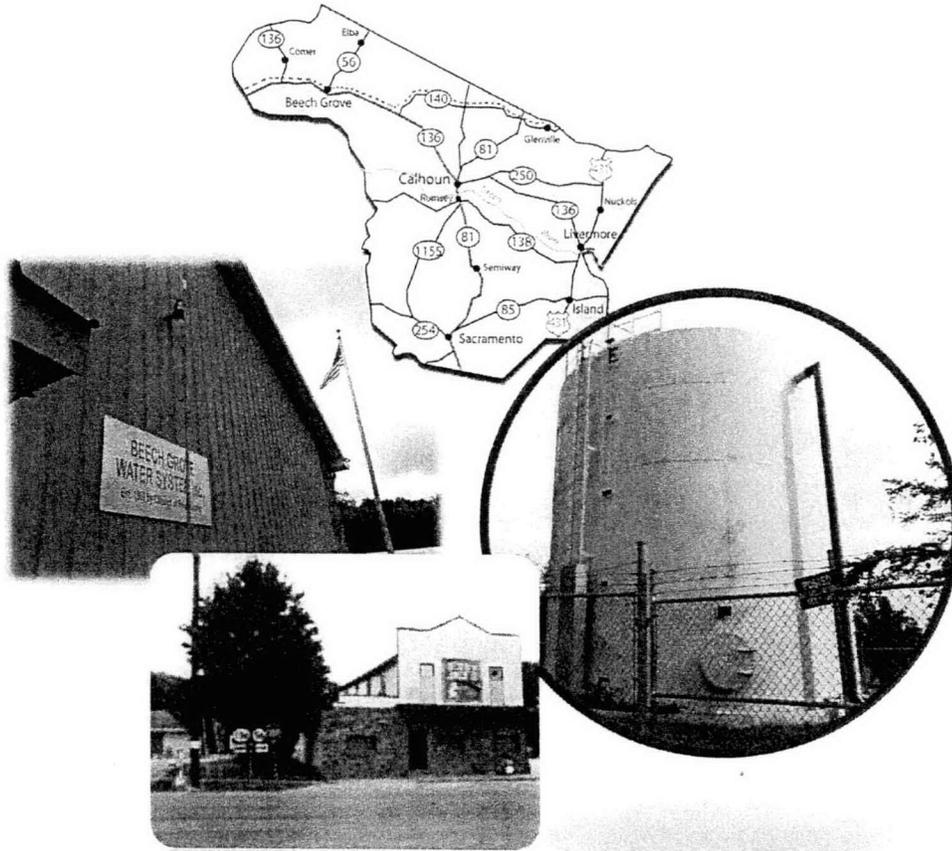
My commission expires: September 26, 2015

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BEECH GROVE WATER SYSTEM LG  
445 HWY 56 N  
CALHOUN, KY 42322



# PROPOSAL



Community of Beech Grove, Kentucky

## **EMCOR Construction Services**

Deron Hawkins, *Business Development Representative*

5128 W. 79<sup>th</sup> Street | Indianapolis, IN 46268

260.385.6550 | dhawkins@shambaugh.com

**DUE DATE: September 19, 2014**

## **SECTION 2. APPROACH TO PROJECT**

### **A. Project Summary**

Summarize the Scope of Services (design, financial, operations, maintenance, training, etc.) offered by your firm as a solution for this project including the added value of your firm's services. Please include a review of all Pricing, Energy Savings, Capital costs, and Operational costs determined for this project.

See Section 2, Item D. Technical and Financial Approach

### **B. Training Provisions**

Describe your firm's proposed approach to providing technical training for facility personnel. Indicate who will be trained and the type and frequency of training to be provided for the duration of the contract. Indicate how your firm will address any turnover of key facility personnel as it relates to project performance.

#### Standardized Training Programs

A training-needs assessment will be performed by EMCOR with your Facilities Staff through interviews and Management recommendations to find out the various strengths and needs of the Facilities Staff. Through this process, we will be able to arrange the proper training for the appropriate staff members.

Several factors are considered in determining the training needs for facilities staff: AMI (water meter technology) knowledge, Computer skills, Mechanical skills, Electrical skills, Management Ability, Controls Knowledge, Technical Background, Previous Training, and/or Schooling in particular Trades. In addition to the training needs assessment, we work with our partnering customers to identify a lead person to assume the role as the project leader and a training liaison with EMCOR.

EMCOR believes in helping our customers take advantage of the training opportunities offered continuously from National Organizations. American Water Works Association (AWWA), Association of Energy Engineers (AEE), Illinois Rural Water Association (IRWA) are a few of the nationally recognized organizations that offer training pertinent to the Water project we propose. We facilitate specialized training courses offered by these and other organizations that would benefit the customer most.

EMCOR also offers an on-line Knowledge Center that is a real time tool for Facility Managers. This information and help system is uniquely structured to address facilities as a whole – the people, the space, the equipment, and systems. Experienced staff is available to help with a wide spectrum of facilities operations assistance such as:

- Work Order Management
- Minor Retrofit

- Major Projects
- Mobile Services
- On-Site Technical Services
- Consulting Services
- Integrated Facility Services
- Facility and Equipment Benchmarking
- Equipment Performance Analysis
- Telecom Management
- Energy Management
- Monitoring and Control Services
- Audit and Survey Services

The third area of corporate quality assurance is our approach to standardized training to ensure a properly trained and efficient workforce. EMCOR places the highest value on each of our employees as their experience and expertise in the mechanical services industry gives our organization a competitive advantage in the marketplace. As a result, EMCOR has developed training and certification programs that blend behavior, experience, and formal training with regular performance reviews. These programs provide a means for career advancement and are the foundation for strengthening employee knowledge of mechanical and electrical systems, facilities operations, and technical skills.

#### *Facilities Edge™*

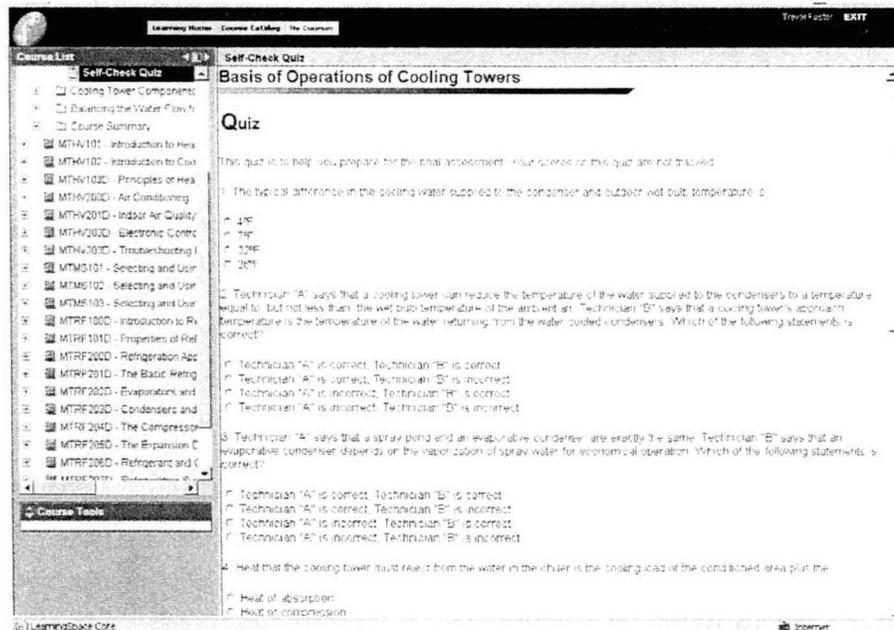
Within our facilities management technology platform, Facilities Edge™, EMCOR has developed a state-of-the-art IT infrastructure to deliver knowledge and provide self-training tools and an ongoing skills review to ensure our staff has the skills necessary to deliver according to each of our customer's service level requirements. EMCOR's Director of Corporate Training is dedicated to designing curriculum, course offerings, competency modeling, and support of each local management team in the strategies for training our personnel.

EMCOR accomplishes its training initiatives in many ways. We conduct training via a blend of Web-based training, on-the-job mentoring, and mechanical services industry specific training. Specialized training can be provided on or off site. We use a state-of-the-art IT Infrastructure to deliver knowledge, self-training tools, and perform ongoing skill reviews to ensure our staff have the skills to deliver our customer's service level requirements. Our development programs include:

- Distance Learning. Facilities Edge™ provides Internet access to training courses that range from generic off-the-shelf training materials to highly technical facilities and systems support. A sample page for EMCOR's internet training can be found below.
- Support Libraries. Various reference libraries can be accessed via Facilities Edge™.

- Competency Model Development. Facilities Edge™ competency evaluation program objectively determines the training required for each employee based on their level of competency in core and specialized categories.
- Recruitment Assistance. Facilities Edge™ provides hotlinks to key recruitment Websites for services and information relating to the facilities services industry, with assessments of each site's quality and usefulness.
- UA/STAR Program, The Mechanical Services Contractors Association (MSCA) has designated many EMCOR operating companies as STAR Contractors. The MSCA STAR Program allows EMCOR to attract the highest level and best-qualified field service technicians in our industry. As an MSCA Star Qualified Contractor, EMCOR sets the standard in our industry by maintaining outstanding business practices, providing an unsurpassed level of quality workmanship and customer service, and implements the highest level of safety standards in our industry.

Sample screen from EMCOR's Internet-based training:



### Service Management & Support Operations

EMCOR provides maintenance services responsiveness through its planned service agreements. We have been successful in providing on-site support and emergency services to businesses and institutions throughout the country for many years. Our operations centers deliver a comprehensive offering of mechanical services and preventative maintenance programs available for mechanical, electrical, fire protection, and control systems. We provide major equipment condition analysis and recommendations to extend the life of major capital equipment purchase. Some of the benefits you can expect from EMCOR include: Single point-

of-contact; Consistent pricing and reporting; Disciplined TQM service standards; Emergency Service Response; Resources for multi-facility, multi-discipline O&M plan.

### **C. Project Financing**

**Describe your firm's preferred approach to providing or arranging financing for this project. Describe the structure of the financing arrangement including projected interest rate, financing term, repayment schedule, equipment ownership, security interest required, the responsibilities/liabilities of each party, and any special terms and conditions that may be associated with the financing of this project. Describe how construction will be financed. Please provide at what interest rate this project will be financed.**

EMCOR works with our clients to investigate all grants and rebates and, when warranted, brings a grant writer to the table to support the customer in procuring additional funding.

EMCOR is experienced in working with your Financial Advisor (FA) or Bond Counsel in developing projects that make sense to your budget. We have worked with other clients on Capital Leasing agreements (that do not count toward your debt service), traditional bond issue, GO Bond issue, Build America Bonds, and re-structuring of existing debt service when rates have fallen and it warrants looking at re-financing existing debt in order to free up money for needed improvements.

It's also important to note that that EMCOR self performs its projects providing a significant savings opportunity for our customers on the initial cost of construction. Doing so allows you to get more for less and parlay these savings into possible phasing of projects over a period of time in order to meet budgetary constraints and limitations.

**See Cash Flow summary sheet in Section 2, Item D. Technical and Financial for interest rate and financing terms.**

**D. Technical and Financial Approach**

The following items are to be considered areas of concern for ESCOs to address when preparing a response to this request. The City reserves the right to accept or reject any ESCO's approach. In addition to the concerns listed here, ESCOs are invited to submit any additional measures designed to further enhance the City's savings in energy consumption and/or maintenance expenses, or improvements to the City facilities.

*In order to be considered a viable proposal by the City, each ESCO may respond to concerns listed but not limited to the below list:*

1. Mechanical Improvements
2. Electrical Improvements
3. Lighting Improvements
4. Water Savings
5. Miscellaneous Improvements As Found To Benefit The City In A Positive Manner
6. Measurement & Verification

EMCOR Construction Services have worked with the key members of the community's water staff to determine the most imminent needs. Once these needs were identified a feasibility presentation was presented to the community's water department to verify our findings and confirm the components we have put into our cash flow as essential to the Community of Beech Grove. The cash flow is and scope of work represents many months of detailed analysis by EMCOR Construction Services for the most detailed and precise response possible.

**The City will only accept Qualifications that have project pricing broken out as follows:**

- a. **Provide one (1) cash flow showing pricing, energy savings per year, operational savings and utility rebates for proposed project.**
- b. **Provide a detailed scope outlining each ECM to be provided for each facility and the benefits of each. This detail should include an open book pricing approach demonstration detailing each ECM.**

EMCOR Construction Services (ECS) has responded to the opportunity to submit an assessment of the water distribution system at the Community of Beech Grove and to provide Energy Conservation Measures (ECM's) and Opportunities for Improvement (OFI's) through a potential Guaranteed Savings Contract (GSC). This process began with multiples of conversations and site visits with facility personnel to identify the major points of concern related to the existing water distribution system, so that we could properly focus our assessment on the system and components most concerning to the owner. This assessment focuses on these priorities as derived through those conversations and site analysis. Additionally, items may be included that were gleaned from our walk through that we feel you as the owner may want to consider. At the least, we want to provide information that you may find pertinent to assist the community in their decision process. This section reveals our observations and findings throughout this process.

## Observations & Findings

### *The Community of Beech Grove, Kentucky*



## Water Distribution System

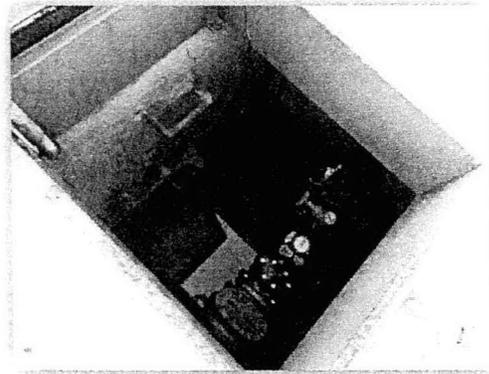
The Community of Beech Grove Water Distribution System currently operates off pressure from the water service supplied by The City of Henderson water department on the west end of the community. The supplied pressure enters the Community of Beech Grove water distribution system at approximately 120 PSI. Water is then distributed throughout the community. Water is also pumped to a ground level storage tower located near the highest point of the community. This water tower helps the water department manage and control the system pressure to various customers on the system. The system pressure varies from 30 to 60 PSI throughout the system. A secondary backup connection is located at the north east end of the community. This water service is supplied by West Daviess County Water.

In 1997 the Community of Beech Grove entered into an agreement to purchase treated water from The City of Henderson for the next 40 years in return for them to provide a 10" service main to the distribution system located throughout the Community of Beech Grove.

**Existing City of Henderson and West Daviess County Water Master Water Service Meters / Vault**

Water is supplied to the Community of Beech Grove via a 10" distribution line from The City of Henderson. This water is pumped from The City of Henderson to the Community of Beech Grove. The amount of water pumped from The City of Henderson water department is metered via a water meters located in a below ground vault at the west end of the communities distribution system. The City of Henderson owns the vault, valves, meters, etc. located on the Community of Beech Grove property. The Community of Beech Grove is billed monthly for water delivered to the community via the readings taken from the water meters located in the vault. The Community of Beech Grove has access to this vault and meters at all times. The City of Henderson has this meter located in the vault calibrated regularly to ensure accuracy.

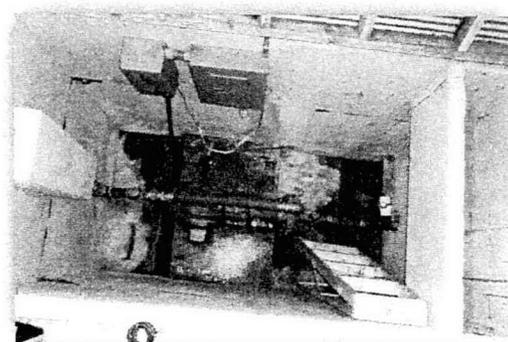
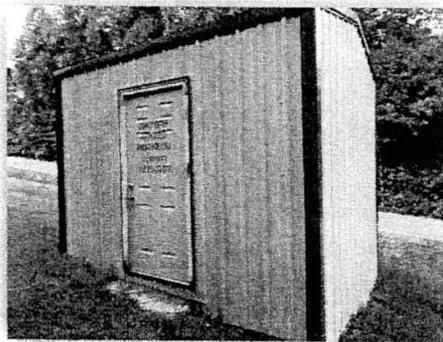
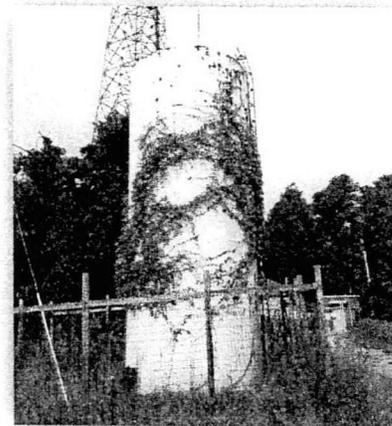
Water is also supplied to the Community of Beech Grove via a 6" distribution line from West Daviess County Water. This water is also metered via a water meter located in a below ground vault at the north east end of the communities distribution system. West Daviess County Water owns the vault, valves, meters, etc. This meter is located on private property. The Community of Beech Grove is billed monthly for water delivered to the community via the readings taken from the water meters located in the vault. The Community of Beech Grove has access to this vault and meters at all times.



**Existing Ground Level Water Tower and Pump Station**

The existing ground level water tower is located at the highest point and near the center of the Community of Beech Grove. A pump station is located approximately 600 yards down the hill. Water is supplied to this pump station via a 6" distribution line. The level of water in the ground level water tower is controlled by float level controls in order to turn the pump on when water is needed to be pumped to this tower. This ensures the Community of Beech Grove maintains enough water pressure and supply to serve the community.

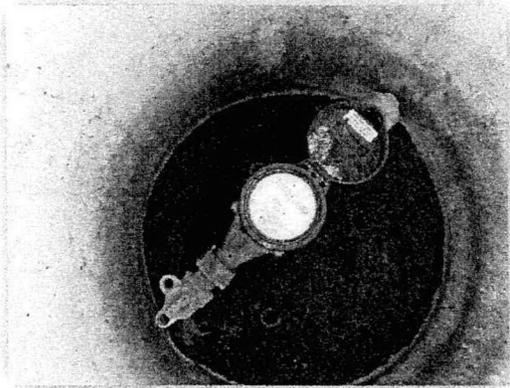
An existing ground level water tower near the newer water tower has been sold to the adjacent property owner. This water tank is currently abandoned and is no longer in service.



**Existing Water Meters**

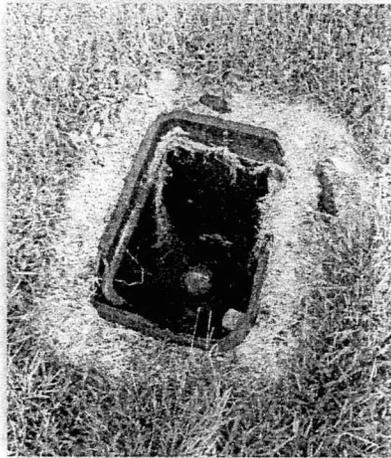
The existing water meters throughout the Community of Beech Grove are manual read water meters. The water meters vary from several manufactures including Rockwell, Master Meter, Elster and Zenner water meters. Over 1/3 of the water meters installed throughout the community are less than 2 years old and will be reused with slight modifications as part of this proposal. The majority of the meters are 5/8"x3/4" in size. The water meter reading system was designed with the intent that each month the water department personnel would travel the community by foot and truck to gather all the readings for each account. This information was collected and then taken to the water department office for calculating and billing.

EMCOR Construction Services provided the Community of Beech Grove new meters to replace 1% of their installed meter base. The existing meters were removed and sent off for meter accuracy testing. EMCOR Construction Services hired an independent 3<sup>rd</sup> party certified pressure testing company called Inspection Testing & Maintenance, Inc. to perform the meter accuracy testing. Six (6) meters (1% of installed base per AWWA standards) were tested and verified through an independent third party designated testing company. The meters tested 92% accurate on average.



**Existing Water Meter Boxes and Lids**

The existing water meters installed throughout the Community of Beech Grove are located in below ground water meter boxes. They mainly consist of three (3) types of water meter boxes, concrete, rectangular plastic and round plastic. The water department personnel have begun replacing damaged water meter pits as needed as time has allowed. Currently there are approximately seventy (70) water meter boxes and lids that need to be replaced.



### Community of Beech Grove - Technical Approach

EMCOR Construction Services has reviewed the Community of Beech Grove water distribution system per the RFP requested criteria. Through on-site visits, drawing review, conversations with the facilities staff and the gathering of data on the operational conditions on the water distribution system, we have gleaned, what we believe to be, a good understanding of what the short term and long term goals for the system should be. Throughout this process we've listened to the owners needs to assemble a scope of work that we believe will achieve the owner's expectations for these proposed projects. Additionally, through conversations regarding the long term goals for these facilities, we have remained diligent to provide solutions to real issues - in order to assist the owner in future planning needs. Looking forward at the "big picture" for the water distribution system – drove us to develop the following designs and scopes of work, while working within the Community of Beech Grove financial structure.

In all, the design solutions described below in this project will provide the greatest benefit to the Community of Beech Grove. The design is fluid enough to allow for finalization based upon the community's preferences and to allow the administration to build this project in a way that will accommodate their budget and maximize their return on investment.

### Community of Beech Grove: Water Distribution System Improvements

EMCOR Construction Services recognizes the need for water distribution system improvements at the Community of Beech Grove. It continues to be our intent to develop the best water distribution system solution to propose for this community. Many options, considerations and solutions are available in the market place and due diligence is required to generate proper assessment of the available options – in order to choose wisely. This is something EMCOR Construction Services has already completed. Thorough comparisons of the multitude of options were required. Decisions on; water meter replacements, zone water metering, meter pit replacements and the water distribution system designs and code related issues that may add cost to the project - to accommodate the differing system requirements, as well as first costs and long term system efficiencies, was required. In each solution, EMCOR Construction Services strives to provide a reasonable – common sense solution in order to provide the Community of Beech Grove an efficient water distribution system to manage and operate.

### Community of Beech Grove – Project Scopes of Work

<b>Project Scope Summary</b>	
1.1	Residential and Commercial Water Meter Replacement Project
1.2	New Zone Water Distribution Metering Project
1.3 - ALTERNATE 'A'	New Water Meter Box and Lid Replacement – (70 locations)

The following improvements are proposed as outlined in the Request for Proposal (RFP) and all labor and materials are priced using current dollars. Labor, material and equipment cost, reflected as part of this proposal, are based on present value. Final cost, to reflect escalations of labor, material and equipment, shall be adjusted at the time of contract award. The work areas are assumed to have safe, free and clear access. The available use of site facilities, including water, electricity and restroom facilities is also assumed. The owner has first right of refusal to all equipment, piping and electrical removed as a part of this project. It should be noted that the following work utilizes and does not include any required asbestos, lead paint or fuel oil tank and associated soil abatement:

## 1.0 Project Scope Summary

### 1.1. Residential and Commercial Water Meter Replacement Project

- 1.1.1. Provide a complete AMI (Advanced Meter Infrastructure) system for a total of 566 new and existing to be reused water meters.
- 1.1.2. Disconnect and remove all existing water meters older than 01/01/13, approximately 372 water meters. ((362) - 5/8"x3/4" water meters and (10) – 1" water meters). Meters will be photographed and stored at owner directed location for 3 months following completion of project. The Community of Beech Grove can then recycle the meters after that period of time.
- 1.1.3. Furnish and install approximately 372 AMI (Advanced Meter Infrastructure) multi-jet 5/8"x3/4" and 1" water meters throughout the Community of Beech Grove.
- 1.1.4. Reuse existing water meters which have been replaced by the Community of Beech Grove since 01/01/13, approximately 192 water meters.
- 1.1.5. Furnish and install approximately 192 water meter new reading encoder assemblies on the reused existing water meters in order to communicate with the new AMI system.
- 1.1.6. Furnish and install a new underground service vault and new main service 6" water meter downstream of the existing main service meter at the connection point to Henderson County Water. All associated valves and transition piping will be included for a complete workable system.
- 1.1.7. Furnish and install a new underground service vault and new main service 4" water meter downstream of the existing main service meter at the connection point to West Davies County Water. All associated valves and transition piping will be included for a complete workable system.
- 1.1.8. Furnish and install multiple enhanced repeaters throughout the Community of Beech Grove as required to operate the new AMI system.
- 1.1.9. Provide a handheld programming unit to the Community of Beech Grove for future maintenance and new service connections to the new AMI system.
- 1.1.10. Furnish and install a collector station with an antenna and all associated equipment on the existing Community of Beech Grove Water Department building / fire station antenna.
- 1.1.11. Furnish and install all software required to read the new AMI water meters.
- 1.1.12. Complete system programming and testing is included. Three (3) days of complete system training will be given once system installation is complete.
- 1.1.13. Daily support and a complete one year maintenance service agreement are included.
- 1.1.14. Manufacturer maintenance / software support is included for the first 10 years of this project.
- 1.1.15. Manufacturing warranties apply for all equipment provided as part of this project.

**1.2. New Zone Water Distribution Metering Project**

- 1.2.1. Furnish and install six (6) AMI zone water meters in various areas in the Community of Beech Grove in order to measure water flows in various zones.
- 1.2.2. Furnish and install isolation valves at each zone meter location.
- 1.2.3. Complete meter programming and testing is included.
- 1.2.4. Manufacturer maintenance / software support is included for the first 10 years of this project.
- 1.2.5. Manufacturing warranties apply for zone meters provided as part of this project.

**1.3. ALTERNATE 'A' - New Water Meter Box and Lid Replacement – (70 locations)**

- 1.3.1. Disconnect and Remove seventy (70) existing damaged water meter boxes and lids at various locations around the Community of Beech Grove. The Community of Beech Grove will determine which existing water meter boxes need replaced as part of this alternate.
- 1.3.2. Furnish and Install seventy (70) new water meter boxes with new metal lids at various locations around the Community of Beech Grove.

**Total Project Cost - \$489,710.00 (See Cash Flow Summary at the end of this section for detailed breakdown)**

**Total Project Cost with Alternate 'A' - \$539,810.00 (See Cash Flow Summary at the end of this section for detailed breakdown)**

**CASH FLOW SUMMARY SHEETS**

See attachments at end of this section.

**WATER SAVINGS CALCULATIONS - SPREADSHEET**

See attachment at end of this section.

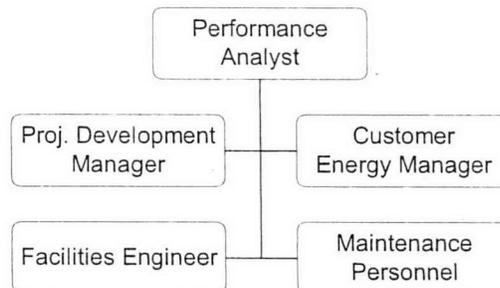
### **E. Measurement and Verification**

**Describe the methods you expect to use to compute baseline energy use for this project. Describe any modeling programs used by your firm to establish baseline consumption. Describe factors that would necessitate a baseline adjustment. Describe the methods you will use to adjust the guaranteed level of savings from any material changes that occur due to such factors as weather, occupancy, facility use changes, etc.**

#### *Guarantee Administration*

During our on-going support, training, and monitoring, EMCOR will continue to encourage the active participation of your staff to ensure the energy program's financial and functional well-being. Through seminars, reconciliation meetings and regular strategy sessions EMCOR will continue to be an active "team member" to your organization and staff, for further recommendations and adjustments. EMCOR professionals bring skills and insights that are designed to increase the efficiency and the associated productivity of the buildings and their occupants.

It is also at this phase that our performance management and guarantee management processes are implemented. For the term of the guarantee period, EMCOR dedicates a Performance Analyst to track, report, and reconcile the financial and physical performance of your facilities against the obligations set forth in the contractual documents.



#### *Communication*

The Performance Analyst works directly with the Facilities Engineer and the customers designated Energy Manager to optimize energy efficiency. The Performance Analyst will provide the Facilities Engineer the Energy Savings Reports throughout the guarantee period. The Facilities Engineer can present the reports periodically to show the cost avoidance savings.

#### *Measurement and Verification (M&V)*

There are many verification methods possible to verify the performance of energy conservation measures (ECMs) within your facility. Most of these entail pre-retrofit and post-retrofit monitoring. The selection of the most optimal and cost effective methodology for performance assurance will depend on the particular ECM and the needs of your organization. As part of the contract development process, EMCOR and the customer agree to the specific measurement and verification procedures on a case-by-case basis that will be used to sustain the

performance guarantee. There are two classifications of performance guarantees: Stipulated Savings Guarantees and Measured and Verified Savings Guarantees.

#### *Stipulated Savings Guarantee*

Stipulated savings are not measured or monitored as part of the savings guarantee. Energy savings are calculated using accepted engineering practices and are agreed upon by EMCOR and your organization. Operational savings from material or labor costs are derived from historical information and state approved engineering standards. These savings will be deemed achieved upon execution of the Performance Contract Agreement and such stipulated savings amounts will be used in the calculation of annual realized cost savings.

#### *Measured and Verified Savings Guarantee*

The International Performance Measurement & Verification Protocol (IPMVP) guidelines for measuring ECM performance are considered during the project development phase to develop an M&V plan that is suitable to satisfy project requirements. EMCOR performs all measurement and verification of energy savings in accordance with the IPMVP, and under these guidelines, there are four M&V options, each being incrementally more expensive to implement:

- A. Performance Verification, End-Use Retrofits - Measured Capacity, Stipulated Consumption Approach
- B. Savings Verification, End-Use Retrofits - Measured Capacity, Measured Consumption Approach
- C. Whole Building or Main-Meter Measurement Approach
- D. Calibrated Simulation Approach

#### *OPTION A*

Option A focuses on physical assessments of equipment changes to ensure that the installation meets a specification. Key performance factors (e.g., lighting wattage or chiller efficiency) are determined with spot or short-term measurements or are stipulated using manufacturer's data and engineering analysis. Operational factors (e.g., lighting operating hours or cooling ton-hours) are stipulated based on analysis, historical data, or spot/short-term measurements.

#### *OPTION B*

This option is used when long-term and/or continuous measurement of key performance factors and operational factors is desired over the term of the savings guarantee. Savings are determined after project completion by the use of metering equipment and/or monitoring devices at the equipment or system level.

#### *OPTION C*

After project completion, savings are determined at the "whole building" or facility level using current year and historical utility meter or sub-meter data. Savings are calculated by analysis of utility meter (or sub-meter) data using techniques from simple comparison to multivariate (hourly or monthly) regression analysis.

**OPTION D**

In Option D savings are determined through simulation of facility components and/or the whole facility. Savings are calculated by using energy simulation/modeling calibrated with hourly or monthly utility billing data and/or end-use metering.

Options A and B are best applied to a single measure or independent systems that have little interaction with other systems installed. Option C is best applied where several interactive measures are installed together or the whole building analysis is desired. Option D is the most complex approach that requires the calibrated simulation of facility components and/or the whole facility. Because each option is increasingly more expensive to implement, in most cases EMCOR recommends the use of Option A or Option C for optimal cost effectiveness.

It is necessary to be able to make comparisons of pre-retrofit and post-retrofit conditions under similar terms in order to accurately assess the effectiveness of a performance contract. To do this, energy Base Lines are established to document pre-retrofit conditions and serve as the basis for post-retrofit analysis. For the purpose of this RFP submission, "Baseline" is defined as a specific period of time and any data used for, or resulting from, the analysis of that period. The following methodology will be used to calculate unit savings:

- The program applies baseline data for the specified "tuning period" to the regression calculation detailed in this RFP submission. The program attempts to establish a relationship between utility consumption or demand and the independent variable(s) (e.g. HDD, CDD, User defined1, etc.). Coefficient(s) of consumption per unit will be tuned and documented for variables where such a relationship can be established.
- During the post retrofit period the pre-retrofit coefficients and the post-retrofit variable data are applied to the regression calculation to adjust for differences in conditions. This projects an adjusted baseline which represents what would have been consumed had no facility improvement measures been implemented. The units saved are equal to this adjusted baseline minus the actual consumption for the billing period.

*Regression Analysis Calculation*

The regression analysis methodology is capable of making adjustments for changes in base load, heating degree-days, cooling degree-days, and up to three other variables. The inclusion of any variables will be mutually agreed upon by EMCOR and the Customer and supported by regression analysis documentation. In addition, some consumption may be allocated to tuning period modifications if any are defined. The inputs and outputs to the equation vary depending on whether the equation is being applied to the pre-retrofit tuning period or the post-retrofit tracking period. Once the coefficients  $B$ ,  $D_H$ ,  $D_C$ ,  $D_1$ ,  $D_2$ ,  $D_3$  and the base temperatures  $T_{B_H}$ ,  $T_{B_C}$  have been obtained by regression, they remain fixed and are used to derive adjusted meter consumption for all future time periods.

$$E = B \cdot \Delta t + D_H \cdot HDD(T_{B_H}) + D_C \cdot CDD(T_{B_C}) + D_1 \cdot U_1 + D_2 \cdot U_2 + D_3 \cdot U_3$$

where:

- $E$  = Adjusted Base Line Consumption throughput through meter. During the post retrofit period this value represents what the consumption would have been under current conditions (weather, etc.) had no Facility Improvement Measures (FIMs) been implemented.

- $B$  = Base load consumption per unit of time (Utility Units/day), that part of the meter consumption that is independent of (cannot be correlated to) any of the independent variables, including the degree-days. This consumption will be present no matter what the weather conditions or other independent variables are. This fixed value, dependent only on the number of days in the period being evaluated, is determined when defining the Base Line.
- $\Delta t$  = Time interval (days) in analysis period.
- $D_H, D_C$  = Coefficients for Heating and Cooling Degree-days (Utility units/deg-day). These fixed values, which are determined when defining the Base Line, define the sensitivity of consumption to changes in weather.
- $HDD, CDD$  = Heating and Cooling degree-days ( $^{\circ}F$ -day or  $^{\circ}C$ -day) for the period being analyzed.
- $TB_H, TB_C$  = Heating and Cooling degree-day base (or balance point) temperatures ( $^{\circ}F$  or  $^{\circ}C$ ) upon which the HDD and CDD values are derived. These balance point temperatures represent the outdoor air temperature at which utility consumption or demand begins to react to any further change in outdoor temperature. When outdoor air temperature is equal to balance point temperature heat loss = heat gain.
- $DI$  = Coefficients for user defined variable  $I$  ( $I=1,2,3$  for any one meter). These coefficients (or relationships) are determined when defining the Base Line.
- $UI$  = Value of independent user variable  $I$  ( $I=1,2,3$  for any one meter) for the period being analyzed.

#### *Regression Analysis Calculation for Demand*

Demand is treated differently than consumption since demand is an instantaneous value and consumption is a value totaled over time. As can be seen in the following calculation, demand is not dependent on the number of days in the billing period. Rather, demand is a function of a fixed base load component and a variable component that is sensitive to changes in the independent variables. Instead of cumulative degree-days, the regression calculation for demand uses the average temperature difference between the balance point temperature and the average daily temperature. The average temperature difference is calculated by dividing the total DD in the billing period by the # of days in the period as shown in the following equation.. The equation shows kW as the demand unit but any appropriate demand unit may be used.

$$kW_{base} = \text{Offset\_Coefficient} + DD\_Coefficient \times \left( \frac{DD_{per}}{\#Days_{per}} \right)$$

Where:

- $kW_{base}$  = kW for the baseline scenario for the current bill period (per)
- **Offset\_Coefficient** = the demand value that is not associated to weather
- **DD\_Coefficient** = relationship of demand to weather (e.g. kW/DD)
- **DD(per)** = degree days for the current bill period (heating or cooling)
- **#Days(per)** = number of days in the current bill period

#### *Process for Adjusting the Base Line*

The Customer agrees to notify EMCOR of any actual or intended change, whether before or during the Guarantee Term, in the use of any facility to which this Baseline applies or of any other condition arising before or during the Guarantee Term, that reasonably could be expected to change the amount of energy used at any facility to which this Baseline applies. Such a change or condition would include, but is not limited to: changes in the primary use of any facility; changes to the hours of operation of any facility; changes or modifications to the Equipment or Services provided under this Performance Contract; changes in utility suppliers, method of utility billing, or method of utility purchasing; improper maintenance of the Equipment or of any related equipment other than by EMCOR; changes to the Equipment or to any facility required by changes to local building codes; or additions or deletions of energy-consuming equipment at any facility. Such a change or condition need not be identified in the Base Line or Benchmark in order for EMCOR to make an adjustment.

Upon receipt of such notice, or if EMCOR independently learns of any such change or condition, EMCOR will calculate and send to the Customer a notice of adjustment to the Base Line or Benchmark to reflect the impact of such change or condition, and the adjustment will become effective as of the date that the change or condition first arose.

The various obligations and commitments undertaken by EMCOR in this Performance Contract are based in part on the assumption that Customer's Facilities are and will remain in full compliance with all applicable building codes, all equipment of the Customer will be maintained in proper operating condition, and all equipment of the Customer will be operated in accordance with the terms of this Agreement. The services performed and Equipment provided by EMCOR under this Performance Contract are intended to operate and be used as a total package to achieve optimum energy efficiency for Customer under this Performance Contract. In the event Customer disables, disconnects, or otherwise ceases to use or overrides any or all service(s) or Equipment provided by EMCOR under this Performance Contract, EMCOR is entitled to make such adjustments as may be necessary to the calculations used to determine energy savings in order to reflect the effects of such action by Customer.

#### *Determining Savings During the Term of the Performance Contract*

The regression calculations described in this section are what is used by EMCOR to determine the Energy Savings during the term of the Performance guarantee. Once the Baseline is determined, the savings generated during the Performance Guarantee are reported to the customer at the agreed upon time.

Upon selection, EMCOR will work with the City to right-size the M&V services based upon the criteria and number of buildings required. A license of Metrix 4 along with basic training of the Metrix Utility Accounting Software will be provided to demonstrate our willingness to partner with the Community of Beech Grove and build an understanding, awareness, and consensus in energy calculations and the overall verification process.

**F. Energy and Cost Savings**

Summarize procedures, formulas and methodologies including any special metering or equipment your firm will use to measure and calculate energy savings for this project. Indicate how your firm identifies, documents, and measures operational cost savings opportunities. Describe your firm's proposed approach to the treatment of savings achieved during construction and how those savings will be documented and verified. Describe your firm's history with the use of the International Measurement and Verification Protocol method of verification.

*Performance Guarantee / Energy Calculations***Energy Savings**

Information provided by the City was used to establish existing building operating conditions and references prior to work being performed on the building or system, and is also known as baseline data. Energy Conservation Measures (ECMs) or work scopes are established for each building, and energy savings calculations are determined for each ECM. Energy savings calculations are based on a combination of existing/new equipment specifications, historical energy bill/weather data and measured/design operating conditions. For instance the utility bill information provided by the City was used to calculate energy savings. All energy savings calculations are reviewed and agreed upon with the Owner prior to contract award. For example, electric motor savings generated from reduced operating schedules of equipment are based on motor nameplate data and scheduled hours of operation as shown below:

$$\text{Annual Electric Use Savings} = \text{Kilowatt-Hours} = \text{Motor Horsepower} \times .746 \text{ Kilowatt-hour} / \text{Horsepower} \times (\text{Baseline Annual Runtime Hours} - \text{New Annual Runtime Hours}) / \text{Motor Efficiency}$$
$$\text{Annual Electric Cost Savings} = \$/\text{Year} = \text{Annual Electric Use Savings} \times \text{Electric Rate} = \text{Kilowatt-Hours} \times \$/\text{Kilowatt-Hour}$$
**Operational Savings**

Operational savings and capital avoidance exist when an improvement implemented under a guaranteed savings contract reduces future repair or replacement labor and / or material monies that would have otherwise been expended if the improvement was not implemented. This includes reducing / eliminating existing preventative maintenance or outsourced agreements and savings derived from life cycle costing of a project's useful life. EMCOR derives operational savings and capital avoidance from historical information provided by the CLIENT and accepted engineering standards, such as RS Means Construction Cost Data, then adds this amount to the energy savings to arrive at the total savings amount in accordance with the Kentucky General Assembly HB-639 (KRS 45A.352-9-a). For a simple example of capital avoidance a project is constructed with a \$1,500,000.00 total cost and a 25-year life cycle. The guaranteed savings contract term is 15 years in length. The state-allowed annual capital avoidance is 15% of the 25 years or 50% of the value of the project (\$750,000.00) and then divided by the contract term or 15 years. Therefore, the annual avoided cost of capital savings is \$50,000.00 per year by performing the project plus any other energy and operational savings.

Operational savings are considered stipulated savings, which are not measured or monitored as part of the savings guarantee. These savings will be deemed achieved upon execution of the contract.

### **Performance Guarantee Agreement**

Although there are many measurement and verification (M&V) Support Service methods possible to verify the performance of improvements within a facility, most of these entail pre-retrofit and post-retrofit monitoring and annual reporting over the term of the contract. The selection of the optimal or cost-effective methodology for performance assurance depends on the particular improvement and the needs of each organization. As part of the contract development process, EMCOR and the CLIENT agree to the specific measurement and verification procedures on a case-by-case basis that will be used to sustain the performance guarantee over the term of the contract.

The International Performance Measurement & Verification Protocol (IPMVP) guidelines for measuring an improvement's performance are considered to develop an M&V plan that is suitable to satisfy project requirements. EMCOR performs all measurement and verification of energy savings in accordance with the IPMVP, and under these guidelines, there are four acceptable M&V options, or approaches, as described below:

- A. End-Use Retrofit Isolation - Stipulated Consumption Approach
- B. End-Use Retrofit Isolation - Measured Parameter Approach
- C. Whole Building or Main-Meter Measurement Approach
- D. Calibrated Energy Simulation or Modeling Approach

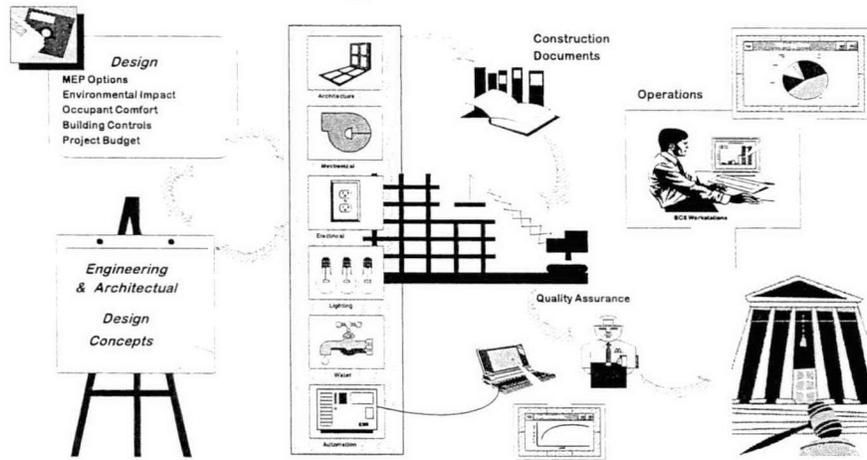
These options involve many considerations, one of which is the definition of the measurement boundary (e.g., an individual building or an entire campus). If the retrofit project calls for determining savings at the facility level, Option C or D may be favored. However, if only the performance of an individual improvement itself is of concern, a retrofit-isolation technique may be more suitable (Option A, B or D). The optimal, cost-effective methodology for performance assurance associated with the scope of work in this proposal would be to utilize M&V option A with language similar to the following:

- The CLIENT and PROVIDER agree that the savings shown in this proposal are Stipulated Savings and will be deemed to be achieved upon execution of this Agreement.
- The Annual Stipulated Savings shall be applied to each Annual Period following the Construction Period of the Guarantee Term, and shall not be measured or monitored during the Guarantee Term.
- Costs used to determine the value of the Stipulated Savings are based on either actual cost provided by the CLIENT or industry engineering standards, and will be held constant over the Guarantee Term.

**G. Construction Management and Self Performance**

Describe how your firm would work with current City Engineering Resources, building management and maintenance personnel in order to coordinate construction and avoid conflicts with the City's operation and use in areas of improvement. Demonstrate how your firm will perform the installation. For each ECM please in detail describe whether your firm will perform the installation or will utilize a subcontractor for this purpose. If utilizing a Subcontractor please Identify Contractor to be used and percentage of utilization.

*Engineering and Cost Estimating*



EMCOR Construction Services is a strong member of the Design and Build Institute of America (DBIA). Our system design processes follow the Design and Build method of installation to allow for flexibility in scope changes. The design process also saves on comprehensive design costs. Our design process by nature eliminates costly redesign, unmonitored design, and expensive change orders that are inherent with the traditional Plan & Spec process. During the design, the project team compares technical alternatives and budgets prior to completing final plans, which saves both time and engineering costs to the customer.

*Submittals/Documentation*

EMCOR Construction Services shall obtain approval of all drawings regarding wiring and installation methods from authorities having jurisdiction, and shall obtain all necessary permits secure approvals and inspection of the work and pay all fees in connection with these.

EMCOR Construction Services shall also provide the customer with marked-up control and construction "As Built" drawings. These drawings shall note the location of sensors or controlled devices located away from a

**Our design process by nature eliminates costly redesign, unmonitored design, and expensive change orders that are inherent with the traditional Plan & Spec process.**

mechanical room or a cluster of other points. Floor and column lines shall reference their locations.

Upon completion of the project, EMCOR Construction Services will provide the customer with final, unconditional certificates of approval on all work performed, and one set of as-built system drawings per each system contained in the scope of work as well as AutoCad drawing files. Product data will also be provided for any and all devices that were used as a part of the final working system, including electronic datasheet submittals.

#### *Equipment Procurement*

EMCOR Construction Services will specify and procure the major equipment and other associated equipment needed to complete the project upon acceptance by the customer.

#### *Equipment Order Management*

EMCOR will provide the order management and logistics support for procuring project related equipment. This includes the purchasing, expediting-palletization, and organized system ordering (bag, tag, sequencing ID delivery system). Our Trueline™ accounting and job cost system is an integrated project management and accounting software package used by EMCOR to track costs during procurement. All costs entered into the system from vendor invoices, become the source document by which the system generated purchase order is paid. The project managers have live access to monitor and manage construction spending and make educated completion forecasts. All accounting disciplines are also live in the system to perform payroll, accounts payable and receivable functions.

#### *Code Requirements*

EMCOR Construction Services is experienced with multiple trade disciplines and is versed in mechanical, electrical, and life safety code requirements. EMCOR Construction Services takes responsibility for securing all permits or licenses necessary for the installation of the proposed integration projects, and shall obtain:

1. All necessary mechanical, life safety, and electrical permits, approvals and inspections of the work, and pay all fees associated with these.
2. Approval of all drawings regarding wiring and the installation methods from the authorities having jurisdiction.

Furthermore, all work by EMCOR Construction Services shall be performed in a neat and workmanlike manner and shall comply with local and national codes governing the installation.

#### *Planning & Project Management*

The EMCOR Construction Services project management approach involves several innovative aspects and unique systems and procedures that other contractors are still working to develop. The following is a brief of our basic steps of planning, implementation, and control that will be

tailored to your project. Our steps inherently address the cost, scheduling, safety, and quality issues that are so crucial to any project.

#### *Project Manager/Project Engineer*

The project manager for this project will be Bob West under the direction of Engineering Manager, Brian Walker, CEM.

#### *Planning*

During the planning or pre-construction phase, we will utilize our experience, productivity, engineering knowledge, and job cost records to develop the most accurate design estimate, work plan, and schedule. In this phase, we will perform these nine basic steps:

1. Assist with value engineering of the process, utility, mechanical, electrical/instrumentation, Controls, and structural, utilizing "in-house" Design-Build engineers in conjunction with current City Engineering staff. Our efforts would also be directed toward developing detailed cost budget estimates and engineering construction schedules.
2. Provide constructability reviews of the above disciplines, such as pipe routing, hangers, panels, duct banks, typical hook-ups, connection details, such as around vessels, tanks and pumps, defining controls, instrumentation, Schedule various scenarios as engineering progresses to determine the best mix of craftsmen and workload required to meet the budgets discussed.
3. Perform interference checks so that any prefabrication can be accelerated.
4. Resolve conflicts between the different trades' disciplines with respect to the construction.
5. Provide detailed scheduling and sequence of activities input to your overall master schedule so your project can be completed on schedule or sooner.
6. Researching and developing procurement plans for all the various equipment and materials.
7. Advanced field surveys to coordinate actual on-site field restrictions and/or cost saving opportunities.
8. Detailed cost estimating with historical local labor factors to insure the budget is not exceeded.
9. Finalization of area and site resources plan.

Over the years, EMCOR Construction Services has developed a Project Management philosophy that recognizes the planning and organization required to fulfill our customers' expectations on every project. Recognizing the variety and complexity of the projects we complete, an array of manual and computerized project management programs and procedures are utilized. Project Managers have the skills and the resources to schedule projects, varying from the simple to the complex. One of the key ingredients of Project Management is the communication of the plan to the field forces, the subcontractors, and most importantly, to the Owner. The Project Management software allows for flexible and clear reporting of the project plan and its progress. The graphic representation of the project plan is the most effective

method of communication between the contractor and the Owner. Most importantly, we use a two-week short interval scheduling system with our field forces that brings a "committed reality" to the schedule. EMCOR Construction Services has the capabilities to produce a visual representation of the project schedule in a variety of formats and sizes to fit the needs of the project; and takes a proactive approach to the planning process by utilizing appropriate scheduling packages for the customer's unique project. Project schedules are organized and maintained in order to complete projects on time and under budget. However, EMCOR Construction Services maintains the highest level of flexibility required to meet the owner's needs. Project scheduling provides an improved understanding of all the effects that changes and additions may have on a project. This level of awareness allows EMCOR Construction Services to be even more flexible in the execution of a project when alterations may become necessary.

#### *Critical Path Method (CPM)*

The majority of project schedules created by EMCOR Construction Services utilize the CPM method for creating the project plan. The CPM scheduling system was developed in the 1950's by the DuPont Corporation. CPM is a mathematical model that calculates the total duration of a project based upon individual task durations and dependencies, and identifies which tasks are critical. This model can be used to identify and predict the consequences of changes and alterations to a project. CPM can also help identify conflicts in activities and resource allocation. CPM is the fundamental scheduling method used in project management today.

#### *Gantt Charts*

The Gantt chart is a visual representation of project activities across a time scale (once referred to as a bar chart). The Gantt graphic presentation of a project plan is the most widely used method of communication a schedule today. EMCOR Construction Services utilizes the inherent advantages found in CPM scheduling when creating and monitoring a project plan, as well as the presentation advantages of graphic Gantt charts when communicating the plan.

#### *Project Implementation*

Following a successful planning phase, the installation of systems will already be "jump-started." Here again, there are several unique and different aspects of our plan that we believe are mandatory for project success, there are two absolutely critical kick-off meetings that we would implement at the beginning of this phase.

#### *First*

A 1-day meeting with EMCOR Construction Services, customer team, and critical team members to analyze recoverable lost time opportunities on this particular project with the goal of improving the material handling and other crucial labor segments of the job. The goal would be an overall 0-15% productivity savings for the installation work with innovative material handling and preplanning methods.

#### *Second*

A Project Team pre-job meeting with our labor trades to gain commitment to productivity, quality, safety, and harmony expectations. The EMCOR Construction Services Team would employ the following steps that have been developed and time-tested by our Project Managers.

1. Secure final approvals, permits.
2. Establish onsite security measures and procedures
3. Pre-job meeting with all labor trades
4. Purchasing, expediting-palletization, organized system ordering (bag, tag, sequencing ID delivery system)
5. Weekly coordination meetings
6. Daily job inspections
7. Weekly safety meetings
8. Weekly procurement submittals
9. Drug testing
10. Weekly construction and project review meetings (internal)
11. Weekly construction and project review meetings with customer
12. Continue value engineering and cost reduction method analysis
13. Weekly general foreman and labor management short interval planning meeting
14. Weekly craft coordination meetings
15. Start-up and testing planning and implementation
16. Start-up assistance
17. Final project data and documentation assembly
18. Owner walk-through and acceptance

*Project Team Coordination (Contractors, Integrators, Engineers & Architects)*

Weekly progress meetings are held to inform the customer of project progress and to coordinate other Integrators, contractors, and Engineer/Architect interaction. Plans, schedules, and solutions are reviewed to ensure that whole team coordination is working effectively to realize the desired results. Ongoing communications with the customer are vitally important to avoid potential problems and scheduling issues that could result in system disruption, especially when other projects are also underway. Identifying site issues in advance, rescheduling, and contingency plans are ways in which our Project Management helps minimize and manage disruption inherent with any construction. The following is an example project status report:

*Example Kickoff Meeting Minutes*

**Progress Report #1, October 4, 2014**

Attendees: Deron Hawkins, EMCOR Construction Services  
Ron Cassidy, EMCOR Construction Services  
Mathew Klok, EMCOR Construction Services Mechanical  
Bill Cavanaugh, EMCOR Construction Services Controls  
Michael Wahl, City Representative

1. A listing of EMCOR Construction Services and Subcontractor contact information was distributed.
2. The project timeline was distributed and discussed.
3. The project waste dumpster will be located behind the east parking lot entrance.

**APPROACH TO PROJECT**

4. The mechanical scopes of work were discussed as well as lead times for mechanical equipment.
5. Major HVAC equipment will be replaced during the shutdown that starts June 1.
6. All mechanical work will be concluded prior to April 26.
7. Mechanical work scheduled to take place before equipment arrives includes: Chiller pad construction, old boiler removal, and installation of pump pads and associated piping in mechanical room.
8. The asbestos plan was reviewed and it was determined that this project would not be disturbing those areas still containing asbestos.
9. The roofing project has been removed from this projects scope of work. It will be included in the list of future project.

**Contractor & Equipment Procurement**

*Qualified Provider Involvement*

EMCOR Construction Services fulfills a unique and expanded role in providing total facility services for our customers. We know of no other firm with the resources and geographical coverage that offers true flexibility in product selection and single-source, self-performed, facility improvements. Everything from a thorough needs assessment to engineering, to project management; and full service can be performed “in-house” by EMCOR Construction Services manpower. General construction is performed by our partners to ensure the success of the total project.

EMCOR Construction Services Self Performed Work	Subcontractor Performed Work
<p><b>EMCOR Construction Services will SELF-Perform the associated work on this project as listed below:</b></p> <ul style="list-style-type: none"> <li>• Mechanical System Engineering</li> <li>• Electrical System Engineering</li> <li>• Plumbing System Engineering</li> <li>• Mechanical System Installation</li> <li>• Electrical System Installation</li> <li>• Plumbing System Installation</li> <li>• Water and Wastewater</li> <li>• Energy Management System Design</li> <li>• Energy Management System Installation</li> <li>• Project Management</li> <li>• Commissioning</li> <li>• Startup</li> <li>• Warranty</li> <li>• Measurement &amp; Verification</li> <li>• Underground piping analysis and leak detection services</li> </ul>	<p><b>EMCOR Construction Services will perform ALL associated work on this project except the following subcontracts:</b></p> <ul style="list-style-type: none"> <li>• Asbestos and Lead Paint Abatement (By others if required)</li> <li>• Civil Engineering</li> </ul>

*Preferred Project Team*

With the EMCOR Construction Services design process, we design and build the project becoming an integral part of the implementation team of Architects, Engineers, and other project construction managers that comprise our overall implementation team. The result is that you are more likely to get product choice, who you are comfortable working with, and when you want the project completed.

#### *Equipment Procurement*

EMCOR Construction Services will specify and procure the major equipment and other associated equipment needed to complete the project upon acceptance by the customer. We will be able to utilize the strongest buying procurement power in the industry today to optimize a lower pricing point.

#### *Equipment Order Management*

EMCOR will provide the order management and logistics support for procuring project related equipment. This includes the purchasing, expediting-palletization, and organized system ordering (tab, tag, sequencing ID delivery system). Our Trueline™ accounting and job cost system is an integrated project management and accounting software packaged used by EMCOR to track costs during procurement. All costs entered into the system from vendor invoices become the source document by which the system generated purchase order is paid. The project managers have live access to monitor and manage construction spending and make educated completion forecasts. All accounting disciplines are also live in the system to perform payroll, accounts payable and receivable functions.

#### *Code Requirement*

EMCOR Construction Services is experienced with multiple trade disciplines and is versed in mechanical, electrical, and life safety code requirements. EMCOR Construction Services takes responsibility for securing all permits or licenses necessary for the installation of the proposed integration projects, and shall obtain:

1. All necessary mechanical, life safety, and electrical permits, approvals and inspections of the work, and pay all fees associated with these.
2. Approval of all drawings regarding wiring and the installation methods from the authorities having jurisdiction.

Furthermore, all work by EMCOR Construction Services shall be performed in a neat and workmanlike manner and shall comply with local and national codes governing installation.

#### **H. Approach to Equipment Maintenance**

**Describe any major changes in operations or maintenance for this project that your company anticipates. Include a description of the types of maintenance services that may be proposed for this project. Address how you would approach the role of the City's personnel in performing maintenance on the new and existing equipment. Discuss the relationship of maintenance services to the savings guarantee and what impact termination of maintenance prior to the end of the contract term would have on the savings guarantee. *No Mandatory Service Contracts will be accepted by the City.***

#### *Service Management & Support Operations*

EMCOR provides maintenance services responsiveness through its planned service agreements. We have been successful in providing on-site support and emergency services to businesses and institutions throughout the country for many years. Our operations centers deliver a comprehensive offering of mechanical services and preventative maintenance

programs available for mechanical, electrical, fire protection, and control systems. We provide major equipment condition analysis and recommendations to extend the life of major capital equipment purchase. Some of the benefits you can expect from EMCOR include: Single point-of-contact; Consistent pricing and reporting; Disciplined TQM service standards; Emergency Service Response; Resources for multi-facility, multi-discipline O&M plan.

#### *Scheduled Preventative Maintenance*

EMCOR can develop site-specific scheduled maintenance that adheres to the equipment manufacturers and customer's requirements. As is the case with most facilities, great care is taken to work around the occupants to minimize real or perceived interruption to operation. EMCOR maintains Inspection Reports (see appendix) of the equipment being maintained. The purpose of our maintenance programs is to ensure that the equipment is being taken care of and that all contractual requirements are met. We develop a checklist for each major component of the scope of work. Our Service Manager maintains a current master copy of all checklists in his office. Managers, supervisors, and team leaders are provided copies of Quality Control Inspection Checklists in order to self-inspect and monitor performance and work in progress.

#### *Extended Service Options for Premium and Prime Coverage*

- ☛ On-site repair services will be provided during EMCOR's normal business hours. Emergency repairs are available for all customers on an event type basis. The following services are additional coverage where such coverage is necessary full time:
- ☛ 24-5 Extended Service—EMCOR will provide on-site response 24 hours a day, 5 days a week (*Monday thru Friday, except EMCOR holidays*)
- ☛ 24-7 Extended Service—EMCOR will provide on-site response 24 hours a day, 7 days a week (*including holidays*)

#### *Conforming Maintenance*

EMCOR can install mandatory safety and engineering upgrades as required by the customer and as required by the equipment manufacturers. Any safety or conforming upgrades can be identified during the onsite planning reviews with the customer's facility personnel as required. Once these upgrades have been identified and installed, EMCOR will provide verification to the customer that these have been accomplished during a project closeout process.

#### *Initial Equipment Inspection*

EMCOR usually inspects the Covered Equipment within 45 days of the date the Maintenance Services Agreement begins or as seasonal or operational conditions permit. EMCOR will advise the customer if EMCOR finds any Covered Equipment not in working order or in need of repair. With the customer's approval, EMCOR will perform the work necessary to put the Covered Equipment in proper working condition. To the extent that Covered Equipment is not subject to warranty or other obligation of EMCOR for its repair, EMCOR and the customer will do this work at EMCOR's standard fixed fee for parts and labor that is agreed to. If the customer does not want EMCOR to do the work identified by EMCOR, or if the customer does not have the work done, the Covered Equipment will be removed from the list of Covered Equipment. This flexibility gives the customer options for performing the work or outsourcing to another vendor of the customer's own choosing.

### *Warranties*

EMCOR warrants that its services shall be provided in a good and workmanlike manner and that parts repaired or replaced by EMCOR will be free from defects in workmanship, design, and material until the end of the Maintenance Agreement Schedule or for one year, whichever is earlier. EMCOR's sole obligation shall be to repair or to replace defective parts or to re-perform defective services.

### **I. No Change Order Guarantee**

The qualified provider must include a statement in their Qualifications and subsequent contract that clarifies that the provider takes sole responsibility for all work required to properly implement the scope of work, unless a portion of the required work is specifically excluded from their Qualifications. The provider shall cover all costs associated with work omitted from their Qualifications and/or contract that are required for complete and properly functioning systems including all unforeseen work. The only exception to this requirement is in the instance where additional scope is requested by the City. Qualifications excluding any required work may be rejected and Qualifications that do not include a “no change order guarantee” adhering to the aforementioned requirements shall be rejected without further consideration.

### *No Change Orders – Guaranteed Maximum Price*

EMCOR Construction Services will provide a “No Change Order Guarantee” and a “Guaranteed Maximum Price” for the scopes of work provided in this proposal. This is customary and is our normal business policy. We strongly believe in the importance of this. It allows for a constant pricing with no surprises in the form of change orders. Unless changes are made by the Owner, The Community of Beech Grove can expect no change orders associated with this work.

### **J. Utilization of Local Skilled Trades**

**Identify your approach to utilizing local skilled trades. Describe your approach, what trades will be utilized, and your selection process for these subcontractors.**

As a Union Signatory provider we work with the local unions to provide the most qualified local skilled trades members as our employees for your project. EMCOR takes pride in knowing our staff has been trained and experienced to the highest degree to provide quality projects. We are open to include local contractors and craftsperson's as the City may deem fit. EMCOR will **collaborate with your “engineer of record”** and the Community of Beech Grove in designing the water and waste water improvements that meet the technical and budgetary requirements for the Community of Beech Grove. It is refreshing to know we will be employing a skilled Union force that also resides in your neighborhood.

EMCOR Construction Services self-performs the majority of the work for any given GSC project. This ensures optimum quality, controlled installation, and schedule and performance assurance to guarantee energy and water savings on your project. However, there are disciplines that we do not self-perform for which we will procure subcontractor pricing. Our standard practice is to solicit multiple bids from preferred contractors in the Community of Beech Grove area first, then local contractors and finally contractors who have performed well on our previous projects. We

will receive subcontractor pricing for sheet metal, insulation, or general construction. We are open to include local contractors and craftspeople's as the City may deem fit.

EMCOR is vendor neutral and therefore we install equipment from a wide range of manufacturer's. We utilize a consultative approach to equipment selection deferring first to the owner's preference of equipment. However, we will procure pricing from multiple equipment manufacturers as long as their equipment meets the designed specifications. All major equipment will be reviewed with the Community of Beech Grove. Several factors will be discussed including application to the design intent, the manufacturer's history of service after the sale and of course, price.

EMCOR will always leverage our National Purchasing Group headquartered in our Fort Wayne, Indiana office to bundle purchases with other EMCOR companies across the nation to provide the most cost effective equipment solutions possible for the Community of Beech Grove.

EMCOR will provide the order management and logistics support for procuring project related equipment. This includes the purchasing, expediting-palletization, and organized system ordering (tab, tag, sequencing ID delivery system). Our Trueline™ accounting and job cost system is an integrated project management and accounting software packaged used by EMCOR to track costs during procurement. All costs entered into the system from vendor invoices become the source document by which the system generated purchase order is paid. The project managers have live access to monitor and manage construction spending and make educated completion forecasts. All accounting disciplines are also live in the system to perform payroll, accounts payable and receivable functions.

**CENTRAL INDIANA LABOR ORGANIZATIONS**

UA Local 440 Pipefitter's Union  
IBEW Local 481 Electrician Union  
United Association of Sprinkler Fitters Local 1

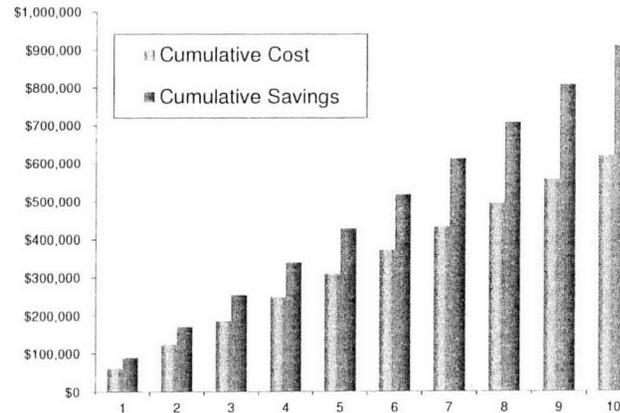
**KENTUCKY LABOR ORGANIZATIONS**

UA Local 184 Plumbers & Pipefitters Union  
IBEW Local 816 Electrician Union



**BEECH GROVE WATER SYSTEM**  
**WATER METER REPLACEMENT PROJECT**

Total Project Cost	<b>\$489,710</b>
Downpayment	\$0
Financed Investment Cost:	<b>\$489,710</b>
Rate of Financing:	4.25%
Term of Financing:	10 Years
Payments per Year:	1
Total Interest & Payments	<b>\$609,148</b>
Annual Payment	<b>\$60,915</b>
Total Savings Over Term:	<b>\$912,424</b>
Projected Savings Over 10 yr period:	<b>\$912,424</b>
Annual Utility Rate Increase:	4.00%
Annual Operational Savings Increase:	3.00%
Annual Service Cost Increase:	3.00%
Total Term Net Cash Flow:	<b>\$291,812</b>
Simple Payback:	6.23 Years
1st Year Annual Cash Flow:	<b>\$16,661</b>

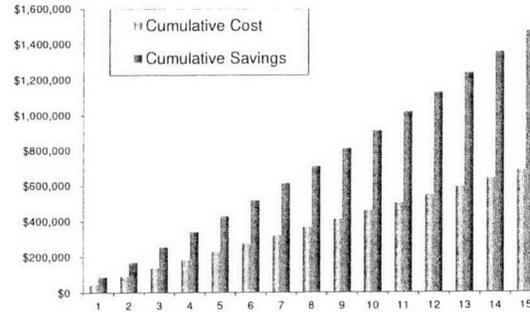


Term Period	X	1	2	3	4	5	6	7	8	9	10
Calendar Year	Construction	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Annual Utility Savings	\$10,000	\$26,403	\$27,459	\$28,557	\$29,700	\$30,888	\$32,123	\$33,408	\$34,745	\$36,134	\$37,580
Annual Operational Savings	\$0	\$42,829	\$44,114	\$45,437	\$46,800	\$48,204	\$49,651	\$51,140	\$52,674	\$54,254	\$55,882
Annualized Cost Avoid. Savings	\$1,000	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344
<b>Total Annual Program Savings</b>	<b>\$11,000</b>	<b>\$78,576</b>	<b>\$80,917</b>	<b>\$83,339</b>	<b>\$85,844</b>	<b>\$88,436</b>	<b>\$91,118</b>	<b>\$93,892</b>	<b>\$96,769</b>	<b>\$99,788</b>	<b>\$102,808</b>
Annual Financed Payment	\$0	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915
Annual Payment	(Ref. Only)	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915	\$60,915
Additional Training	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
*Support Services		\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305
<b>Total Proposed Annual Costs</b>	<b>\$0</b>	<b>\$61,915</b>	<b>\$61,945</b>	<b>\$61,976</b>	<b>\$62,007</b>	<b>\$62,040</b>	<b>\$62,074</b>	<b>\$62,109</b>	<b>\$62,145</b>	<b>\$62,182</b>	<b>\$62,220</b>
<b>Annual Cash Flow</b>	<b>\$11,000</b>	<b>\$16,661</b>	<b>\$18,972</b>	<b>\$21,363</b>	<b>\$23,837</b>	<b>\$26,396</b>	<b>\$29,044</b>	<b>\$31,783</b>	<b>\$34,618</b>	<b>\$37,551</b>	<b>\$40,586</b>
<b>Cumulative Cash Flow</b>	<b>\$11,000</b>	<b>\$27,661</b>	<b>\$46,633</b>	<b>\$67,997</b>	<b>\$91,833</b>	<b>\$118,229</b>	<b>\$147,273</b>	<b>\$179,057</b>	<b>\$213,675</b>	<b>\$251,226</b>	<b>\$291,812</b>
<b>Cumulative Project Costs</b>	<b>\$0</b>	<b>\$61,915</b>	<b>\$123,860</b>	<b>\$185,835</b>	<b>\$247,843</b>	<b>\$309,883</b>	<b>\$371,957</b>	<b>\$434,066</b>	<b>\$496,210</b>	<b>\$558,392</b>	<b>\$620,611</b>
<b>Cumulative Project Savings</b>	<b>\$11,000</b>	<b>\$89,576</b>	<b>\$170,493</b>	<b>\$253,832</b>	<b>\$339,676</b>	<b>\$428,112</b>	<b>\$519,230</b>	<b>\$613,122</b>	<b>\$709,885</b>	<b>\$809,618</b>	<b>\$912,424</b>



**BEECH GROVE WATER SYSTEM  
WATER METER REPLACEMENT PROJECT**

Total Project Cost	\$489,710
Downpayment	\$0
Financed Investment Cost:	\$489,710
Rate of Financing:	4.25%
Term of Financing:	15 Years
Payments per Year:	1
Total Interest & Payments	\$669,904
Annual Payment	\$44,660
Total Savings Over Term:	\$1,476,416
Projected Savings Over 15 yr period:	\$1,476,416
Annual Utility Rate Increase:	4.00%
Annual Operational Savings Increase:	3.00%
Annual Service Cost Increase:	4.00%
Total Term Net Cash Flow:	\$787,913
Simple Payback:	6.23 Years
1st Year Annual Cash Flow:	\$32,916

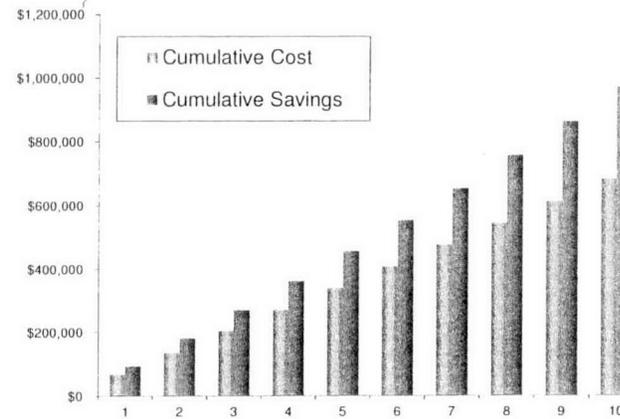


Term Period	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Calendar Year	Construction	2014	2015	2016	2017	2018	2018	2019	2020	2021	2022	2022	2023	2023	2024	2024	2025
Annual Utility Savings	\$11,000	\$26,403	\$27,459	\$28,557	\$29,700	\$30,888	\$32,123	\$33,408	\$34,745	\$36,134	\$37,580	\$39,083	\$40,646	\$42,272	\$43,963	\$45,721	
Annual Operational Savings	\$0	\$42,829	\$44,114	\$45,437	\$46,800	\$48,204	\$49,651	\$51,140	\$52,674	\$54,254	\$55,882	\$57,559	\$59,285	\$61,064	\$62,896	\$64,783	
Annualized Cost Avoid. Savings	\$0	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	\$9,344	
<b>Total Annual Program Savings</b>	<b>\$11,000</b>	<b>\$78,576</b>	<b>\$80,917</b>	<b>\$83,339</b>	<b>\$85,844</b>	<b>\$88,436</b>	<b>\$91,118</b>	<b>\$93,882</b>	<b>\$96,769</b>	<b>\$99,733</b>	<b>\$102,808</b>	<b>\$105,989</b>	<b>\$109,276</b>	<b>\$112,680</b>	<b>\$116,203</b>	<b>\$119,848</b>	
Annual Financed Payment	\$0	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	
Annual Payment	\$11,000	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	\$44,660	
Additional Training	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
*Support Services	\$0	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305	\$1,344	\$1,384	\$1,426	\$1,469	\$1,513	
<b>Total Proposed Annual Costs</b>	<b>\$0</b>	<b>\$45,660</b>	<b>\$45,690</b>	<b>\$45,721</b>	<b>\$45,753</b>	<b>\$45,785</b>	<b>\$45,820</b>	<b>\$45,854</b>	<b>\$45,890</b>	<b>\$45,927</b>	<b>\$45,965</b>	<b>\$46,004</b>	<b>\$46,044</b>	<b>\$46,086</b>	<b>\$46,129</b>	<b>\$46,173</b>	
<b>Annual Cash Flow</b>	<b>\$11,000</b>	<b>\$32,916</b>	<b>\$35,227</b>	<b>\$37,618</b>	<b>\$40,091</b>	<b>\$42,650</b>	<b>\$45,298</b>	<b>\$48,038</b>	<b>\$50,873</b>	<b>\$53,806</b>	<b>\$56,841</b>	<b>\$59,981</b>	<b>\$63,231</b>	<b>\$66,594</b>	<b>\$70,074</b>	<b>\$73,675</b>	
<b>Cumulative Cash Flow</b>	<b>\$11,000</b>	<b>\$43,916</b>	<b>\$79,142</b>	<b>\$116,760</b>	<b>\$156,851</b>	<b>\$199,502</b>	<b>\$244,800</b>	<b>\$292,838</b>	<b>\$343,711</b>	<b>\$397,517</b>	<b>\$454,357</b>	<b>\$514,339</b>	<b>\$577,570</b>	<b>\$644,164</b>	<b>\$714,238</b>	<b>\$787,913</b>	
<b>Cumulative Project Costs</b>	<b>\$0</b>	<b>\$45,660</b>	<b>\$91,351</b>	<b>\$137,072</b>	<b>\$182,825</b>	<b>\$228,610</b>	<b>\$274,430</b>	<b>\$320,284</b>	<b>\$366,174</b>	<b>\$412,101</b>	<b>\$458,066</b>	<b>\$504,071</b>	<b>\$550,115</b>	<b>\$596,201</b>	<b>\$642,330</b>	<b>\$688,503</b>	
<b>Cumulative Project Savings</b>	<b>\$11,000</b>	<b>\$89,576</b>	<b>\$170,493</b>	<b>\$253,832</b>	<b>\$339,676</b>	<b>\$428,112</b>	<b>\$519,230</b>	<b>\$613,122</b>	<b>\$709,885</b>	<b>\$809,618</b>	<b>\$912,424</b>	<b>\$1,018,409</b>	<b>\$1,127,685</b>	<b>\$1,240,365</b>	<b>\$1,356,568</b>	<b>\$1,476,416</b>	



**BEECH GROVE WATER SYSTEM**  
**WATER METER REPLACEMENT PROJECT**  
 (with ALTERNATE 'A')

Total Project Cost	\$539,810
Downpayment	\$0
Financed Investment Cost:	\$539,810
Rate of Financing:	4.25%
Term of Financing:	10 Years
Payments per Year:	1
Total Interest & Payments	\$671,467
Annual Payment	\$67,147
Total Savings Over Term:	\$974,156
Projected Savings Over 10 yr period:	\$974,156
Annual Utility Rate Increase:	4.00%
Annual Operational Savings Increase:	3.00%
Annual Service Cost Increase:	3.00%
Total Term Net Cash Flow:	\$291,226
Simple Payback:	6.42 Years
1st Year Annual Cash Flow:	\$15,940



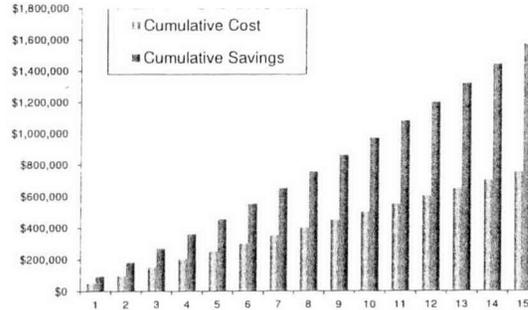
Term Period	X	1	2	3	4	5	6	7	8	9	10
Calendar Year	Construction	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Annual Utility Savings	\$10,000	\$26,403	\$27,459	\$28,557	\$29,700	\$30,888	\$32,123	\$33,408	\$34,745	\$36,134	\$37,580
Annual Operational Savings	\$0	\$47,353	\$48,774	\$50,237	\$51,744	\$53,296	\$54,895	\$56,542	\$58,238	\$59,985	\$61,785
Annualized Cost Avoid. Savings	\$1,000	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331
<b>Total Annual Program Savings</b>	<b>\$11,000</b>	<b>\$84,087</b>	<b>\$86,564</b>	<b>\$89,125</b>	<b>\$91,775</b>	<b>\$94,515</b>	<b>\$97,349</b>	<b>\$100,281</b>	<b>\$103,314</b>	<b>\$106,461</b>	<b>\$109,686</b>
Annual Financed Payment	\$0	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147
Annual Payment (Ref. Only)		\$67,147	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147	\$67,147
Additional Training	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
*Support Services		\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305
<b>Total Proposed Annual Costs</b>	<b>\$0</b>	<b>\$68,147</b>	<b>\$68,177</b>	<b>\$68,208</b>	<b>\$68,239</b>	<b>\$68,272</b>	<b>\$68,306</b>	<b>\$68,341</b>	<b>\$68,377</b>	<b>\$68,413</b>	<b>\$68,451</b>
<b>Annual Cash Flow</b>	<b>\$11,000</b>	<b>\$15,940</b>	<b>\$18,387</b>	<b>\$20,918</b>	<b>\$23,535</b>	<b>\$26,243</b>	<b>\$29,043</b>	<b>\$31,940</b>	<b>\$34,937</b>	<b>\$38,037</b>	<b>\$41,244</b>
<b>Cumulative Cash Flow</b>	<b>\$11,000</b>	<b>\$26,940</b>	<b>\$45,327</b>	<b>\$66,245</b>	<b>\$89,780</b>	<b>\$116,023</b>	<b>\$145,067</b>	<b>\$177,007</b>	<b>\$211,944</b>	<b>\$249,982</b>	<b>\$291,226</b>
<b>Cumulative Project Costs</b>	<b>\$0</b>	<b>\$68,147</b>	<b>\$136,323</b>	<b>\$204,531</b>	<b>\$272,770</b>	<b>\$341,043</b>	<b>\$409,348</b>	<b>\$477,689</b>	<b>\$546,066</b>	<b>\$614,479</b>	<b>\$682,931</b>
<b>Cumulative Project Savings</b>	<b>\$11,000</b>	<b>\$95,087</b>	<b>\$181,651</b>	<b>\$270,776</b>	<b>\$362,551</b>	<b>\$457,066</b>	<b>\$554,415</b>	<b>\$654,696</b>	<b>\$758,010</b>	<b>\$864,461</b>	<b>\$974,156</b>



**BEECH GROVE WATER SYSTEM**

**WATER METER REPLACEMENT PROJECT  
(with ALTERNATE 'A')**

Total Project Cost	\$539,810
Downpayment	\$0
<b>Financed Investment Cost:</b>	<b>\$539,810</b>
Rate of Financing:	4.25%
Term of Financing:	15 Years
Payments per Year:	1
<b>Total Interest &amp; Payments</b>	<b>\$738,439</b>
Annual Payment	\$49,229
<b>Total Savings Over Term:</b>	<b>\$1,575,362</b>
<b>Projected Savings Over 15 yr period:</b>	<b>\$1,575,362</b>
Annual Utility Rate Increase:	4.00%
Annual Operational Savings Increase:	3.00%
Annual Service Cost Increase:	4.00%
<b>Total Term Net Cash Flow:</b>	<b>\$818,325</b>
Simple Payback:	6.42 Years
<b>1st Year Annual Cash Flow:</b>	<b>\$33,858</b>



Term Period	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Calendar Year	Construction	2014	2016	2016	2017	2018	2018	2019	2021	2022	2023	2024	2025	2026	2027
Annual Utility Savings		\$26,403	\$27,459	\$28,557	\$29,700	\$30,888	\$32,123	\$33,408	\$34,745	\$36,134	\$37,580	\$39,083	\$40,646	\$42,272	\$43,963
Annual Operational Savings		\$47,353	\$48,774	\$50,237	\$51,744	\$53,296	\$54,895	\$56,542	\$58,238	\$59,985	\$61,785	\$63,638	\$65,548	\$67,514	\$69,539
Annualized Cost Avoid. Savings		\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331	\$10,331
<b>Total Annual Program Savings</b>	<b>\$11,000</b>	<b>\$84,087</b>	<b>\$86,564</b>	<b>\$89,128</b>	<b>\$91,775</b>	<b>\$94,515</b>	<b>\$97,349</b>	<b>\$100,281</b>	<b>\$103,314</b>	<b>\$106,451</b>	<b>\$109,686</b>	<b>\$118,652</b>	<b>\$118,925</b>	<b>\$120,117</b>	<b>\$123,883</b>
Annual Financed Payment		\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229
Annual Payment		\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229	\$49,229
Additional Training		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
*Support Services		\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305	\$1,344	\$1,384	\$1,426	\$1,469
<b>Total Proposed Annual Costs</b>	<b>\$0</b>	<b>\$50,229</b>	<b>\$50,259</b>	<b>\$50,290</b>	<b>\$50,322</b>	<b>\$50,355</b>	<b>\$50,389</b>	<b>\$50,424</b>	<b>\$50,459</b>	<b>\$50,495</b>	<b>\$50,534</b>	<b>\$50,573</b>	<b>\$50,613</b>	<b>\$50,655</b>	<b>\$50,700</b>
<b>Annual Cash Flow</b>	<b>\$11,000</b>	<b>\$33,858</b>	<b>\$36,304</b>	<b>\$38,835</b>	<b>\$41,453</b>	<b>\$44,160</b>	<b>\$46,961</b>	<b>\$49,858</b>	<b>\$52,855</b>	<b>\$55,955</b>	<b>\$59,162</b>	<b>\$62,479</b>	<b>\$65,911</b>	<b>\$69,462</b>	<b>\$73,136</b>
<b>Cumulative Cash Flow</b>	<b>\$11,000</b>	<b>\$44,858</b>	<b>\$81,162</b>	<b>\$119,997</b>	<b>\$161,450</b>	<b>\$205,610</b>	<b>\$252,571</b>	<b>\$302,429</b>	<b>\$355,284</b>	<b>\$411,238</b>	<b>\$470,400</b>	<b>\$532,879</b>	<b>\$598,791</b>	<b>\$668,253</b>	<b>\$741,388</b>
<b>Cumulative Project Costs</b>	<b>\$0</b>	<b>\$50,229</b>	<b>\$100,488</b>	<b>\$150,779</b>	<b>\$201,101</b>	<b>\$251,455</b>	<b>\$301,844</b>	<b>\$352,267</b>	<b>\$402,726</b>	<b>\$453,222</b>	<b>\$503,756</b>	<b>\$554,329</b>	<b>\$604,943</b>	<b>\$655,598</b>	<b>\$706,296</b>
<b>Cumulative Project Savings</b>	<b>\$11,000</b>	<b>\$95,087</b>	<b>\$181,651</b>	<b>\$270,776</b>	<b>\$362,551</b>	<b>\$457,066</b>	<b>\$554,415</b>	<b>\$654,696</b>	<b>\$758,010</b>	<b>\$864,461</b>	<b>\$974,156</b>	<b>\$1,087,209</b>	<b>\$1,203,734</b>	<b>\$1,323,851</b>	<b>\$1,447,684</b>



## Water Savings Calculations

Beach Grove Water Billed Out				City of Henderson Water Purchased				West Daviess County Water Purchased				Total Water Purchased		Billed Out		Bought vs Billed		Water Loss %
Month	Amount	Gallons	\$/1000 Gal.	Month	Amount	Cubic Ft	Gallons	\$/1000 Gal.	Month	Amount	Gallons	\$/1000 Gal.	Amount	Amount	Amount	Amount		
JAN - 2013	\$25,681.42	3,699,764	\$6.94	JAN - 2013	\$17,829.46	773,000	5,782,442	\$3.08	JAN - 2013	\$236.00	100,000	\$2.36	\$18,065.46	\$25,681.42	\$7,615.96		37%	
FEB - 2013	\$25,293.37	3,606,814	\$7.01	FEB - 2013	\$26,870.83	1,273,000	9,522,702	\$2.82	FEB - 2013	\$554.60	235,000	\$2.36	\$27,425.43	\$25,293.37	-\$2,132.06		63%	
MAR - 2013	\$23,733.45	3,338,300	\$7.11	MAR - 2013	\$1,423.96	591,100	4,421,735	\$0.32	MAR - 2013	-\$16.52	0	\$2.36	\$1,407.44	\$23,733.45	\$22,326.01			
APR - 2013	\$26,041.16	3,757,162	\$6.93	APR - 2013	\$14,381.04	601,400	4,498,785	\$3.20	APR - 2013	\$337.48	143,000	\$2.36	\$14,718.52	\$26,041.16	\$11,322.64		19%	
MAY - 2013	\$23,617.26	3,279,996	\$7.20	MAY - 2013	\$14,399.03	602,200	4,504,769	\$3.20	MAY - 2013	\$21.24	9,000	\$2.36	\$14,420.27	\$23,617.26	\$9,196.99		27%	
JUN - 2013	\$30,301.19	4,500,544	\$6.73	JUN - 2013	\$17,586.51	752,200	5,626,847	\$3.13	JUN - 2013	\$722.16	306,000	\$2.36	\$18,308.67	\$30,301.19	\$11,992.52		24%	
JUL - 2013	\$27,726.37	3,900,474	\$7.11	JUL - 2013	\$15,779.92	663,600	4,964,073	\$3.18	JUL - 2013	\$674.96	286,000	\$2.36	\$16,454.88	\$27,726.37	\$11,271.49		26%	
AUG - 2013	\$26,649.02	3,813,338	\$6.99	AUG - 2013	\$16,135.17	680,600	5,091,242	\$3.17	AUG - 2013	\$302.08	128,000	\$2.36	\$16,437.25	\$26,649.02	\$10,211.77		27%	
SEP - 2013	\$29,448.57	4,341,222	\$6.78	SEP - 2013	\$13,854.77	578,000	4,323,741	\$3.20	SEP - 2013	\$507.40	215,000	\$2.36	\$14,362.17	\$29,448.57	\$15,086.40		4%	
OCT - 2013	\$21,785.83	2,929,627	\$7.44	OCT - 2013	\$11,136.81	462,300	3,458,244	\$3.22	OCT - 2013	\$103.84	44,000	\$2.36	\$11,240.65	\$21,785.83	\$10,545.18		16%	
NOV - 2013	\$22,468.88	3,094,069	\$7.26	NOV - 2013	\$10,125.03	420,300	3,144,063	\$3.22	NOV - 2013	\$110.92	47,000	\$2.36	\$10,235.95	\$22,468.88	\$12,232.93		3%	
DEC - 2013	\$19,067.15	2,434,793	\$7.83	DEC - 2013	\$11,151.26	462,900	3,462,733	\$3.22	DEC - 2013	\$37.76	16,000	\$2.36	\$11,189.02	\$19,067.15	\$7,878.13		30%	
<b>Total Billed Out:</b>	<b>\$301,813.67</b>	<b>42,696,103 gal.</b>	<b>\$7.11</b>	<b>Total Water Bought:</b>	<b>\$170,673.79</b>	<b>7,460,600</b>	<b>58,801,376 gal.</b>	<b>\$2.91</b>	<b>Total Water Bought:</b>	<b>\$3,591.92</b>	<b>1,529,000 gal.</b>	<b>\$2.36</b>	<b>\$174,265.71</b>	<b>\$301,813.67</b>	<b>\$127,547.96</b>		<b>29%</b>	

\* Water purchased and sold information shown above provided by Beech Grove Water.

### 3rd party meter testing accuracy (AVG.)

92%

Projected Water Billing with 100% accuracy

46,408,808 gallons per year

Non-Billed Water per meter inaccuracy

3,712,705 gallons per year

Lost Yearly Revenue per meter inaccuracy

\$26,403

Based on Water Rate Average \$/1000 Gallons billed out

**SOURCES AND USES OF FUNDS**

**BEECH GROVE WATER SYSTEM, INC. (KENTUCKY)  
 TAXABLE LEASE PURCHASE AGREEMENT, SERIES 2015  
 \$489,710 Project  
 Non-Rated, 2030 Final Maturity, Level Debt Service  
 [ Preliminary – for discussion only ]**

Dated Date                    07/07/2015  
 Delivery Date                07/07/2015

**Sources:**

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Certificate Proceeds:	
Par Amount	514,131.23
	<hr/> 514,131.23 <hr/>

**Uses:**

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Project Fund Deposits:	
Project Fund	489,710.00
Delivery Date Expenses:	
Cost of Issuance	24,421.23
	<hr/> 514,131.23 <hr/>

**CERTIFICATE DEBT SERVICE**

**BEECH GROVE WATER SYSTEM, INC. (KENTUCKY)  
 TAXABLE LEASE PURCHASE AGREEMENT, SERIES 2015  
 \$489,710 Project  
 Non-Rated, 2030 Final Maturity, Level Debt Service  
 [ Preliminary -- for discussion only ]**

<b>Period Ending</b>	<b>Principal</b>	<b>Coupon</b>	<b>Interest</b>	<b>Debt Service</b>	<b>Annual Debt Service</b>
07/01/2016	22,154.07	6.250%	31,597.65	53,751.72	53,751.72
07/01/2017	23,003.14	6.250%	30,748.57	53,751.71	53,751.71
07/01/2018	24,440.84	6.250%	29,310.88	53,751.72	53,751.72
07/01/2019	25,968.39	6.250%	27,783.32	53,751.71	53,751.71
07/01/2020	27,591.42	6.250%	26,160.30	53,751.72	53,751.72
07/01/2021	29,315.88	6.250%	24,435.84	53,751.72	53,751.72
07/01/2022	31,148.12	6.250%	22,603.59	53,751.71	53,751.71
07/01/2023	33,094.88	6.250%	20,656.84	53,751.72	53,751.72
07/01/2024	35,163.31	6.250%	18,588.41	53,751.72	53,751.72
07/01/2025	37,361.02	6.250%	16,390.70	53,751.72	53,751.72
07/01/2026	39,696.08	6.250%	14,055.64	53,751.72	53,751.72
07/01/2027	42,177.09	6.250%	11,574.63	53,751.72	53,751.72
07/01/2028	44,813.16	6.250%	8,938.56	53,751.72	53,751.72
07/01/2029	47,613.98	6.250%	6,137.74	53,751.72	53,751.72
07/01/2030	50,589.85	6.250%	3,161.87	53,751.72	53,751.72
	<b>514,131.23</b>		<b>292,144.52</b>	<b>806,275.75</b>	<b>806,275.75</b>

**CERTIFICATE SUMMARY STATISTICS**

**BEECH GROVE WATER SYSTEM, INC. (KENTUCKY)  
TAXABLE LEASE PURCHASE AGREEMENT, SERIES 2015  
\$489,710 Project  
Non-Rated, 2030 Final Maturity, Level Debt Service  
[ Preliminary – for discussion only ]**

Dated Date	07/07/2015
Delivery Date	07/07/2015
First Coupon	07/01/2016
Last Maturity	07/01/2030
Arbitrage Yield	6.155725%
True Interest Cost (TIC)	6.155725%
Net Interest Cost (NIC)	6.250000%
All-in TIC	6.894401%
Average Coupon	6.250000%
Average Life (years)	9.092
Weighted Average Maturity (years)	9.092
Duration of Issue (years)	6.867
Par Amount	514,131.23
Certificate Proceeds	514,131.23
Total Interest	292,144.52
Net Interest	292,144.52
Certificate Years from Dated Date	4,674,312.34
Certificate Years from Delivery Date	4,674,312.34
Total Debt Service	806,275.75
Maximum Annual Debt Service	53,751.72
Average Annual Debt Service	53,811.51
Underwriter's Fees (per \$1000)	
Average Takedown	
Other Fee	
Total Underwriter's Discount	
Bid Price	100.000000

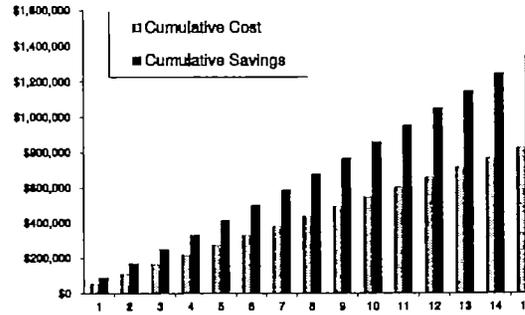
Certificate Component	Par Value	Price	Average Coupon	Average Life	PV of 1 bp change
Term Due 2030	514,131.23	100.000	6.250%	9.092	488.42
	514,131.23			9.092	488.42

	TIC	All-In TIC	Arbitrage Yield
Par Value	514,131.23	514,131.23	514,131.23
+ Accrued Interest			
+ Premium (Discount)			
- Underwriter's Discount			
- Cost of Issuance Expense		-24,421.23	
- Other Amounts			
Target Value	514,131.23	489,710.00	514,131.23
Target Date	07/07/2015	07/07/2015	07/07/2015
Yield	6.155725%	6.894401%	6.155725%



**BEECH GROVE WATER SYSTEM  
WATER METER REPLACEMENT PROJECT**

Total Project Cost	\$489,710
Downpayment	\$0
Financed Investment Cost:	\$489,710
Rate of Financing:	6.25%
Term of Financing:	16 Years
Payments per Year:	1
Total Interest & Payments	\$906,276
Annual Payment	\$53,752
Total Savings Over Term:	\$1,343,849
Projected Savings Over 15 yr period:	\$1,343,849
Annual Utility Rate Increase:	0.00%
Annual Operational Savings Increase:	3.00%
Annual Service Cost Increase:	3.00%
Total Term Net Cash Flow:	\$518,974
Simple Payback:	6.23 Years
1st Year Annual Cash Flow:	\$23,828



Term Period	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Calendar Year	Construction	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Annual Utility Savings	\$10,000	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403	\$26,403
Annual Operational Savings	\$0	\$42,832	\$44,117	\$45,440	\$46,804	\$48,206	\$49,654	\$51,144	\$52,678	\$54,258	\$55,886	\$57,563	\$59,290	\$61,068	\$62,900	\$64,787
Annualized Cost Avoid. Savings	\$1,000	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345	\$9,345
<b>Total Annual Program Savings</b>	<b>\$11,000</b>	<b>\$79,580</b>	<b>\$79,865</b>	<b>\$81,188</b>	<b>\$82,552</b>	<b>\$83,956</b>	<b>\$85,402</b>	<b>\$86,892</b>	<b>\$88,426</b>	<b>\$89,990</b>	<b>\$91,591</b>	<b>\$93,231</b>	<b>\$94,908</b>	<b>\$96,616</b>	<b>\$98,348</b>	<b>\$100,105</b>
Annual Financed Payment	\$0	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72
Annual Payment (Ref. Only)		\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72	\$53,751.72
Additional Training	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
*Support Services		\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305	\$1,344	\$1,384	\$1,426	\$1,469	\$1,513
<b>Total Proposed Annual Costs</b>	<b>\$0</b>	<b>\$54,752</b>	<b>\$54,782</b>	<b>\$54,813</b>	<b>\$54,844</b>	<b>\$54,877</b>	<b>\$54,911</b>	<b>\$54,946</b>	<b>\$54,982</b>	<b>\$55,018</b>	<b>\$55,055</b>	<b>\$55,093</b>	<b>\$55,132</b>	<b>\$55,172</b>	<b>\$55,213</b>	<b>\$55,254</b>
Annual Cash Flow	\$11,000	\$23,828	\$25,083	\$26,378	\$27,707	\$29,079	\$30,491	\$31,948	\$33,444	\$34,988	\$36,578	\$38,215	\$39,899	\$41,633	\$43,428	\$45,271
Cumulative Cash Flow	\$11,000	\$34,828	\$59,912	\$88,287	\$119,895	\$173,564	\$205,510	\$238,954	\$273,942	\$310,520	\$348,736	\$388,638	\$430,276	\$473,703	\$518,974	
Cumulative Project Costs	\$0	\$54,752	\$109,533	\$164,348	\$219,191	\$274,068	\$328,979	\$383,925	\$438,906	\$493,925	\$548,981	\$604,077	\$669,213	\$734,390	\$769,610	\$824,875
<b>Cumulative Project Savings</b>	<b>\$11,000</b>	<b>\$89,580</b>	<b>\$169,445</b>	<b>\$250,633</b>	<b>\$333,185</b>	<b>\$417,141</b>	<b>\$502,543</b>	<b>\$589,435</b>	<b>\$677,881</b>	<b>\$767,867</b>	<b>\$859,501</b>	<b>\$952,812</b>	<b>\$1,047,849</b>	<b>\$1,144,685</b>	<b>\$1,243,313</b>	<b>\$1,343,849</b>