

Agenda

**Meeting of the Commissioners of Public Works
of the City of Charleston, South Carolina
(Charleston Water System)**

August 23, 2011, 9:00 a.m.

Our Mission is to protect public health and enhance the environment of our service community by providing clean water services of exceptional quality and value.
Our Vision is to become, by 2012, an organization worthy of a SC Governor's Quality Award achieved through teamwork, customer focus, and performance excellence.
Our Core Values Teamwork • Ethical Behavior & Integrity • Accountability • Customer Service Focus • Open & Honest Communication • Innovation

**Meeting of the Commissioners of Public Works
of the City of Charleston, South Carolina
(Charleston Water System)**

Mr. Thomas B. Pritchard, Chairman

August 23, 2011

- I. Call to Order**
- II. Compliance With Public Notice – Mr. Pritchard**
- III. Invocation – Mr. Cline**
- IV. Pledge of Allegiance – All present**
- V. Adjourn to Committee Meetings, followed by Commissioners Meeting**

**Meeting of the Commissioners of Public Works
of the City of Charleston, South Carolina
(Charleston Water System)**

**Public Contract and Finance Committee
Mr. Thomas B. Pritchard, Committee Chairman**

August 23, 2011

I. Call to Order

II. Approval of Minutes of Committee Meeting of July 26, 2011

III. Update on Charleston Water System's Standard & Poor's AAA Rating – Mr. Ropp / Mr. Hill

Mr. Ropp and Mr. Hill will provide a short update on Charleston Water System's AAA Bond Rating in light of the recent downgrade from Standard & Poor's of the Federal Government.

**IV. Review of Black & Veatch Adjusted Rates for the East Cooper Customers – Mr. Ropp
Exhibit A**

Mr. Ropp will inform the Commissioners of the most current East Cooper rate adjustments as prepared by Black & Veatch. *(Information Only)*

V. Update on Charleston Water System's Liquidity Policy – Mr. Ropp / Mr. Hill

Mr. Ropp will inform the Commissioners about Charleston Water System's proposed Liquidity Policy and request any input before bringing such policy to the Commissioners for final adoption. *(Information Only)*

VI. Memorandum of Understanding (MOU) with the City of Charleston on Illicit Stormwater/Sewer Connections – Mr. Fairey – Exhibit B

Mr. Fairey will discuss a draft reciprocal MOU with the City of Charleston for handling repairs, etc., on illicit connections to each parties' sewer systems. Staff will request a motion to approve the MOU pending legal review.

VII. Adjournment



BLACK & VEATCH CORPORATION
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May 17, 2011

Mr. Kin Hill, P.E.
 Chief Executive Officer
 Charleston Water System
 103 St. Philip Street
 Charleston, South Carolina 29403

Dear Mr. Hill:

As requested, we have developed adjusted Volumetric Rates and charges applicable to East Cooper Purchased Capacity wholesale water service customers, recognizing applicable contract capacities, actual service requirements and costs for the Contract Year ended December 31, 2010. Adjusted rates and charges are calculated recognizing the derivation procedures provided for in Article 7.3 and Exhibits C, D, and E of the respective Charleston Water System's agreements with Mount Pleasant, Sullivan's Island, and the Isle of Palms. Copies of the detailed calculation sheets applicable to each community are enclosed.

The following table summarizes the resulting adjusted rates, billed volumes, adjusted charges, and refunds applicable to each of these customers. The adjusted rates presented on Lines 1 through 4 of the table also show the constituent elements of Operation and Maintenance Expense, Depreciation of General Plant, and Return on General Plant. Below the Billed Volume and resulting Adjusted Charges, presented on Lines 5 and 6 of the table, are shown the Historical Rates and Charges Paid for the same Contract Year. The differences between the Adjusted Charges and the Charges Paid are shown on Line 9 as the Amount Due.

Line No.	Description	Mount Pleasant	Sullivan's Island	Isle of Palms
Adjusted Volumetric Rates - \$/Mgal.				
1	Operation & Maintenance	0.49	0.79	0.56
2	Depreciation (Gen'l Plant)	0.06	0.22	0.11
3	Return (Gen'l Plant)	0.01	0.04	0.02
4	Total Adjusted Rate	0.56	1.05	0.69
5	Billed Volume (a) - Mgal.	2,049,152	93,662	369,100
6	Adjusted Charge (a) - \$	1,147,525	98,345	254,679
Historical Rates - \$/Mgal.				
7	January through June	0.56	1.17	0.71
	July through December	0.56	1.37	0.79
8	Charges Paid (a) - \$	1,147,525	118,543	277,203
9	Amount Due (To be Refunded)- \$	<u>0</u>	<u>(20,198)</u>	<u>(22,524)</u>

Mgal. - Thousand gallons

(a) Excludes any volumes and charges billed under Municipal Wholesale Rate (ref. Contract Article 5.3).

May 17, 2011

As shown in the summary table of the first page of this letter, refunds totaling \$20,198 for Sullivan's Island and \$22,524 for Isle of Palms are shown to be payable by the Charleston Water System. Although the indicated amounts of refunds due are determined by a variety of factors, certainly the greatest of these is the total amount of operation and maintenance expense incurred, which comprised between 70 and 90 percent of the total rate of charge. The Commissioners' ability to control these expenses and hold them below budgeted levels played a significant role in making these refunds possible. Actual operation and maintenance expenses for 2010 were approximately \$1,770,000, or over 5 percent, less than projected. Also affecting the relative amounts of refund or charges due for individual customers is the relationship between the demand factors assumed in deriving the prospective rates, compared with the actual demand factors recognized in all derivation of the adjusted rates of charge. As shown in the following table, the actual demand factor for Sullivan's Island and Isle of Palms are less than those assumed in the prospective rates used for the initial billings than the assumed demand factors whereas the actual demand factor for Mount Pleasant is essentially the same. As a result, the adjusted unit rates for Sullivan's Island and Isle of Palms decrease. Finally, the reallocation of costs between base, maximum day, and maximum hour due to lower system maximum day and maximum hour demands resulted in a lower adjusted volumetric rate for operation and maintenance expense for Sullivan's Island and Isle of Palms since their demand factors are greater than 1.

Mount Pleasant's Actual Average Demand for 2010 was 5.614 mgd which is greater than their contract capacity of 5.5 mgd and would result in a demand factor of 0.979. Since a demand factor of less than 1.000 cannot be used for these calculations, Mount Pleasant's Actual Average Demand for 2010 was adjusted to 5.50 mgd.

Line No.	Description	Mount Pleasant	Sullivan's Island	Isle of Palms
<u>Prospective Rates:</u>				
1	Assumed Contract Capacity	5.50 mgd	0.75 mgd	1.50 mgd
2	Assumed Average Demand	5.500	0.223	0.922
3	Demand Factor	1.000	3.358	1.627
<u>Adjusted Rates:</u>				
4	Actual Contract Capacity	5.50 mgd	0.75 mgd	1.50 mgd
5	Actual Average Demand	5.500	0.257	1.011
6	Demand Factor	1.000 (a)	2.923	1.483

- (a) For purposes of these calculations, a demand factor of less than 1.000 cannot be used.

Mr. Kin Hill, P.E.

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May 17, 2011

Should you have questions regarding any of the material presented herein, we shall be pleased to respond to them as necessary. Also, please advise us if any additional supporting data or calculations are desired.

We appreciate this opportunity to be of service to the Charleston Water System.

Very truly yours,

BLACK & VEATCH CORPORATION

A handwritten signature in cursive script that reads "Anna White".

Anna M. White

Enclosure[s]

cc (w/enclosures): Mr. Wesley Ropp, CMA

MT. PLEASANT
EXHIBIT C - Page Two
 WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND MT. PLEASANT
 DEVELOPMENT OF O&M VOLUMETRIC RATE

Derivation of O&M Volumetric Rate Charge Recognizing Usage and Demand Factors

Assume: Municipalities Class MD Demand/Average Day Flow = 1,900 (Reference: H-5)
 Assume: Municipalities Class MH Demand/Average Day Flow = 2,400 (Reference: H-5)
 Resulting Municipalities Class MH Demand/MD Demand = 2,400/1,900 = 1.2632

To Adjust O&M Rate for Variation in Demand Factor (DF) and Defining DF as the Ratio of
 Mt. Pleasant Contract Capacity to Mt. Pleasant Average Day Flow, Then:

$$\text{MD Adjustment Factor} = \frac{(DF - 1)/(1.900 - 1)}{(1.1111) * (DF - 1)} \quad \text{and} \quad \text{MH Adjustment Factor} = \frac{(1.26316DF - DF)/(2.400 - 1.900)}{(0.52632) * DF}$$

Treatment O&M Expense Unit Cost:

$$\begin{matrix} \text{Base} & \text{MD} & \text{MH} \\ 0.45605 + & 0.12441 * [1.1111(DF - 1)] + & 0.01001 * (0.52632 * DF) = & 0.31782 + 0.14351 * DF \end{matrix}$$

Transmission O&M Expense Unit Cost:

$$\begin{matrix} \text{Base} & \text{MD} & \text{MH} \\ 0.02092 + & 0.01200 * [1.1111(DF - 1)] + & 0.00614 * (0.52632 * DF) = & 0.00758 + 0.01657 * DF \end{matrix}$$

Derivation of Mt. Pleasant O&M Volume Rate of Charge

Mt. Pleasant Contract Capacity = 5.50 mgd
 Mt. Pleasant 2010 Projected Average Day Flow = 2,683,824 Ccf = 5.500 mgd (Reference: H-4)

0

Assume: Mt. Pleasant' Demand Factor (DF) = 5.50 / 5.500 = 1.00000, Then the Treatment and Transmission O&M Volumetric Rate is:

Treatment O&M Expense Volumetric Rate:

$$= 0.31782 + 0.14351 * 1.00000 = 0.46132$$

Transmission O&M Expense Volumetric Rate:

$$= 0.00758 + 0.01657 * 1.00000 = 0.02415$$

Total O&M Volumetric Rate:

$$\frac{0.48547}{\text{\$/Mgal}}$$

**MT. PLEASANT
EXHIBIT D
WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND MT. PLEASANT
GENERAL PLANT DEPRECIATION COMPONENT OF VOLUMETRIC RATE**

General Plant Depreciation Related to Treatment Plant, Test Year 2010
Mt. Pleasant Contract Share of Treatment Plant Depreciation Expense: \$169,819 (Reference: H-9)
General Plant Portion of Depreciation: 57.8% (Reference: H-17)
General Plant Depreciation for Treatment Plant Depreciation Expense:
\$169,819 x 0.578 = \$98,156

General Plant Depreciation Related to Transmission System, Test Year 2010
Mt. Pleasant Contract Share of Transmission Value (Current OC): \$3,062,972 (Reference: H-10)
General Plant Portion of Depreciation: 57.8% (Reference: H-17)
Annual Depreciation Percentage: 1.03% (Reference: H-16)
General Plant Depreciation Per Value of Transmission System OC Value:
\$3,062,972 x 57.8 x 0.0103 = \$18,233

Depreciation Rate Per 1,000 Gals.

Assume Contract Capacity of 5.50 mgd and an Average Day Flow of 5.500 mgd

Volumetric Depreciation Equation Related to Treatment Plant:
\$98,156 / (5.500 mgd x 365 days/year x 1,000) = \$0.04889

Volumetric Depreciation Equation Related to Transmission Plant:
\$18,233 / (5.500 mgd x 365 days/year x 1,000) = \$0.00908

Total General Plant Depreciation Rate:
\$0.04889/Mgal + \$0.00908/Mgal = \$0.05798

**MT. PLEASANT
EXHIBIT E
WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND MT. PLEASANT
GENERAL PLANT RETURN COMPONENT OF VOLUMETRIC RATE**

General Plant Return Related to Treatment Plant, Test Year 2010
 Mt. Pleasant Contract Share of Treatment Plant Value (Current RCLD): \$11,397,133 = \$2,072,206/mgd x 6 mgd
 General Plant Value as Share of Total Value: 2.8% (Reference: H-17)
 Rate of Return on RCLD Plant Value: 3.45%
 General Plant Return Per Value of Treatment Plant RCLD Value:
 \$11,397,133 x 0.028 x 0.035 = \$11,010

General Plant Return Related to Transmission System, Test Year 2010
 Mt. Pleasant Contract Share of Transmission System Value (Current RCLD): \$5,909,539 (Reference: H-10)
 General Plant Value as Share of Total Value: 2.8% (Reference: H-17)
 Rate of Return on RCLD Plant Value: 3.45%
 General Plant Return Per Value of Transmission System RCLD Value:
 \$5,909,539 x 0.028 x 0.035 = \$5,709

Return Volumetric Rate Per 1,000 Gals.

Assume Contract Capacity of 5.50 mgd and an Average Day Flow of 5.500 mgd

Volumetric Return Equation Related to Treatment Plant:
 \$11,010 / (5.500 mgd x 365 days/year x 1,000) = \$0.00548 /Mgal

Volumetric Return Equation Related to Transmission Plant:
 \$5,709 / (5.500 mgd x 365 days/year x 1,000) = \$0.00284 /Mgal

Total General Plant Return Rate:
 \$0.00548/Mgal + \$0.00284/Mgal = \$0.00833 /Mgal

SULLIVAN'S ISLAND

EXHIBIT C - Page One

WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND EAST COOPER PURCHASED CAPACITY CONTRACT CUSTOMERS DEVELOPMENT OF O&M VOLUMETRIC RATE

Input Data from System-Wide Cost of Service Study

Base (d)	Operating Expense Cost Function	Municipalities Class Units of Service (a)	Units	Reference	Test Year 2010 Operating Expense Unit Cost	Units	Reference	Proportional Breakdown of Test Year 2010 Unit Costs			Reference	
								Treatment	Transmission	Other (b)		Total
Common to All Treated Water Service		2,765,206 Mgal	H-5		0.44358 \$/Mgal	H-28		0.95615	0.04385	0.00000	1.00000	H-24
Maximum Day Extra Capacity (e)		6,818 Mgal/day	H-5		\$1.45508 \$/Mgal/day	H-28		0.91200	0.08800	0.00000	1.00000	H-24
Common to All Treated Water Service		3,788 Mgal/day	H-5		10.96457 \$/Mgal/day	H-28		0.61978	0.38022	0.00000	1.00000	H-24

Derivation of Municipalities Unit Volume Charge

	Treatment	Transmission
Base	$\$0.44358/\text{Mgal} \times 2,765,206 \text{ Mgal} \times 0.95615 = \$1,172,808$	$\$0.44358/\text{Mgal} \times 2,765,206 \text{ Mgal} \times 0.04385 = \$53,790$
Maximum Day (MD)	$\$51.45508/\text{Mgal} \times 6,818 \text{ Mgal} \times 0.91200 = \$319,950$	$\$51.45508/\text{Mgal} \times 6,818 \text{ Mgal} \times 0.08800 = \$30,872$
Maximum Hour (MH)	$\$10.96457/\text{Mgal} \times 3,788 \text{ Mgal} \times 0.61978 = \$25,741$	$\$10.96457/\text{Mgal} \times 3,788 \text{ Mgal} \times 0.38022 = \$15,791$

Unit Cost Development	Base	Max Day	Max Hour	Total
Volume (Mgal)	2,571,642 (c)	2,571,642	2,571,642	2,571,642
Treatment Cost (\$)	1,172,808	319,950	25,741	1,518,499
Transmission Costs (\$)	53,790	30,872	15,791	100,454
Unit Volume Charge Treatment (\$/Mgal)	0.45605	0.12441	0.01001	0.59048
Transmission (\$/Mgal)	0.02092	0.01200	0.00614	0.03906
Total (\$/Mgal)	0.47697	0.13642	0.01615	0.62954

(a) Hundred cubic feet volume units from cost of service study update are expressed in 1,000 gallon (Mgal) units in this exhibit.

(b) Represents operation expense for distribution reservoirs.

(c) $2,765,206 \text{ Mgal} \times 0.93$ (wholesale class loss factor from H-4) = 2,571,642 Mgal.

(d) Base costs are those associated with service customers to the extent required for a constant or average rate of use.

(e) Maximum Day Extra Capacity costs are those associated with serving customers' maximum day service requirements in excess of the average annual rate of use.

(f) Maximum Hour Extra Capacity costs are those associated with serving customers' maximum hour service requirements in excess of maximum day rate of use.

SULLIVAN'S ISLAND

EXHIBIT C - Page Two

**WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND SULLIVAN'S ISLAND
DEVELOPMENT OF O&M VOLUMETRIC RATE**

Derivation of O&M Volumetric Rate Charge Recognizing Usage and Demand Factors

Assume: Municipalities Class MD Demand/Average Day Flow = 1,900 (Reference: H-5)

Assume: Municipalities Class MH Demand/Average Day Flow = 2,400 (Reference: H-5)

Resulting Municipalities Class MH Demand/MD Demand = 2,400/1,900 = 1.2632

To Adjust O&M Rate for Variation in Demand Factor (DF) and Defining DF as the Ratio of Sullivan's Island Contract Capacity to Sullivan's Island Average Day Flow, Then:

$$\begin{aligned} \text{MD Adjustment Factor} &= (\text{DF} - 1) / (1,900 - 1) & \text{and} & \text{MH Adjustment Factor} = (1.26316\text{DF} - \text{DF}) / (2,400 - 1,900) \\ &= (1.1111) * (\text{DF} - 1) & & = (0.52632) * \text{DF} \end{aligned}$$

Treatment O&M Expense Unit Cost:

$$\begin{array}{l} \text{Base} \\ 0.45605 + 0.12441 * [1.1111(\text{DF} - 1)] + \end{array} \quad \begin{array}{l} \text{MD} \\ \text{MH} \end{array} \quad \begin{array}{l} \\ 0.01001 * (0.52632 * \text{DF}) = \end{array} \quad \begin{array}{l} \\ 0.31782 + 0.14351 * \text{DF} \end{array}$$

Transmission O&M Expense Unit Cost:

$$\begin{array}{l} \text{Base} \\ 0.02092 + 0.01200 * [1.1111(\text{DF} - 1)] + \end{array} \quad \begin{array}{l} \text{MD} \\ \text{MH} \end{array} \quad \begin{array}{l} \\ 0.00614 * (0.52632 * \text{DF}) = \end{array} \quad \begin{array}{l} \\ 0.00758 + 0.01657 * \text{DF} \end{array}$$

Derivation of Sullivan's Island O&M Volume Rate of Charge

Sullivan's Island Contract Capacity = 0.75 mgd

Sullivan's Island 2010 Projected Average Day Flow = 125,217 Ccf = 0.257 mgd (Reference: H-4)

Assume: Sullivan's Island Demand Factor (DF) = 0.75 / 0.257 = 2.92273, Then the Treatment and Transmission O&M Volumetric Rate Is:

Treatment O&M Expense Volumetric Rate:

$$= 0.31782 + 0.14351 * 2.92273 = 0.73725$$

Transmission O&M Expense Volumetric Rate:

$$= 0.00758 + 0.01657 * 2.92273 = 0.05601$$

Total O&M Volumetric Rate:

$$\frac{0.79326}{0.05601} \text{ \$/Mgal}$$

**SULLIVAN'S ISLAND
EXHIBIT D
WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND SULLIVAN'S ISLAND
GENERAL PLANT DEPRECIATION COMPONENT OF VOLUMETRIC RATE**

General Plant Depreciation Related to Treatment Plant, Test Year 2010
Sullivan's Island Contract Share of Treatment Plant Depreciation Expense: \$23,157 (Reference: H-9)
General Plant Portion of Depreciation: 57.8% (Reference: H-17)
General Plant Depreciation for Treatment Plant Depreciation Expense:
\$23,157 x 0.578 = \$13,385

General Plant Depreciation Related to Transmission System, Test Year 2010
Sullivan's Island Contract Share of Transmission Value (Current OC): \$1,239,587 (Reference: H-10)
General Plant Portion of Depreciation: 57.8% (Reference: H-17)
Annual Depreciation Percentage: 1.03% (Reference: H-16)
General Plant Depreciation Per Value of Transmission System OC Value:
\$1,239,587 x 57.8 x 0.0103 = \$7,379

Depreciation Rate Per 1,000 Gals.

Assume Contract Capacity of 0.75 mgd and an Average Day Flow of 0.257 mgd

Volumetric Depreciation Equation Related to Treatment Plant:
\$13,385 / (0.257 mgd x 365 days/year x 1,000) = \$0.14291

Volumetric Depreciation Equation Related to Transmission Plant:
\$7,379 / (0.257 mgd x 365 days/year x 1,000) = \$0.07878

Total General Plant Depreciation Rate:
\$0.14291/Mgal + \$0.07878/Mgal = \$0.22169

**SULLIVAN'S ISLAND
EXHIBIT E**

**WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND SULLIVAN'S ISLAND
GENERAL PLANT RETURN COMPONENT OF VOLUMETRIC RATE**

General Plant Return Related to Treatment Plant, Test Year 2010
Sullivan's Island Contract Share of Treatment Plant Value (Current RCLD): \$1,554,154 = \$2,072,206/mgd x 0.75 mgd
General Plant Value as Share of Total Value: 2.8% (Reference: H-17)
Rate of Return on RCLD Plant Value: 3.45%
General Plant Return Per Value of Treatment Plant RCLD Value:
\$1,554,154 x 0.028 x 0.035 = \$1,501

General Plant Return Related to Transmission System, Test Year 2010
Sullivan's Island Contract Share of Transmission System Value (Current RCLD): \$2,205,646 (Reference: H-10)
General Plant Value as Share of Total Value: 2.8% (Reference: H-17)
Rate of Return on RCLD Plant Value: 3.45%
General Plant Return Per Value of Transmission System RCLD Value:
\$2,205,646 x 0.028 x 0.035 = \$2,131

Return Volumetric Rate Per 1,000 Gals.

Assume Contract Capacity of 0.75 mgd and an Average Day Flow of 0.257 mgd

Volumetric Return Equation Related to Treatment Plant:
\$1,501 / (0.257 mgd x 365 days/year x 1,000) = \$0.01603 /Mgal

Volumetric Return Equation Related to Transmission Plant:
\$2,131 / (0.257 mgd x 365 days/year x 1,000) = \$0.02275 /Mgal

Total General Plant Return Rate:
\$0.01603/Mgal + \$0.02275/Mgal = \$0.03878 /Mgal

ISLE OF PALMS

EXHIBIT C - Page One

WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND EAST COOPER PURCHASED CAPACITY CONTRACT CUSTOMERS DEVELOPMENT OF O&M VOLUMETRIC RATE

Input Data from System-Wide Cost of Service Study

Operating Expense Cost Function	Municipalities Class Units of Service (a)		Reference	Unit Cost	Units	Reference	Test Year 2010 Operating Expense		Proportional Breakdown of Test Year 2010 Unit Costs		Reference
	Units	Mgal					Unit Cost	Expense	Treatment	Transmission	
Base (d) Common to All Treated Water Service Maximum Day Extra Capacity (e) Common to All Treated Water Service Maximum Hour Extra Capacity (f) Common to All Treated Water Service	2,765,206	Mgal	H-5	0.44358	\$/Mgal	H-28	0.95615	0.04385	0.00000	1.00000	H-24
	6,818	Mgal/day	H-5	51.45508	\$/Mgal/day	H-28	0.91200	0.08800	0.00000	1.00000	H-24
	3,788	Mgal/day	H-5	10.96457	\$/Mgal/day	H-28	0.61978	0.38022	0.00000	1.00000	H-24

Derivation of Municipalities Unit Volume Charge

	Treatment	Transmission
Base	$\$0.44358/\text{Mgal} \times 2,765,206 \text{ Mgal} \times 0.95615 =$	$\$1,172,808$
Maximum Day (MD)	$\$51.45508/\text{Mgal} \times 6,818 \text{ Mgal} \times 0.91200 =$	$\$319,950$
Maximum Hour (MH)	$\$10.96457/\text{Mgal} \times 3,788 \text{ Mgal} \times 0.61978 =$	$\$25,741$

Unit Cost Development	Base	Max Day	Max Hour	Total
Volume (Mgal)	2,571,642 (c)	2,571,642	2,571,642	2,571,642
Treatment Cost (\$)	1,172,808	319,950	25,741	1,518,499
Transmission Costs (\$)	53,790	30,872	15,791	100,454
Unit Volume Charge				
Treatment (\$/Mgal)	0.45605	0.12441	0.01001	0.59048
Transmission (\$/Mgal)	0.02092	0.01200	0.00614	0.03906
Total (\$/Mgal)	0.47697	0.13642	0.01615	0.62954

(a) Hundred cubic feet volume units from cost of service study update are expressed in 1,000 gallon (Mgal) units in this exhibit.
 (b) Represents operation expense for distribution reservoirs.
 (c) $2,765,206 \text{ Mgal} \times 0.93$ (wholesale class loss factor from H-4) = 2,571,642 Mgal.
 (d) Base costs are those associated with service customers to the extent required for a constant or average rate of use.
 (e) Maximum Day Extra Capacity costs are those associated with serving customers' maximum day service requirements in excess of the average annual rate of use.
 (f) Maximum Hour Extra Capacity costs are those associated with serving customers' maximum hour service requirements in excess of maximum day rate of use.

ISLE OF PALMS

EXHIBIT C - Page Two

WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND ISLE OF PALMS DEVELOPMENT OF O&M VOLUMETRIC RATE

Derivation of O&M Volumetric Rate Charge Recognizing Usage and Demand Factors

Assume: Municipalities Class MD Demand/Average Day Flow = 1,900 (Reference: H-5)

Assume: Municipalities Class MH Demand/Average Day Flow = 2,400 (Reference: H-5)

Resulting Municipalities Class MH Demand/MD Demand = 2,400/1,900 = 1.2632

To Adjust O&M Rate for Variation in Demand Factor (DF) and Defining DF as the Ratio of
Isle of Palms' Contract Capacity to Isle of Palms' Average Day Flow, Then:

$$\begin{aligned} \text{MD Adjustment Factor} &= (\text{DF} - 1) / (1,900 - 1) & \text{and} & \text{MH Adjustment Factor} = (1.2632\text{DF} - \text{DF}) / (2,400 - 1,900) \\ &= (1.1111) * (\text{DF} - 1) & & = (0.52632) * \text{DF} \end{aligned}$$

Treatment O&M Expense Unit Cost:

$$\begin{aligned} \text{Base} & & \text{MD} & & \text{MH} \\ 0.45605 + & 0.12441 * [1.1111(\text{DF} - 1)] + & 0.01001 * (0.52632 * \text{DF}) = & 0.31782 + 0.14351 * \text{DF} \end{aligned}$$

Transmission O&M Expense Unit Cost:

$$\begin{aligned} \text{Base} & & \text{MD} & & \text{MH} \\ 0.02092 + & 0.01200 * [1.1111(\text{DF} - 1)] + & 0.00614 * (0.52632 * \text{DF}) = & 0.00758 + 0.01657 * \text{DF} \end{aligned}$$

Derivation of Isle of Palms' O&M Volume Rate of Charge

Isles of Palms Contract Capacity = 1,50 mgd

Isles of Palms 2010 Projected Average Day Flow = 493,449 Ccf = 1,011 mgd (Reference: H-4)

Assume: Isle of Palms' Demand Factor (DF) = 1.50 / 1,011 = 1.48334, Then the Treatment and Transmission O&M Volumetric Rate Is:

Treatment O&M Expense Volumetric Rate:

$$= 0.31782 + 0.14351 * 1.48334 = 0.53068$$

Transmission O&M Expense Volumetric Rate:

$$= 0.00758 + 0.01657 * 1.48334 = 0.03216$$

Total O&M Volumetric Rate:

$$\frac{0.56284}{0.56284} \text{ \$/Mgal}$$

ISLE OF PALMS
EXHIBIT D
WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND ISLE OF PALMS
GENERAL PLANT DEPRECIATION COMPONENT OF VOLUMETRIC RATE

General Plant Depreciation Related to Treatment Plant, Test Year 2010
Isle of Palms Contract Share of Treatment Plant Depreciation Expense: \$46,314 (Reference: H-9)
General Plant Portion of Depreciation: 57.8% (Reference: H-17)
General Plant Depreciation for Treatment Plant Depreciation Expense:
\$46,314 x 0.578 = \$26,770

General Plant Depreciation Related to Transmission System, Test Year 2010
Isle of Palms Contract Share of Transmission Value (Current OC): \$2,479,173 (Reference: H-10)
General Plant Portion of Depreciation: 57.8% (Reference: H-17)
Annual Depreciation Percentage: 1.03% (Reference: H-16)
General Plant Depreciation Per Value of Transmission System OC Value:
\$2,479,173 x 57.8 x 0.0103 = \$14,758

Depreciation Rate Per 1,000 Gals.

Assume Contract Capacity of 1.50 mgd and an Average Day Flow of 1.011 mgd

Volumetric Depreciation Equation Related to Treatment Plant:
\$26,770 / (1.011 mgd x 365 days/year x 1,000) = \$0.07253

Volumetric Depreciation Equation Related to Transmission Plant:
\$14,758 / (1.011 mgd x 365 days/year x 1,000) = \$0.03998

Total General Plant Depreciation Rate:
\$0.07253/Mgal + \$0.03998/Mgal = \$0.11251

**ISLE OF PALMS
EXHIBIT E**

**WHOLESALE WATER SERVICE CONTRACT BETWEEN CPW AND ISLE OF PALMS
GENERAL PLANT RETURN COMPONENT OF VOLUMETRIC RATE**

General Plant Return Related to Treatment Plant, Test Year 2010
Isle of Palms Contract Share of Treatment Plant Value (Current RCLD): \$3,108,309 = \$2,072,206/mgd x 1.50 mgd
General Plant Value as Share of Total Value: 2.8% (Reference: H-17)
Rate of Return on RCLD Plant Value: 3.45%
General Plant Return Per Value of Treatment Plant RCLD Value:
\$3,108,309 x 0.028 x 0.035 = \$3,003

General Plant Return Related to Transmission System, Test Year 2010
Isle of Palms Contract Share of Transmission System Value (Current RCLD): \$4,411,292 (Reference: H-10)
General Plant Value as Share of Total Value: 2.8% (Reference: H-17)
Rate of Return on RCLD Plant Value: 3.45%
General Plant Return Per Value of Transmission System RCLD Value:
\$4,411,292 x 0.028 x 0.035 = 426130.79%

Return Volumetric Rate Per 1,000 Gals.

Assume Contract Capacity of 1.50 mgd and an Average Day Flow of 1.011 mgd

Volumetric Return Equation Related to Treatment Plant:
\$3,003 / (1.011 mgd x 365 days/year x 1,000) = \$0.00813 /Mgal

Volumetric Return Equation Related to Transmission Plant:
\$4,261 / (1.011 mgd x 365 days/year x 1,000) = \$0.01155 /Mgal

Total General Plant Return Rate:
\$0.00813/Mgal + \$0.01155/Mgal = \$0.01968 /Mgal

MEMORANDUM OF UNDERSTANDING (MOU)

Regarding Illicit Stormwater Connections

Between

City of Charleston

and

Charleston Commissioners of Public Works

This is an agreement between the City of Charleston (“City”) and the Charleston Commissioners of Public Works (“CPW”).

I. PURPOSE & SCOPE

The purpose of this Memorandum of Understanding (“MOU”) is to clearly identify the roles and responsibilities of each above-referenced party as it relates to identifying and correcting illicit connections to the stormwater system in the City of Charleston; and, whereas the City owns and operates a storm water system and CPW owns and operates a sanitary sewer/wastewater collection system. Both parties acknowledge and assert that discovered illicit connections are typically the result of a sanitary piping connection to the city storm water collection system that has been made at some point in the past (many years ago, in some cases) without the knowledge of either the City or CPW and by another unknown party, such as a property owner and/or plumbing contractor. Both parties nevertheless are hereby expressing their willingness and ability, to work together cooperatively and in the spirit of environmental protection, to identify and correct such illicit connections as may be discovered from time to time within the City.

Both parties are responsible for ensuring its activities are conducted in compliance with all applicable environmental regulations. This MOU establishes procedures to allow for the timely identification and elimination of sanitary sewer discharges into the stormwater system when the responsible party for the illicit sewerage connection is not identifiable and the connection is in the public right-of-way. This MOU will also aid in

compliance with the City's National Pollutant Discharge Elimination System ("NPDES") stormwater requirements.

II. BACKGROUND

The City has coverage under a NPDES Permit for storm water discharges from its Municipal Separate Storm Sewer System ("MS4"). The permit requires that the City effectively prohibit non-storm water discharges into the MS4 as part of a Storm Water Management Program ("SWMP"). The SWMP must meet six minimum control measures, including illicit discharge detection and elimination ("IDDE") requirements.

The City has been operating as a permitted MS4 since July 2008. NPDES and MS4 permits require municipalities to implement controls to reduce pollutant discharges to the maximum extent practicable ("MEP"). Illicit discharges suspected of being sanitary sewage must be considered a high priority for identification and elimination. Once identified, corrective actions to eliminate sanitary discharges are expected to be taken within a 30 day period under this MOU.

The City has an ordinance in place that requires homeowners and/or other property owners to eliminate illicit connections that are identified on their property. The process to bring the homeowners and property owners into compliance when illicit connections occur in the right-of-way has proven to be lengthy and not always successful when the responsibility is levied solely on the property owner.

Since 2009, the City and/or CPW have collectively identified and eliminated 4 illicit sanitary sewage connections. Based on the small number of sanitary sewage connections we have encountered, a better methodology for identifying illicit connections and performing timely corrections exists through resource sharing and an improved joint effort between both parties.

III. CITY RESPONSIBILITIES UNDER THIS MOU

The City shall undertake the following activities:

1. The City shall ensure that a dye test is performed for sanitary sewer connections made by private entities as a part of its building permit closeout process. The test shall validate that the sanitary sewer does not get connected to the storm sewer system, but if such is the case, the City shall be responsible for taking necessary actions to see that the illicit connection is eliminated.
2. As part of its IDDE program, the City shall identify any potential sources of illicit connections. If the City cannot identify the exact source of the illicit connection, the City shall narrow the potential source to one City block and provide a written or email request for assistance to CPW. The request shall include a location map, and related storm water system map.
3. Where the exact source of the illicit connection is known, the City shall request assistance from CPW to eliminate the source. This excludes illicit connections discovered as part of the City's building permit process (see III.1 above).
4. The City shall be responsible for eliminating and rerouting any unauthorized municipal storm water system connected to the CPW wastewater collection system. This responsibility excludes storm water systems serving an individual private property. The City will commence this work ten (10) working days of CPW's notification of the unauthorized connection.

IV. CPW RESPONSIBILITIES UNDER THIS MOU

Upon proper notification as referenced in Section III above, the CPW shall undertake the following activities:

1. CPW, working with the City storm water engineer or authorized representative, will utilize additional investigative tools (e.g., CCTV inspection, dye testing, smoke testing) to pinpoint the source of the illicit connection(s) where the City has narrowed down the source to one City block. CPW will commence this work within ten (10) working days of receiving a request for assistance from the City.

2. CPW, working with the City storm water engineer or authorized representative, will correct illicit connections that are found as a part of the City of Charleston IDDE program with the following exceptions:

- All work will be performed within the public right-of-way or recorded utility easement.
- CPW's estimated construction/repair cost to eliminate any single illicit connection shall not exceed \$10,000. In the event the cost exceeds this amount, CPW will expose the sanitary main and provide a tap location to meet the City's schedule for eliminating the illicit connection. The property owner(s) will be responsible for rerouting the illicit connection from the storm water system to the CPW provided tap location and coordinating the work with CPW and the City.

3. Upon receiving a request to eliminate an illicit connection from the City, CPW will provide a determination if any of the exceptions in IV.2 apply. If not, CPW shall commence the work within ten (10) working days and shall provide documentation to the City that the illicit connection has been eliminated when the work is complete.

V. IT IS MUTUALLY UNDERSTOOD AND AGREED BY AND BETWEEN THE PARTIES THAT:

1. This agreement can be modified at any time upon agreement by both parties.
2. The MOU will remain in place for a period of five years from the original effective date, unless extended by mutual consent of both parties for an additional five year term.

VI. FUNDING

This MOU does not require the reimbursement of funds between the two parties unless negotiated under a separate agreement.

VII. EFFECTIVE DATE AND SIGNATURE

This MOU shall be effective upon the signature of the City and CPW authorized officials. It shall be in force from September 1, 2011 to August 31, 2016.

Both parties indicate agreement with this MOU by their signatures.

Signatures and dates

CPW

City of Charleston

_____ Date

_____ Date

**Meeting of the Commissioners of Public Works
of the City of Charleston, South Carolina
(Charleston Water System)**

Administrative, Personnel, and Public Relations Committee
Mr. William E. Koopman, Jr., Committee Chairman
August 23, 2011

I. Call to Order

II. Approval of Minutes of Committee Meeting of July 26, 2011

III. Bill Inserts - Ms. Harrison – Exhibit C

October 2011

Lowcountry Senior Center

(Motion Requested)

IV. Community Outreach Programs – Mr. Fairey / Ms. Harrison

- 9th Annual First Day Festival; August 14, 2011
- Mayor's First Day of School Initiative; Take Your Child to School; August 16, 2011

**V. Recognition of Charleston Water System from SC Chamber of Commerce – Mr. Atkinson
Exhibit D**

Mr. Atkinson will inform the Board that Charleston Water System was named one of the 2011 Best Places to Work in South Carolina by the SC Chamber of Commerce and the Best Companies Group.

VI. Presentation of New and Amended Personnel Policies – Ms. Harrison / Mr. Atkinson

Ms. Harrison and Mr. Atkinson will present the new and recently amended Charleston Water System Personnel Policies for Board approval. *(Motion Requested)*

VII. Adjournment



Clean Water for Life

INTEROFFICE COMMUNICATION

August 19, 2011

To: Commissioners and Officers
From: Jenny Craft, Public Relations Manager
Re: Bill Inserts

In accordance with Charleston Water System's approval process for bill inserts, the following bill inserts are submitted for your approval:

October 2011

- Lowcountry Senior Center

Should you have any questions or concerns, please feel free to contact me prior to or during our Board meeting.

Attachments

This is your time

Let us help you enjoy every moment!

LOWCOUNTRY SENIOR CENTER



The Lowcountry Senior Center invites adults age 50+ to exercise, create and enjoy social activities with their peers. The Center seeks to provide holistic wellness for your mind, body and spirit for lifelong health and well-being.

The Lowcountry Senior Center is nestled in a lush environment and features a walking trail, fitness center and computer lab. We offer over 250 classes each month including:

- Line dancing
- Wine tastings
- Live performances
- Cooking classes
- Gardening classes
- Yoga
- Zumba
- Foreign policy discussions
- Lecture series by local professors
- Art classes
- Parties, dances and so much more!

Lowcountry Senior Center
865 Riverland Drive, Charleston
(843) 762-9555

LOWCOUNTRY SENIOR CENTER

www.lowcountryseniorcenter.org

Managed by Roper St. Francis Healthcare

Best Companies Group▶▶▶

1500 Paxton Street • Harrisburg, PA 17104
phone 717.909.1570 • fax 717.236.6803 • www.bestcompaniesgroup.com

August 8, 2011

Mr. John Atkinson
Director of Human Resources
Charleston Water System
103 St. Philip Street
Charleston, SC 29403

Dear Mr. Atkinson:

CONGRATULATIONS! Charleston Water System has earned the distinction of being ranked one of *SCBIZ's Best Places to Work in South Carolina!* Everyone at your company should be very proud of this accomplishment.

The rankings of the 2011 *Best Places to Work in South Carolina* will be published in the *SCBIZ* October 2011 issue. You will receive more details about that special issue from *SCBIZ*.

You will receive a letter from the South Carolina Chamber of Commerce with information regarding the recognition reception and dinner set for Tuesday, October 4 at the Embassy Suites in Columbia. If you have questions regarding the event, please contact Alexa Stillwell at (803)255-2621 or alexa.stillwell@scchamber.net. This will be an event that you and your staff will not want to miss!

In addition to earning the distinction of being named one of the *Best Places to Work in South Carolina*, your company will also receive the Employee Feedback Report. The Employee Feedback Report is a summarized analysis of your employees' responses to the 72-question internal Employee Engagement and Satisfaction Survey. It is rich with information that you can use to identify areas in which you are doing well in and where there are opportunities to improve. This report also includes the employee comments from the two open-ended questions on the employee survey, as well as state benchmarking data. The Employee Feedback Report is an extremely valuable part of the *Best Places to Work in South Carolina* process.

On behalf of *SCBIZ*, the South Carolina Chamber of Commerce, SCJobNetwork.com and Best Companies Group, we thank you for your participation and offer our sincere congratulations on this achievement.

Sincerely,



Madelon Miuccio
Program Coordinator

BEST PLACES TO WORK IN SOUTH CAROLINA



2011 WINNERS

SMALL/MEDIUM EMPLOYER CATEGORY

(15-249 U.S. EMPLOYEES)

ArborOne, ACA
C. F. Evans & Company, Inc.
Edens & Avant
Environmental Express, Inc.
Family Trust Federal Credit Union
First Community Bank
First Reliance Bank
Human Technologies, Inc.
KeenanSuggs
Palmetto Citizens Federal Credit Union
Rosenfeld Einstein
SCRA
Select Health of South Carolina
South Carolina Education Lottery
SPARC, LLC
SynTerra Corp.
VC3, Inc.

LARGE EMPLOYER CATEGORY

(250 OR MORE U.S. EMPLOYEES)

Blackbaud, Inc.
Charleston Water System
Dixon Hughes Goodman LLP
Edward Jones
Elliott Davis
Erwin-Penland LLC
Life Cycle Engineering
Mayer Electric Supply Company
Palmetto Health
SYNNEX Corporation

**Meeting of the Commissioners of Public Works
of the City of Charleston, South Carolina
(Charleston Water System)**

Regulatory and Property Committee
Mr. David E. Rivers, Committee Chairman

August 23, 2011

I. Call to Order

II. Approval of Minutes of Committee Meeting of July 26, 2011

III. Receipt of the Gold Peak Performance Award from the National Association of Clean Water Agencies (NACWA) – Mr. Fairey / Ms. Patsy Washington

Mr. Fairey will announce that our Plum Island Wastewater Treatment Facility has again been presented with the Gold Award for outstanding compliance with their National Pollutant Discharge Elimination System (NPDES) permit limits in 2010. *(Information Only)*

IV. Update on Rose Brock Park Dedication by Dorchester County – Mr. Hill / Mr. Fairey

Mr. Hill and Mr. Fairey will notify the Board regarding the upcoming dedication of Rose Brock Park near Bacons Bridge Road in Dorchester County which is located on a portion of property leased to Dorchester County by Charleston Water System. *(Information Only)*

V. Adjournment

**Meeting of the Commissioners of Public Works
of the City of Charleston, South Carolina
(Charleston Water System)**

Mr. Thomas B. Pritchard, Chairman

August 23, 2011

- I. Reconvene Commissioners' Meeting after conclusion of Committee Meetings**
- II. Approval of Minutes of Meeting of July 26, 2011**
- III. Citizens Participation/Public Comment**
- IV. Monthly Customer Service Activity and Financial Report – Ms. Ferguson / Mr. Ropp**
- V. CEOs / Staff Report**
 - A. Department Director Update Report; Accounting – Cynthia Wood, Director of Accounting
- VI. Reports of Standing Committees – Ms. Harrison**
 - A. Public Contract and Finance Committee Meeting of August 23, 2011
 - B. Administrative, Personnel and Public Relations Committee Meeting of August 23, 2011
 - C. Regulatory and Property Committee Meeting of August 23, 2011
- VII. Major Capital Project Requests - Mr. Cline**
 - A. Church, Tradd, Queen, and Legare Street Water Main Construction Project – Exhibit E

**Meeting of the Commissioners of Public Works
of the City of Charleston, South Carolina
(Charleston Water System)**

Mr. Thomas B. Pritchard, Chairman

August 23, 2011

VIII. Citizens Participation/Public Comment

IX. Executive Session

Mr. Hill may request that the Commissioners move to enter into Executive Session to discuss legal and/or contractual matters.

X. Adjournment



INTEROFFICE COMMUNICATION

TO: Mark Cline, P.E.
Capital Projects Officer

FROM: Russell Huggins, P.E. *RH*
Director of Engineering

DATE: August 16, 2011

RE: Church, Tradd, Queen and Legare Street Water Main Replacement Project
Construction Contract

At the August 2009 Commissioner's Meeting, approval was given to the engineering firm Hussey, Gay, Bell & DeYoung (HGBD) to provide design and construction administration services for the Church, Tradd and Queen Street Water Main Replacement Project. At the April 2010 Commissioner's Meeting, approval was given to amend the contract to include water main replacement in Legare Street, thus creating the Church, Tradd, Queen and Legare Street Water Main Replacement Project. The project consists of replacement of the existing 1880s unlined cast iron water mains along Church Street from Tradd Street to South Market; along Tradd Street from King Street to East Bay; along Queen Street from Franklin Street to King Street; and along Legare Street from Tradd Street to South Battery. Included in the project is approximately 6,756 linear feet of 6- and 8-inch ductile iron water main, 93 linear feet of 12-inch ductile iron water main, 18 fire hydrants, and all associated valves and appurtenances. Additionally, in consideration of the historical significance and age of the affected neighborhoods and the limited space for construction, the project includes a community outreach plan whereby CWS and HGBD have proactively engaged the communities affected by the proposed work through meetings with neighborhood associations, direct mailings and door hangers. These efforts will continue through completion of all construction activities. Additionally CWS and HGBD have closely coordinated this project through the appropriate City of Charleston Departments to address construction issues and scheduling that impact parking, traffic control, public works, tourism, emergency response, and special events such as Spoleto and the SE Wildlife Exposition. Each of the project segments are to be completed consecutively so that construction is occurring on only one street at a time.

CWS and HGBD publicly requested pre-qualification submittals from contractors interested in bidding on the project, from which five (5) contractors were pre-qualified. Four (4) bids were received and evaluated on Friday, August 12, 2011 with the lowest responsive bid submitted by Anson Construction Company in the amount of \$2,026,694. Attached for your review is a copy of the bid tabulation and a recommendation letter from HGBD. The Engineer's estimate for the project was \$2,759,134.75.

Based on their low bid and verification of the same by HGBD, it is our recommendation that the Commissioners award a construction contract to Anson Construction Company in the amount of \$2,026,694 for the Church, Tradd, Queen and Legare Street Water Main Replacement Project. Funding is available through the Water Major Capital Improvement Program.

Attachments

cc: Andy Fairey, Kan Oberoi, Larry Drolet, Linda Hans, Chad Hendrix



HUSSEY, GAY, BELL & DEYOUNG, INC.
CONSULTING ENGINEERS

August 15, 2011

Mr. Russell L. Huggins, Jr., P.E.
Director of Engineering
Charleston Water System
103 St. Philip Street
Charleston, SC 29401

**Re: Church, Tradd, Queen & Legare Street Water Main Replacement
Charleston Water System**

Dear Mr. Huggins:

Bids received on August 12, 2011 for the referenced project have been evaluated. A summary of the bids received follows:

	<u>Base Bid</u>
1. Anson Construction Company, Inc.	\$2,026,694.00
2. Tideland Utilities, Inc.	\$2,283,660.25
3. R. H. Moore Company, Inc.	\$2,363,774.75
4. Chandler Construction Services, Inc.	\$2,462,564.00

A certified *Bid Tabulation* is attached for your information.

It is recommended that the contract be awarded to the lowest responsive responsible bidder, Anson Construction Company, Inc., for the Base Bid in the amount of **\$2,026,694.00**. Upon the Commissioners issuance of a Notice of Award to Anson Construction Company, Inc. we will proceed with conforming the Contract Documents for execution.

Please call if you have any questions or concerns regarding this project.

Sincerely,
Hussey, Gay, Bell & DeYoung, Inc.


Forest D. Suggs III, P.E.

Cc: Mr. Mark Cline, P.E.
Mr. Chad Hendrix, P.E.
Mr. Larry Drolet

474 WANDO PARK BLVD., SUITE 201 (29464) • P.O. BOX 1771 • MT. PLEASANT, SOUTH CAROLINA 29465 • TELEPHONE 843.849.7500 • FACSIMILE 843.849.7502

329 Commercial Drive (31406)
P.O. Box 14247
Savannah, GA 31416-1247
Telephone: 912.354.4626
Facsimile: 912.354.6754

1219 Assembly Street (29201)
P.O. Box 7967
Columbia, SC 29202
Telephone: 803.799.0444
Facsimile: 803.799.1499

625 Green Street, N.E.
Gainesville, GA 30501
Telephone: 770.535.1133
Facsimile: 770.535.1134

CHURCH, TRADD, QUEEN AND LEGARE STREET WATER MAIN REPLACEMENT

BID TAB - August 12, 2011

CPW JOB NUMBER: 0928-02

EXTENSION: 1687-636

Item #	Description	Qty	Unit	ANSON CONSTRUCTION		TIDELAND UTILITIES		RH MOORE COMPANY		CHANDLER CONSTRUCTION	
				Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
1.	Water Main - Ductile Iron Pipe										
	a. 12-Inch, RJ - DIP	93	LF	\$ 140.00	\$ 13,020.00	\$ 63.00	\$ 5,859.00	\$ 112.00	\$ 10,416.00	\$ 86.00	\$ 7,998.00
	b. 8-Inch, RJ - DIP	3963	LF	\$ 94.00	\$ 363,122.00	\$ 52.00	\$ 200,876.00	\$ 101.00	\$ 390,163.00	\$ 70.00	\$ 270,410.00
	c. 6-Inch, RJ - DIP	2893	LF	\$ 80.00	\$ 231,440.00	\$ 49.00	\$ 141,757.00	\$ 96.00	\$ 277,728.00	\$ 66.00	\$ 190,938.00
	d. 4-Inch, RJ - DIP	13	LF	\$ 70.00	\$ 910.00	\$ 49.00	\$ 637.00	\$ 96.00	\$ 1,248.00	\$ 65.00	\$ 845.00
	e. 2-Inch, RJ - Copper	44	LF	\$ 52.00	\$ 2,288.00	\$ 41.00	\$ 1,804.00	\$ 110.00	\$ 4,840.00	\$ 79.00	\$ 3,476.00
2.	Valves										
	a. 12-Inch, Butterfly	2	EA	\$ 2,400.00	\$ 4,800.00	\$ 2,435.00	\$ 4,870.00	\$ 2,325.00	\$ 4,650.00	\$ 2,340.00	\$ 4,680.00
	b. 8-Inch, Gate	23	EA	\$ 1,000.00	\$ 23,000.00	\$ 1,265.00	\$ 29,095.00	\$ 1,125.00	\$ 25,875.00	\$ 1,115.00	\$ 25,645.00
	c. 6-Inch, Gate	35	EA	\$ 700.00	\$ 24,500.00	\$ 965.00	\$ 34,825.00	\$ 850.00	\$ 29,750.00	\$ 855.00	\$ 29,825.00
	d. 4-Inch, Gate	1	EA	\$ 600.00	\$ 600.00	\$ 895.00	\$ 895.00	\$ 700.00	\$ 700.00	\$ 765.00	\$ 765.00
	e. 2-Inch, Corp Stop	3	EA	\$ 300.00	\$ 900.00	\$ 525.00	\$ 1,575.00	\$ 450.00	\$ 1,350.00	\$ 410.00	\$ 1,230.00
	f. Ductile Iron Fittings	10	TON	\$ 100.00	\$ 1,000.00	\$ 10,215.00	\$ 102,150.00	\$ 3,600.00	\$ 36,000.00	\$ 10,650.00	\$ 106,500.00
3.	Connect New Water Mains to Existing (labor only)										
	a. Church St. at Tradd St.	2	EA	\$ 4,000.00	\$ 8,000.00	\$ 3,250.00	\$ 6,500.00	\$ 5,400.00	\$ 10,800.00	\$ 4,975.00	\$ 9,950.00
	b. Church St. at Elliott St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,625.00	\$ 4,625.00
	c. Church St. at St. Michael's Alley	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,325.00	\$ 4,325.00
	d. Church St. at Broad St.	2	EA	\$ 4,000.00	\$ 8,000.00	\$ 3,250.00	\$ 6,500.00	\$ 5,400.00	\$ 10,800.00	\$ 4,325.00	\$ 8,650.00
	e. Church St. at Queen St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,625.00	\$ 4,625.00
	f. Church St. at Cumberland St.	2	EA	\$ 4,000.00	\$ 8,000.00	\$ 3,250.00	\$ 6,500.00	\$ 5,400.00	\$ 10,800.00	\$ 4,625.00	\$ 9,250.00
	g. Church St. at Lingard St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,325.00	\$ 4,325.00
	h. Church St. at S. Market St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,325.00	\$ 4,325.00
	i. Tradd St. at Meeting St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,325.00	\$ 4,325.00
	j. Tradd St. at Bedons Alley	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,325.00	\$ 4,325.00
	k. Tradd St. at East Bay St.	1	EA	\$ 12,000.00	\$ 12,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 7,250.00	\$ 7,250.00
	l. Queen St. at Franklin St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,625.00	\$ 4,625.00
	m. Queen St. at Logan St.	2	EA	\$ 4,000.00	\$ 8,000.00	\$ 3,250.00	\$ 6,500.00	\$ 5,400.00	\$ 10,800.00	\$ 3,825.00	\$ 7,650.00
	n. Queen St. at Legare St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,250.00	\$ 4,250.00
	o. Queen St. at Arundise St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,325.00	\$ 4,325.00
	p. Queen St. at King St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,325.00	\$ 4,325.00
	q. Legare St. at South Battery	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 6,625.00	\$ 6,625.00
	r. Legare St. at Lamboll St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,325.00	\$ 4,325.00
	s. Legare St. at Gibbs St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 4,325.00	\$ 4,325.00
	t. Legare St. at Tradd St.	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 3,250.00	\$ 3,250.00	\$ 5,400.00	\$ 5,400.00	\$ 6,625.00	\$ 6,625.00
5.	Water Services - Disconnect and Reconnect 3/4" to 2" Existing Service to New Water Main (labor and materials)	301	EA	\$ 600.00	\$ 180,600.00	\$ 815.00	\$ 245,315.00	\$ 235.00	\$ 70,735.00	\$ 845.00	\$ 254,345.00
6.	Copper Service Line										
	a. 2-Inch	32	LF	\$ 36.00	\$ 1,152.00	\$ 70.00	\$ 2,240.00	\$ 140.00	\$ 4,480.00	\$ 125.00	\$ 4,000.00
	b. 1-Inch	1306	LF	\$ 32.00	\$ 41,792.00	\$ 27.00	\$ 35,262.00	\$ 98.00	\$ 127,988.00	\$ 103.00	\$ 134,518.00
7.	Remove & Replace Meter Boxes	91	EA	\$ 480.00	\$ 43,680.00	\$ 1,025.00	\$ 93,275.00	\$ 780.00	\$ 70,980.00	\$ 963.00	\$ 87,633.00
8.	Abandon Existing Water Main										
	a. Valve Box Demolition	25	EA	\$ 270.00	\$ 6,750.00	\$ 405.00	\$ 10,125.00	\$ 200.00	\$ 5,000.00	\$ 175.00	\$ 4,375.00
	b. End Cap Installation	51	EA	\$ 362.00	\$ 18,462.00	\$ 815.00	\$ 41,565.00	\$ 350.00	\$ 17,850.00	\$ 850.00	\$ 43,350.00
9.	Hydrants										
	a. Remove Existing and Cap	18	EA	\$ 600.00	\$ 10,800.00	\$ 815.00	\$ 14,670.00	\$ 750.00	\$ 13,500.00	\$ 815.00	\$ 14,670.00
	b. New Hydrant Assembly (no valve)	18	EA	\$ 2,200.00	\$ 39,600.00	\$ 2,335.00	\$ 42,030.00	\$ 2,800.00	\$ 50,400.00	\$ 2,335.00	\$ 42,030.00
10.	Traffic Control System										
	a. Church St.	1	LS	\$ 4,012.00	\$ 4,012.00	\$ 19,280.00	\$ 19,280.00	\$ 12,000.00	\$ 12,000.00	\$ 10,810.00	\$ 10,810.00
	b. Tradd St.	1	LS	\$ 4,000.00	\$ 4,000.00	\$ 10,100.00	\$ 10,100.00	\$ 3,000.00	\$ 3,000.00	\$ 5,900.00	\$ 5,900.00
	c. Queen St.	1	LS	\$ 4,000.00	\$ 4,000.00	\$ 12,550.00	\$ 12,550.00	\$ 2,100.00	\$ 2,100.00	\$ 7,125.00	\$ 7,125.00
	d. Legare St.	1	LS	\$ 4,000.00	\$ 4,000.00	\$ 5,000.00	\$ 5,000.00	\$ 2,100.00	\$ 2,100.00	\$ 6,525.00	\$ 6,525.00
11.	Erosion & Sediment Control										
	a. Church St.	1	LS	\$ 4,000.00	\$ 4,000.00	\$ 2,000.00	\$ 2,000.00	\$ 5,100.00	\$ 5,100.00	\$ 4,500.00	\$ 4,500.00
	b. Tradd St.	1	LS	\$ 4,000.00	\$ 4,000.00	\$ 2,000.00	\$ 2,000.00	\$ 1,750.00	\$ 1,750.00	\$ 1,950.00	\$ 1,950.00
	c. Queen St.	1	LS	\$ 4,000.00	\$ 4,000.00	\$ 2,000.00	\$ 2,000.00	\$ 2,425.00	\$ 2,425.00	\$ 2,500.00	\$ 2,500.00
	d. Legare St.	1	LS	\$ 4,000.00	\$ 4,000.00	\$ 2,000.00	\$ 2,000.00	\$ 2,400.00	\$ 2,400.00	\$ 2,250.00	\$ 2,250.00
12.	Remove & Replace Pavement										
	a. Remove Existing Pavement/Install Flowable Fill	3038	SY	\$ 30.00	\$ 91,140.00	\$ 81.00	\$ 246,078.00	\$ 55.00	\$ 167,080.00	\$ 60.00	\$ 182,280.00
	b. Asphalt Patch - 4 Ft. Wide	6862	LF	\$ 12.00	\$ 82,344.00	\$ 22.00	\$ 150,964.00	\$ 20.00	\$ 137,240.00	\$ 8.00	\$ 54,896.00
	c. Milling Asphalt Pavement - Full Width	19313	SY	\$ 4.00	\$ 77,252.00	\$ 4.50	\$ 86,908.50	\$ 4.50	\$ 86,908.50	\$ 4.00	\$ 77,252.00
	d. Asphalt Overlay - Full Width	19313	SY	\$ 10.00	\$ 193,130.00	\$ 10.75	\$ 207,614.75	\$ 10.25	\$ 197,958.25	\$ 12.00	\$ 231,756.00
	e. Brick Walk - Queen St. at King St.	1	LS	\$ 8,000.00	\$ 8,000.00	\$ 8,350.00	\$ 8,350.00	\$ 5,500.00	\$ 5,500.00	\$ 3,015.00	\$ 3,015.00
13.	Pavement Markings										
	a. Temporary - Fast Dry Paint	1	LS	\$ 4,000.00	\$ 4,000.00	\$ 2,500.00	\$ 2,500.00	\$ 7,500.00	\$ 7,500.00	\$ 4,980.00	\$ 4,980.00
	b. Permanent - Thermo 125 mil.	1	LS	\$ 8,000.00	\$ 8,000.00	\$ 2,500.00	\$ 2,500.00	\$ 39,000.00	\$ 39,000.00	\$ 50,006.00	\$ 50,006.00
14.	Testing & Disinfection										
	a. Church St.	1	LS	\$ 6,000.00	\$ 6,000.00	\$ 4,500.00	\$ 4,500.00	\$ 6,750.00	\$ 6,750.00	\$ 2,728.00	\$ 2,728.00
	b. Tradd St.	1	LS	\$ 6,000.00	\$ 6,000.00	\$ 4,500.00	\$ 4,500.00	\$ 3,750.00	\$ 3,750.00	\$ 1,250.00	\$ 1,250.00
	c. Queen St.	1	LS	\$ 6,000.00	\$ 6,000.00	\$ 4,500.00	\$ 4,500.00	\$ 4,400.00	\$ 4,400.00	\$ 1,712.00	\$ 1,712.00
	d. Legare St.	1	LS	\$ 6,000.00	\$ 6,000.00	\$ 4,500.00	\$ 4,500.00	\$ 4,200.00	\$ 4,200.00	\$ 1,216.00	\$ 1,216.00
15.	As-built Drawings & Valve Cards	1	LS	\$ 10,000.00	\$ 10,000.00	\$ 7,590.00	\$ 7,590.00	\$ 25,000.00	\$ 25,000.00	\$ 10,550.00	\$ 10,550.00
*** ADDITIONAL WORK IF ORDERED BY THE ENGINEER ***											
16.	Remove & Replace Granite Curb										
	a. Straight	200	LF	\$ 68.00	\$ 13,600.00	\$ 93.50	\$ 18,700.00	\$ 60.00	\$ 12,000.00	\$ 84.00	\$ 16,800.00
	b. Radial	200	LF	\$ 98.00	\$ 19,600.00	\$ 125.00	\$ 25,000.00	\$ 78.00	\$ 15,600.00	\$ 108.00	\$ 21,600.00
17.	Remove & Replace Conc. Sidewalk - 4-Inch Thick	1000	SF	\$ 14.00	\$ 14,000.00	\$ 8.00	\$ 8,000.00	\$ 8.00	\$ 8,000.00	\$ 13.20	\$ 13,200.00
18.	Remove & Replace Blue Stone Sidewalk	1000	SF	\$ 16.00	\$ 16,000.00	\$ 40.00	\$ 40,000.00	\$ 34.00	\$ 34,000.00	\$ 26.25	\$ 26,250.00
19.	Drainage Structure - Adjust	15	EA	\$ 580.00	\$ 8,700.00	\$ 350.00	\$ 5,250.00	\$ 350.00	\$ 5,250.00	\$ 1,100.00	\$ 16,500.00
20.	Curb Inlet Frame & Cover - Adjust	20	EA	\$ 550.00	\$ 11,000.00	\$ 350.00	\$ 7,000.00	\$ 380.00	\$ 7,600.00	\$ 835.00	\$ 16,700.00
21.	Point Repairs - Existing Roof Drains and for Sanitary Sewer Service Laterals (6- or 4-inch)	30	EA	\$ 900.00	\$ 27,000.00	\$ 950.00	\$ 28,500.00	\$ 360.00	\$ 10,800.00	\$ 2,400.00	\$ 72,000.00
22.	Flowable Fill	80	CY	\$ 60.00	\$ 4,800.00	\$ 90.00	\$ 7,200.00	\$ 100.00	\$ 8,000.00	\$ 65.00	\$ 5,200.00
23.	Cash Allowances (for verification of work)										
	a. Soils, Concrete & Asphalt Testing	1	LS	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00
	b. Construction Surveying	1	LS	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.0	