

# Agenda

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

April 26, 2011, 9:00 a.m.

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**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

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

**Mr. Thomas B. Pritchard, Chairman**

April 26, 2011

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

# PUBLIC CONTRACT AND FINANCE COMMITTEE

**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

April 26, 2011

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**I. Call to Order**

**II. Approval of Minutes of Committee Meeting of March 22, 2011**

**III. Review of Quarterly Financial Data – Ms. Karla Beard**

Ms. Beard will present additional detailed data for the Commissioners concerning CWS's financial data in the previous calendar quarter. *(Information Only)*

**IV. Update on the Closing of the Direct Purchase Option for the 2006 Revenue Bonds –  
Mr. Ropp / Mr. Hill**

**V. Update on the Town of Lincolville Water Supply Contract – Mr. Ropp / Mr. Hill**

**VI. Adjournment**

ADMINISTRATIVE, PERSONNEL  
AND  
PUBLIC RELATIONS COMMITTEE

**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  
April 26, 2011

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**I. Call to Order**

**II. Approval of Minutes of Committee Meeting of March 22, 2011**

**III. Bill Inserts - Ms. Craft – Exhibit A**

**June 2011**

- Charleston Water System's *Water Wise* Customer Newsletter

*(Motion Requested)*

**IV. Community Outreach Programs – Ms. Craft**

- National Drinking Water Week Activities; May 1-7, 2011
- Earth Day Festival; April 30, 2011
- Habitat for Humanity Community Service Day; April 7 and April 14, 2011

**V. Update on the Review of Charleston Water System's Personnel Policy Manual Revisions – Mr. Hill / Ms. Harrison**

**VI. Report on the Town of Hollywood; Mungin Road Water Service Project – Lydia Owens, New Development Program Manager**

**VII. Adjournment**



*Clean Water for Life*

**INTEROFFICE COMMUNICATION**

April 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 insert is submitted for your approval:

**June 2011**

- Charleston Water System's *Water Wise* Customer Newsletter

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

Attachments

## e-Bill is here! Get your bill electronically

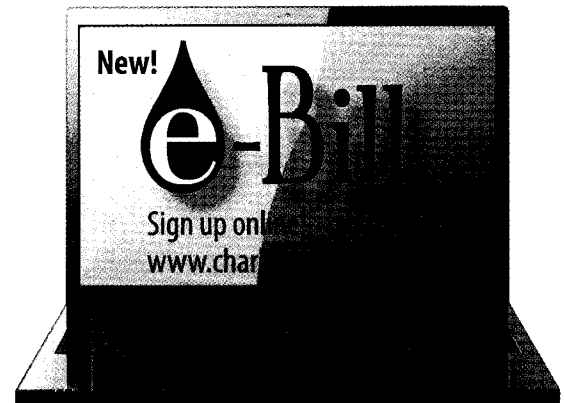
### Sign up online

You've been asking for it and now it's here—the option to get your monthly water bill electronically.

e-Bill is the newest feature in our online account management system. To sign up, visit our web site and log into your Charleston Water System account. When you choose e-Bill as your billing preference, we'll send you an e-mail each month instead of a paper bill.

You can switch back to paper billing at any time by logging into your account and changing your billing preference. You can also view and print past bills.

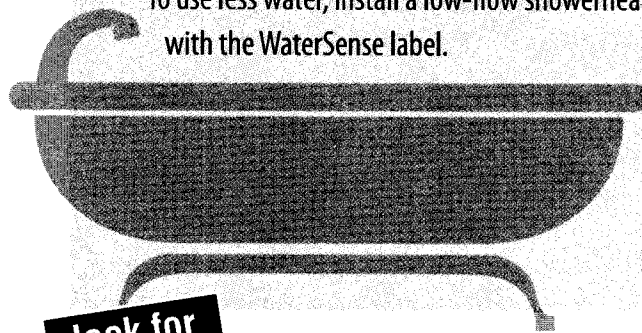
If you're not already registered to access your Charleston Water System account online, visit our web site to register. You'll just need your most recent water bill and an email address.



### Did you know...?

It takes about 70 gallons of water to fill up a bath tub. A five-minute shower uses 10 to 25 gallons, depending on the flow rate of your showerhead.

To use less water, install a low-flow showerhead with the WaterSense label.



For more water-saving tips, visit [www.epa.gov/watersense](http://www.epa.gov/watersense).

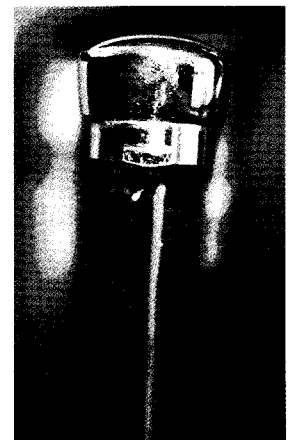
## The facts about filters

Charleston Water System's tap water is highly treated and continually tested to make sure it's safe to drink, but some people prefer the taste of filtered water.

Many faucet-mounted filters and filtration pitchers use carbon to remove compounds that affect the taste and smell of water, but there are many other types of home treatment systems designed to remove different things.

Generally, a home filtration system isn't necessary unless you have a compromised immune system and are directed by your doctor to take certain precautions.

A good resource for information about filters is the National Sanitation Foundation (NSF), a non-profit organization that tests and certifies consumer products, including home water treatment products. To learn more, visit [www.nsf.org/consumer/water/](http://www.nsf.org/consumer/water/) or call 1-800-673-8010.



## Water Whys

### *How is water treated?*

Water goes through multiple treatment processes at our Hanahan Water Treatment Plant to make it safe to drink.

First, water from the Bushy Park Reservoir and Edisto River arrives at the plant through deep tunnels.

Then, it's pumped into big mixing basins, where a coagulant is added so that small particles in the water clump together and sink to the bottom of large sedimentation basins.

Next, the water flows through filters that remove tiny particles, including bacteria and other naturally occurring microorganisms that can cause illness.

Finally, a trace amount of fluoride is added to promote dental health, and the water is disinfected with minute amounts of chlorine and ammonia to keep it clean as it travels through pipes to homes and businesses.

For a more detailed description of the treatment process, visit our web site.

*Have a question? Send it to [info@charlestoncpw.com](mailto:info@charlestoncpw.com).*



In this sedimentation basin, particles settle out of the water and are removed. The water then flows to the next step in the treatment process: filtration.

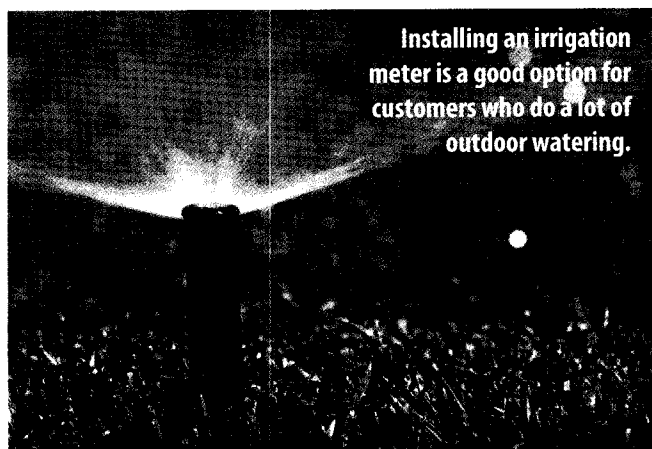
## Do you have an irrigation system?

### Ask about installing an irrigation water meter

If you have an irrigation system for your home or business, or are considering installing one, you may be able to lower your monthly water bill by getting a separate irrigation account—a water meter that's exclusively for outdoor water use.

You won't pay sewer charges for the irrigation account, which can add up to significant savings over time. There is an up-front cost to install and connect the irrigation meter, and the payback period on that cost depends on how much water you use and where you live.

To find out if an irrigation meter is right for you, visit our web site or call our Customer Service Department at (843) 727-6800 (from the menu, press 1, then 3).



## Looking for a speaker for your school or civic group?

Contact us! We can send someone to speak to your group about a variety of water topics—everything from the history of public water service in the Lowcountry to wastewater treatment and water conservation.

We can customize a presentation to suit your group's needs. To schedule a speaker, email [info@charlestoncpw.com](mailto:info@charlestoncpw.com) or call (843) 727-6856.

# PROPERTY COMMITTEE

**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

April 26, 2011

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**I. Call to Order**

**II. Approval of Minutes of Committee Meeting of March 22, 2011**

**III. Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA) Monitoring Results – Mr. Fairey**

Mr. Fairey will present recent Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA) analytical results conducted by the SC Department of Health & Environmental Control. *(Information Only)*

**IV. Update on SC DHEC Sanitary Survey – Mr. Fairey**

Mr. Fairey will provide an update on the SC DHEC Sanitary Survey of the water treatment plant and distribution system that was conducted on April 19-21, 2011

**V. Adjournment**

# COMMISSIONERS' MEETING

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

**Mr. Thomas B. Pritchard, Chairman**

April 26, 2011

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- I. Reconvene Commissioners' Meeting after conclusion of Committee Meetings**
- II. Approval of Minutes of Meeting of March 22, 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; Finance; Brenda Goldstein, Assistant Director of Financial Services
  - B. Update on Wastewater Use and Rate Resolution Manual and the Water Rules and Regulations Manual - Mr. Hill
- VI. Reports of Standing Committees**
  - A. Public Contract and Finance Committee Meeting of April 26, 2011
  - B. Administrative, Personnel and Public Relations Committee Meeting of April 26, 2011
  - C. Regulatory and Property Committee Meeting of April 26, 2011
- VII. Major Capital Project Requests – Mr. Cline**
  - A. Wastewater Collection System Rehabilitation Phase 1 – Pump Stations S and WW Force Mains Construction Contract – Exhibit B
  - B. Engineering Services for Wastewater Pump Station 77 Rehabilitation Basis of Design Report – Exhibit C

**Meeting of the Commissioners of Public Works  
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April 26, 2011

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**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 contractual matters.

**X. Adjournment**



## INTEROFFICE COMMUNICATION

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

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

DATE: April 18, 2011

RE: Wastewater Collection System Rehabilitation Phase 1  
PS S and WW Force Main Replacement Project Construction Contract

At a previous Commissioner's Meeting, approval was given to the engineering firm HDR Engineering, Inc., (HDR) to provide design and construction administration services for the Wastewater Main Rehabilitation Project. Later renamed Wastewater Collection System Rehabilitation Phase 1, the original project scope consisted of force main rehabilitation/replacement for six pump stations. Due to design complexities and permitting issues, the project was separated into three parts so that bidding could proceed as each part was completed. Replacement of the force mains of Pump Stations C and CC was approved by the Board in May 2009 and in November 2009 the Board approved replacement of the force main for Pump Station 56. Further evaluation of the Pump Station R force main revealed an alternative solution that precluded the need for its replacement. The third and final project to be bid for construction involves replacement of the force mains of Pump Stations S and WW. Pump Station S, located near the intersection of William Kennerty and Boone Hall Road, and Pump Station WW, located between Highways 61 and 17 at the foot of the downtown Ashley River Bridge, both presented complex engineering and construction challenges due to limited right-of-way, heavy traffic volumes, and coordination with RoadWise plans. Because of these complexities and delays in acquiring necessary easements, engineering staff decided to bid the force main replacement for Pump Stations S and WW as a separate project. Included in the Pump Station S portion of the project is approximately 1755 linear feet of 10-inch DIP and PVC sewer force main installed by open-cut. A segment of the Pump Station S force main beneath the Ashley River Road and Tobias Gadson intersection was installed under an emergency contract last summer to avoid County road improvements. Included in the Pump Station WW portion of the project is approximately 1980 linear feet of 10-inch DIP and PVC sewer force main installed by a combination of open-cut, horizontal direction drill, and jack and bore.

CWS and HDR publicly requested pre-qualification submittals from contractors interested in constructing the project, from which eight (8) contractors were prequalified. Seven (7) bids were received and evaluated on Thursday, April 14, 2011 with the lowest responsive bid submitted by Green Construction Company in the amount of \$457,159. Attached for your review is a copy of the bid tabulation and a recommendation letter from HDR. The Engineer's estimate for the project was \$643,457.

Based on their low bid and verification of the same by HDR, it is our recommendation that the Commissioners award a construction contract to Green Construction Company in the amount of \$457,159 for the Wastewater Collection System Rehabilitation Phase 1 - Pump Stations S and WW Force Main Replacement Project. Funding is available through the Wastewater Major Capital Improvement Program.

## Attachments:

cc: Andy Fairey  
Baker Mordecai, P.E.  
Larry Drolet  
Linda Hans  
Greg Hider, P.E.



ONE COMPANY | *Many Solutions*®

April 18, 2011

Mr. Gregory A. Hider, P.E.  
Charleston Water Systems  
Design and Construction Department Engineer  
103 St. Phillip Street  
Charleston, SC 29402

RE: Recommendation of Award  
Wastewater Collection System Rehabilitation Phase I - Pump Stations WW and S  
CPW Job No. 0966-0001, Bid No. 1639

Dear Mr. Hider:

Enclosed are bid tabulations for the seven bids received on April 14, 2011 for the above referenced project. HDR Engineering recommends that the Contract be awarded to the lowest responsive bidder, which is Green Construction Company of Summerville, Inc. in the amount of \$457,159.00.

Sincerely,

HDR ENGINEERING INC.

Walter R. Fletcher, P.E.  
Project Engineer



Item #	Description	Qty	Unit	Unit Price	Total Price
1.	Mobilization	1	LS	\$15,000.00	\$15,000.00
2.	10-inch R/D Ductile Iron Pipe	620	LF	\$93.00	\$57,660.00
3.	Ductile Iron Fittings	0.8	Ton	\$15,925.00	\$12,740.00
4.	10-inch PVC Pipe	500	LF	\$63.15	\$31,575.00
5.	10-inch R/J PVC Pipe	520	LF	\$113.00	\$58,760.00
6.	Horizontal Directional Drill	270	LF	\$577.00	\$155,790.00
7.	20-inch Bore and Jack Steel Casing Pipe	2	EA	\$5,900.00	\$11,800.00
8.	Air Release Valve	35	CY	\$25.00	\$875.00
9.	Imported Backfill	40	CY	\$59.00	\$2,360.00
10.	Crushed Stone Stabilization	80	CY	\$235.00	\$18,800.00
11.	Asphalt Pavement Removal and Replacement (Flowable Fill)	80	SY	\$59.00	\$4,720.00
12.	Pavement Overlay	450	SY	\$23.00	\$10,350.00
13.	Te-in to PS WW	1	LS	\$2,865.00	\$2,865.00
14.	Te-in to Receiving Manhole	1	LS	\$20,150.00	\$20,150.00
15.	Traffic Control	1	LS	\$10,925.00	\$10,925.00
16.	Erosion Control	1	LS	\$6,480.00	\$6,480.00
17.	Abandon Existing FM	195	LF	\$172.00	\$33,540.00
18.	Sod	100	SY	\$10.00	\$1,000.00
19.	Sidewalk	20	SY	\$42.00	\$840.00
20.	Contingency	1	LS	\$32,000.00	\$32,000.00
21.	Total - Items 1 through 21 Inclusive				\$525,632.00

Item #	Description	Qty	Unit	Unit Price	Total Price
1.	Mobilization	1	LS	\$14,000.00	\$14,000.00
2.	10-inch R/D Ductile Iron Pipe	620	LF	\$77.00	\$47,740.00
3.	Ductile Iron Fittings	0.8	Ton	\$14,375.00	\$11,500.00
4.	10-inch PVC Pipe	500	LF	\$32.00	\$16,000.00
5.	10-inch R/J PVC Pipe	520	LF	\$114.00	\$59,280.00
6.	Horizontal Directional Drill	270	LF	\$114.00	\$59,280.00
7.	20-inch Bore and Jack Steel Casing Pipe	2	EA	\$616.00	\$1,232.00
8.	Air Release Valve	35	CY	\$5,608.00	\$196,280.00
9.	Imported Backfill	40	CY	\$10.00	\$400.00
10.	Crushed Stone Stabilization	80	CY	\$25.00	\$2,000.00
11.	Asphalt Pavement Removal and Replacement (Flowable Fill)	80	SY	\$59.00	\$4,720.00
12.	Pavement Overlay	450	SY	\$181.00	\$81,450.00
13.	Te-in to PS WW	1	LS	\$23.30	\$23.30
14.	Te-in to Receiving Manhole	1	LS	\$41.00	\$41.00
15.	Traffic Control	1	LS	\$15,819.00	\$15,819.00
16.	Erosion Control	1	LS	\$3,600.00	\$3,600.00
17.	Abandon Existing FM	195	LF	\$785.00	\$152,875.00
18.	Sod	100	SY	\$10.00	\$1,000.00
19.	Sidewalk	20	SY	\$33.00	\$660.00
20.	Contingency	1	LS	\$32,000.00	\$32,000.00
21.	Total - Items 1 through 21 Inclusive				\$489,590.00

Item #	Description	Qty	Unit	Unit Price	Total Price
1.	Mobilization	1	LS	\$6,000.00	\$6,000.00
2.	10-inch R/D Ductile Iron Pipe	620	LF	\$76.00	\$47,120.00
3.	Ductile Iron Fittings	0.8	Ton	\$13,100.00	\$10,480.00
4.	10-inch PVC Pipe	500	LF	\$28.00	\$14,000.00
5.	10-inch R/J PVC Pipe	520	LF	\$84.00	\$43,680.00
6.	Horizontal Directional Drill	270	LF	\$220.00	\$59,400.00
7.	20-inch Bore and Jack Steel Casing Pipe	2	EA	\$6,600.00	\$13,200.00
8.	Air Release Valve	35	CY	\$47.00	\$1,645.00
9.	Imported Backfill	40	CY	\$10.00	\$400.00
10.	Crushed Stone Stabilization	80	CY	\$146.00	\$11,680.00
11.	Asphalt Pavement Removal and Replacement (Flowable Fill)	80	SY	\$89.00	\$7,120.00
12.	Pavement Overlay	450	SY	\$32.00	\$14,400.00
13.	Te-in to PS WW	1	LS	\$4,670.00	\$4,670.00
14.	Te-in to Receiving Manhole	1	LS	\$2,100.00	\$2,100.00
15.	Traffic Control	1	LS	\$8,900.00	\$8,900.00
16.	Erosion Control	1	LS	\$2,100.00	\$2,100.00
17.	Abandon Existing FM	195	LF	\$3,100.00	\$6,045.00
18.	Sod	100	SY	\$3.50	\$350.00
19.	Sidewalk	20	SY	\$48.00	\$960.00
20.	Contingency	1	LS	\$32,000.00	\$32,000.00
21.	Total - Items 1 through 21 Inclusive				\$306,053.50

Item #	Description	Qty	Unit	Unit Price	Total Price
1.	Mobilization	1	LS	\$7,800.00	\$7,800.00
2.	10-inch Ductile Iron Pipe	20	LF	\$83.00	\$1,660.00
3.	10-inch R/D Ductile Iron Pipe	300	LF	\$55.00	\$16,500.00
4.	Ductile Iron Fittings	0.4	Ton	\$18,000.00	\$7,200.00
5.	10-inch R/J PVC Pipe	100	LF	\$67.00	\$6,700.00
6.	10-inch PVC Pipe	1300	LF	\$61.25	\$79,625.00
7.	Imported Backfill	10	CY	\$29.00	\$290.00
8.	Crushed Stone Stabilization	30	CY	\$59.00	\$1,770.00
9.	Asphalt Pavement Removal and Replacement (Flowable Fill)	90	SY	\$234.00	\$21,060.00
10.	Asphalt Pavement Removal and Replacement (Class II Backfill)	450	SY	\$59.00	\$26,550.00
11.	Te-in to PS S	1	LS	\$9,250.00	\$9,250.00
12.	Te-in to Receiving Manhole	1	LS	\$9,200.00	\$9,200.00
13.	Traffic Control	1	LS	\$11,900.00	\$11,900.00
14.	Erosion Control	1	LS	\$5,000.00	\$5,000.00
15.	Abandon Existing FM	1800	LF	\$12.00	\$21,600.00
16.	Sod	15	SY	\$10.00	\$150.00
17.	Sidewalk	20	SY	\$40.00	\$800.00
18.	Contingency	1	LS	\$30,000.00	\$30,000.00
19.	Total - Items 1 through 18 Inclusive				\$289,055.00
20.	Total for both Sites				\$794,687.00

Item #	Description	Qty	Unit	Unit Price	Total Price
1.	Mobilization	1	LS	\$5,500.00	\$5,500.00
2.	10-inch Ductile Iron Pipe	20	LF	\$99.00	\$1,980.00
3.	10-inch R/D Ductile Iron Pipe	300	LF	\$73.00	\$21,900.00
4.	Ductile Iron Fittings	0.4	Ton	\$14,375.00	\$5,750.00
5.	10-inch R/J PVC Pipe	100	LF	\$52.00	\$5,200.00
6.	10-inch PVC Pipe	1300	LF	\$34.00	\$44,200.00
7.	Imported Backfill	10	CY	\$34.00	\$340.00
8.	Crushed Stone Stabilization	30	CY	\$29.00	\$870.00
9.	Asphalt Pavement Removal and Replacement (Flowable Fill)	90	SY	\$1,770.00	\$159,300.00
10.	Asphalt Pavement Removal and Replacement (Class II Backfill)	450	SY	\$26.550.00	\$11,962.50
11.	Te-in to PS S	1	LS	\$180.00	\$180.00
12.	Te-in to Receiving Manhole	1	LS	\$41.00	\$41.00
13.	Traffic Control	1	LS	\$5,000.00	\$5,000.00
14.	Erosion Control	1	LS	\$5,000.00	\$5,000.00
15.	Abandon Existing FM	1800	LF	\$4.900.00	\$8,820.00
16.	Sod	15	SY	\$15.00	\$225.00
17.	Sidewalk	20	SY	\$10.00	\$200.00
18.	Contingency	1	LS	\$30,000.00	\$30,000.00
19.	Total - Items 1 through 18 Inclusive				\$198,998.00
20.	Total for both Sites				\$667,680.00

Item #	Description	Qty	Unit	Unit Price	Total Price
1.	Mobilization	1	LS	\$6,000.00	\$6,000.00
2.	10-inch Ductile Iron Pipe	20	LF	\$75.00	\$1,500.00
3.	10-inch R/D Ductile Iron Pipe	300	LF	\$77.00	\$23,100.00
4.	Ductile Iron Fittings	0.4	Ton	\$16,500.00	\$6,600.00
5.	10-inch R/J PVC Pipe	100	LF	\$54.00	\$5,400.00
6.	10-inch PVC Pipe	1300	LF	\$30.00	\$39,000.00
7.	Imported Backfill	10	CY	\$73.00	\$730.00
8.	Crushed Stone Stabilization	30	CY	\$73.00	\$2,190.00
9.	Asphalt Pavement Removal and Replacement (Flowable Fill)	90	SY	\$10.00	\$900.00
10.	Asphalt Pavement Removal and Replacement (Class II Backfill)	450	SY	\$126.00	\$56,700.00
11.	Te-in to PS S	1	LS	\$8,500.00	\$8,500.00
12.	Te-in to Receiving Manhole	1	LS	\$7,500.00	\$7,500.00
13.	Traffic Control	1	LS	\$5,000.00	\$5,000.00
14.	Erosion Control	1	LS	\$3,200.00	\$3,200.00
15.	Abandon Existing FM	1800	LF	\$3.50	\$6,300.00
16.	Sod	15	SY	\$10.00	\$150.00
17.	Sidewalk	20	SY	\$50.00	\$1,000.00
18.	Contingency	1	LS	\$30,000.00	\$30,000.00
19.	Total - Items 1 through 18 Inclusive				\$178,120.00
20.	Total for both Sites				\$484,983.50

Bid Bond	Power of Attorney	Signatory	Addenda Acknowledged	Bid Bond	Power of Attorney	Signatory	Addenda Acknowledged	Bid Bond	Power of Attorney	Signatory	Addenda Acknowledged
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Highlighted call denotes math error  
 Chandler Construction Services, Inc.  
 The unit price for item 15 on Pump Station S was listed in the bid as \$10.00 but the total for that item was based on a unit price of \$1.00. Per CWS specifications, the unit price governs when math errors occur, therefore the total was adjusted based on the unit price of \$1.00.


I hereby certify that this is a true and correct indication of bids received on the referenced project.  
 Walter R. Peabody, P.E., FCR Engineering, Inc.

*W. Peabody*  
 Date

## INTEROFFICE COMMUNICATION



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

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

DATE: April 18, 2011

RE: Pump Station 77 Rehabilitation Project BODR  
Engineering Services Contract

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Charleston Water System's (CWS) Pump Station 77 (PS 77) pumps more than 8 million gallons per day of wastewater flow from the Citadel Mall area, the Hwy 61 and US 17 corridors, Johns Island, and the Hollywood and Ravenel collection systems. Additionally, it will be the receiving pump station for flow from the proposed Red Top Regional Pump Station scheduled for completion in late 2013. Located approximately 0.4 miles due west of the intersection of the West Ashley Greenway and Stinson Drive, this station is a critical component of the wastewater collection system, pumping the aforementioned wastewater flow all the way to the West Ashley Tunnel where the flow is then carried by gravity to the Plum Island Wastewater Treatment Plant. Flow to the pump station is received via force mains that enter a splitter box where the flows are combined then distributed to two wetwells. Due to the high degree of flow agitation at the splitter box and the relative high strength of the entering wastewater, the splitter box and the wetwells have been subject to significant hydrogen sulfide exposure. Over the past 25 years of service the high amounts of hydrogen sulfide gas and resulting sulfuric acid have caused significant concrete deterioration. While the splitter box has suffered significant structural decay, the primary concern is the deterioration found in the wetwells, which share a common wall with the pump station building. In addition to the structural concerns, the existing wetwells have a limited hydraulic capacity, which could result in operational challenges as future flows increase along with growth within the service area. To effectively address these concerns, CWS engineering staff publicly advertised a Request for Qualifications (RFQ) from engineering firms interested in preparing a Basis of Design Report (BODR) for the Pump Station 77 Rehabilitation Project. Included in the BODR will be a detailed structural and hydraulic analysis, discussion and comparison of repair/replacement options, cost estimates, and a final repair/replacement recommendation.

In response to the RFQ, CWS received Statements of Qualifications (SOQ) from seven firms. A four member panel composed of CWS Engineering and Construction staff evaluated and scored each SOQ based on the following criteria: Prior experience, Staff, Project Management, Local Experience and Proximity to the Work Location, and References. Results of the evaluation identified HDR Engineering (HDR) as the firm receiving the highest overall score. Based on the scoring results, CWS engineering staff met with HDR and requested an engineering services proposal to provide a BODR for the Pump Station 77 Rehabilitation Project. Attached for your review is an engineering services proposal from HDR that outlines the necessary tasks and associated fees. The total cost of their engineering services is \$71,880. If approved, the scope of services will be incorporated into our standard engineering services agreement format.

Therefore, it is our recommendation that the Commissioners award a contract to HDR in the amount of \$71,880 to prepare a Basis of Design Report for the Pump Station 77 Rehabilitation Project. Funding is available through the Wastewater Major Capital Improvement Program.

Attachments

cc: Andy Fairey  
Linda Hans  
Larry Drolet  
Chad Hendrix, P.E.

**Charleston Water System  
Pump Station 77 Rehabilitation  
Scope of Service for Basis of Design Report  
4/14/11**

HDR Engineering Inc. of the Carolinas (ENGINEER) has been requested by Charleston Water System (OWNER) to provide a Basis of Design Report for the Pump Station 77 Rehabilitation Project (PROJECT). The project includes a structural and hydraulic analysis of the existing splitter box and wetwell, rehabilitation/replacement options with recommendations, preliminary construction cost estimates for the options and proposed project schedules. Evaluation of the condition of the existing pumps, piping, electrical systems and building are not included in this project. The specific tasks in this Scope are presented below.

1. Review Existing Data: ENGINEER will review existing Record Drawings, the existing wastewater model, existing and future flows and other pertinent data to the structural and hydraulic condition of the pump station.
2. Kick-off Meeting and Site Visit: ENGINEER and OWNER will meet to discuss the scope of the project, operational concerns, the wastewater model, and other pertinent items and then attend a site visit to look at potential options for the rehabilitation plan.
3. Structural Analysis: ENGINEER will perform a structural evaluation of the existing splitter box and wetwell to determine potential options for rehabilitation. This will include a petrographic analysis to determine the condition of the existing concrete. The petrographic analysis will be performed by a subconsultant and will include the following:
  - a. Two cores in the existing splitter box.
  - b. Three cores in the existing wetwell. One core will be performed on the outer wall of the wetwell and two cores will be performed from the interior of the existing pump room. The core in the outer wall will require an exterior pit to be dug for the coring equipment.

The results of the petrographic analysis will be reviewed for potential rehabilitation options of the existing structure.

4. Hydraulic Analysis: ENGINEER will perform a hydraulic analysis of the system, including the addition of future flow from the 20-inch Red Top force main. This analysis will include evaluating the capacity of the splitter box and wetwell for future flows, developing options to minimize turbulence and evaluating the existing pumps for future flows. The pump evaluation will utilize the existing Infoworks model that the OWNER has developed. To complete the hydraulic analysis, the OWNER will provide current and future flows for PS 77 and the downstream pump stations that are manifolded into the PS 77 force main. In addition, the OWNER will perform a drawdown test on PS 77 for each pump operating alone and both pumping together to confirm existing pumping rates.

5. Develop Rehabilitation/Replacement Options: Based on the results of the structural and hydraulic analysis, three options for rehabilitation and/or replacement will be developed. These options will take into account the need for maintaining operation of the pump station during construction. A figure will be developed for each option. For any new proposed structures a site plan will be developed using GIS. A comparison of each of the options will be made and a final recommendation provided.
6. Develop Construction Cost Estimates: Conceptual level construction cost estimates will be prepared for each of the options developed in Task 5.
7. Develop Project Schedule: Schedules for each of the options in Task 5 will be developed. The schedules will include design, permitting, bidding and construction. The schedules will be developed in Microsoft Project.
8. Prepare Draft and Final Report: A draft report summarizing the structural analysis, hydraulic analysis, rehabilitation/replacement options, preliminary construction cost estimates, project schedules and recommendations will be prepared and submitted to the OWNER for review. A review meeting between the ENGINEER and OWNER will be held and comments from the meeting incorporated into a final report.
9. Project Cost Estimate: The fee for this Scope of Service is \$71,880 and is summarized in Table 1 in Attachment A. Services will be provided on a Lump Sum basis.
10. Project Schedule: The proposed schedule for the PROJECT is presented in Attachment B.

**ATTACHMENT A**

**Table 1 - Fee Summary - PS 77 Rehabilitation**

Review Existing Data, Kick-off Meeting and Site Visit	\$7,053
Structural Analysis	\$7,647
Petrographic Analysis (subconsultant)	\$10,700
Hydraulic Analysis	\$15,824
Develop Rehabilitation/Replacement Options	\$12,241
Construction Cost Estimate/Schedules	\$4,282
Draft, Final Report and Review Meeting	<u>\$14,134</u>
	<b>\$71,880</b>

**ATTACHMENT B**

Attachment B  
Charleston Water System  
Pump Station 77 Rehabilitation Project

