

City of League City  
City Manager Purchase Authorization  
Contract Coversheet



Purchasing Policy Sec 2-102 (A) -- Purchases exceeding \$10,000 require the Assistant City Manager's authorization signature before a PO/Contract PO can be issued or services rendered. Purchases exceeding \$25,000 require City Manager approval before a PO/Contract PO can be issued or services rendered. Purchases exceeding \$50,000 require City Council approval before a PO/Contract PO can be issued or services rendered.

Dept. Contact Jacques Gilbert Date 03/29/2018

Dept. Project Management Budget Amount (annual) \$                     

Awarded Vendor CDM Smith Inc.

Contract Terms                      years/months Beg. Date 06/16/2011 End Date 12/31/2018

Contract Amt: Prior Amt \$ 1,918,300.00 Current Contract Total \$ 1,963,300.00

Description of Purchase Approval of a \$45,000.00 contract amendment for the purchase of design services during the construction phase of the project.

Type of Purchase ☐ New Contract ☐ Renewal – No. of Renewals Left                     

☐ ITB / RFP / RFQ #                     

Bid Due Date                      No. of Bids Received                     

☐ Quotes - No. of Quotes Received                     

☒ Professional Service

☐ Items or services through a Co-Op

☐ Co-op Name                      Contract No.                     

Exp. Date                     

☐ Sole / Single Source (requires a signed letter from the vendor)

☐ Emergency Purchase

Attachments Included:

☐ Quote(s) / Awarded Bid Response

☐ Signed Sole Source Letter

☒ Contract / Agreement (signed by Vendor)

☐ Bid Documents – (Specifications, Exhibits, etc.)

☐ Co-op Contract Information

If over \$50,000:

☐ Data Sheet – Item No.                     

Agenda Date                     

☐ Resolution - #                     

☐ Form 1295

Ingie Steelman  
Dept. Director

4/23/18  
Date

[Signature]  
City Attorney

4/23/18  
Date

Alfred C. Turner  
Purchasing Manager

4/23/18  
Date





## MEMORANDUM

To: John Baumgartner  
City Manager

From: Jacques Gilbert  
Project Manager

Date: 3/29/2018

Re: Contract Amendment – (WT1109) 36-Inch Waterline SH3 BPS to SSH Plant

Please find the attached contract amendment for the 36-Inch Waterline SH3 BPS to SSH Water Plant project for \$45,000.00.

The amendment is for engineering support services during the construction phase of project.

The agreement amount falls within the City Manager level approval limits established in the City's procurement policy. Per Kristin Clark, funding will come from the following account:

WT1109-PLAN DESIG-DESIGN-2011 RB

If this meets your approval, please indicate by signing and dating below and executing the agreement.

Thank you

  
\_\_\_\_\_  
Kristin Clark, Grants/CIP Administrator

4/23/18  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Fritz Kuebler, Assistant Director Project Management

4/23/18  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Angie Steelman, Director Project Management & Budget

4/25/18  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
John Baumgartner, City Manager

\_\_\_\_\_  
Date



**SECOND AMENDMENT TO AGREEMENT BETWEEN  
THE CITY OF LEAGUE CITY AND CDM SMITH INC.**

§  
§  
§

This Second Amendment ("Amendment") is entered into between the City of League City ("City") and CDM Smith Inc. ("Contractor") on the date set forth below.

**RECITALS**

WHEREAS, the City and Contractor entered into an Agreement ("Agreement") on or about June 16, 2011 whereby Contractor agreed to provide professional design services related to the 36-Inch Waterline from SH3 Booster Pump Station to South Shore Harbor Water Plant (WT1109) Project (the "Project"); and the Agreement is incorporated into this Amendment by reference; and

WHEREAS, the City and Contractor wish to amend the Agreement to reallocate funding and to increase the scope of Contractor's services in accordance with Contractor's letters dated October 12, 2017, and January 19, 2018, respectively, which are hereby incorporated into this Amendment; and

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto hereby agree to the following terms:

**TERMS**

1. The above-listed recitals are true and correct and hereby incorporated into this Amendment.
2. The Contractor is authorized to proceed with the contract funding reallocation of unused additional funding for Design Basic Services in the amount of \$150,000.00 as identified in the letter dated October 12, 2017, which is attached and incorporated as Exhibit A.
3. The Contractor is authorized to proceed with the additional design services as identified in the proposal dated January 19, 2018, which is attached and incorporated as Exhibit A for an amount not to exceed \$45,000.00.
4. The below listed chart shows the summary of fees for this Project:

**Summary of Fees:**

Original Agreement:	\$1,600,000.00
First Amendment:	\$318,300.00
Second Amendment:	\$45,000.00

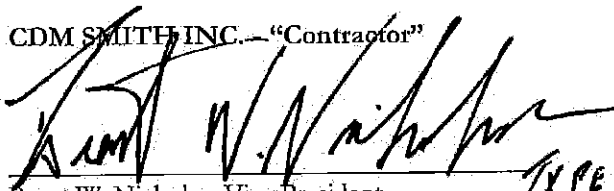
**Total Amended Contract Amount:     \$1,963,300.00**

5. Except as expressly provided in this Amendment, all other terms, conditions and provisions of the Agreement shall continue in full force and effect as provided therein.




Executed this 28<sup>th</sup> day of MARCH, 2018.

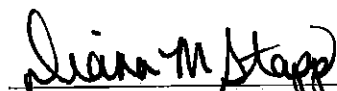
CDM SMITH INC. - "Contractor"

 3-28-18  
Brent W. Nicholas, Vice President  
TYPE 87349

CITY OF LEAGUE CITY - "City"

  
John Baumgartner, City Manager

Attest:

 4-25-18  
Diana Stapp, City Secretary

Approved as to Form:

  
Office of the City Attorney



## **Exhibit A**

### **Scope of Services/Description of Products** (7 number of pages, including this page)

See attached letter/proposal.





11490 Westheimer Road, Suite 700  
Houston, Texas 77077  
tel: 713-423-7300

October 12, 2017

Mr. John Lothrop  
City of League City  
305 East Main Street  
League City, Texas 77573

Subject: City of League City, Texas  
36-inch Pipeline Project  
**Request for Re-Allocation of Additional Services Funding and Authorization**  
**REV 1.0**  
CDM Smith P/N: 2070-83930

Dear Mr. Lothrop:

Based on our phone call conducted on Friday October 6, 2017, CDM Smith has revised our previous funding August 11, 2017 letter request for re-allocation of Additional Services Funding and Authorization. CDM Smith is requesting reallocation of unused Resident Project Representation Inspection Additional Services to Design Basic Services to cover additional scope identified in completion of the design of the 36-inch pipeline project. We are requesting a contract funding reallocation authorization of additional funding for Basic Services in the amount of **\$150,000.00** in support of the 36-inch Pipeline Project currently nearing design completion. Specifically, we are requesting this amount in support of the following added scope services:

1. Addition of new scope at the State Highway 3 Booster Pump Station (SH3-BPS) for replacing the existing 42-inch electric motor operated valve on the emergency bypass line including miscellaneous vault improvements and development of construction sequencing. \$8,200.00
2. Continuation of CenterPoint (CNP) negotiations on the 36-inch pipeline easement and submissions for approval. This process has been going on for over several years with numerous drawing submissions and re-reviews for approval to address continuing evolution of new CNP review comments on each re-submission. Attached to this letter is a timeline of working with CNP relative to the design and approval of the 36-inch pipeline. This delay is also going to require re-renewal of previously other permitting agency reviews and 3rd party private utility reviews let alone new position being taken by the Parks and Wildlife Department which previously approved our design. \$25,150.00
3. Additional coordination, review meetings, and contract document updates associated with USFWS, TPWD, and the City Parks Board on pipeline alignment adjustments and







Mr. John Lothrop  
October 12, 2017  
Page 2

environmental mitigation requirements related to the recently updated approved park habitation restoration plan in coordination with the park grant funding requirements. \$59,100.00

4. Resubmittal to TXDOT, resubmittal to the City of Webster, and confirmation of all Letters of No Objection with private utilities given the new revised schedule. This also includes an update to the construction cost estimate. \$11,500.00
5. Provision of partial Construction Management and Resident Project Representative services during construction. Since original proposal assumed mostly open cut construction, present design of mostly horizontal directional drilling provides ability to scale back field inspection services to a monthly inspection concurrent with the monthly progress meetings. This also includes preparing agendas and meeting minutes for running of the Monthly Construction Progress Meeting. \$46,050.00

We request this reallocation be approved on a lump sum basis through a memorandum of understanding based on previous City input and commentary. As a reminder, Engineering Basic Services are not presently in our contract and would need to be supplemented at a later date. The CDM Smith team is committed to continuing our high level of support for the benefit of City. We suggest a meeting at your earliest possible convenience to further discuss. Should you have any questions or need further information, please call me or Jason Venier at 713-423-7300.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. W. Nicholas', written over a horizontal line.

Brent W. Nicholas, P.E.  
Vice President  
CDM Smith Inc.  
TBPE Firm Registration No. F-3043

Attachments:

1. Engineering Fee Proposal Breakdown

cc: Jason Venier, Amber Batson, Kim Chanslor, File – CDM Smith





Item	Description / Task	Estimated Man-Hours										Subtotal (hrs)	Subtotal (cost \$)	Subs (cost \$)	Subs (cost+10%)	Other Direct Costs	Total Fee (hrs + Sub Markup of 10% + ODC)
		Principal (hrs)	Technical Director (hrs)	Project Manager (hrs)	Engr. Grade 7/8 (hrs)	Engr. Grade 5/8 (hrs)	Engr. Grade 3/4 (hrs)	Designer (hrs)	Cost Estimator (hrs)	Sr. Word Processor (hrs)	Contract Admin (hrs)	Admin Assistant (hrs)					
		\$ 200.00	\$ 175.00	\$ 115.00	\$ 175.00	\$ 150.00	\$ 135.00	\$ 120.00	\$ 150.00	\$ 100.00	\$ 100.00	\$ 80.00					
<b>ADDITIONAL SERVICES REQUIRED</b>																	
<b>TASK 1 NEW 42-INCH BREV AT SH3-BPS (FOR 36-INCH PIPELINE PROJECT INCLUSION)</b>																	
1	Project Management and QA/QC	1		1								1	3	\$ 500.00	\$ -	\$ -	\$ 500.00
2	Modification to SH3-BPS Site Plan Drawing				4			4					8	\$ 1,200.00	\$ -	\$ -	1,200.00
3	Addition of a new Drawing for 42-inch BPS replacement	1		2	4	8		12					27	\$ 3,600.00	\$ -	\$ -	3,600.00
3	Additional Technical Specification and Construction Sequencing	1		2	4					4			11	\$ 1,700.00	\$ -	\$ -	1,700.00
4	Cost Estimate Development								3				3	\$ 500.00	\$ -	\$ -	500.00
5	Project Task Expenses (Shipping, Supplies, Repro, etc.)													\$ -	\$ -	\$ 400.00	400.00
	<b>Subtotal</b>	3	0	5	12	8	0	16	3	4	0	1	52	\$ 7,800.00	\$ -	\$ 400.00	\$ 8,200.00
<b>TASK 2 CENTERPOINT PLAN REVIEW DELAYS - 36-INCH PIPELINE</b>																	
1	Project Management			1							1		3	\$ 400.00	\$ -	\$ -	400.00
2	Fee for CenterPoint Review of the 36-inch Drawings												0	\$ -	\$ 1,500.00	\$ -	1,500.00
3	Additional Review Revisions beyond 2 CNP reviews	2		15			24	28				4	74	\$ 10,000.00	\$ -	\$ -	10,000.00
4	Repeal of other Permitting Approvals due to extended delay from CenterPoint	2		10	20		32			4	4	4	76	\$ 11,100.00	\$ -	\$ -	11,100.00
	Project Task Expenses (Shipping, Supplies, Repro, etc.)													\$ -	\$ -	\$ 2,000.00	2,000.00
	<b>Subtotal</b>	4	0	27	20	0	57	28	0	4	5	8	153	\$ 21,500.00	\$ 1,500.00	\$ 2,000.00	\$ 25,150.00
<b>TASK 3 USFWS/TPWD PARK SITE REQUIREMENTS</b>																	
1	Project Management			40							4		44	\$ 7,000.00	\$ -	\$ -	7,000.00
2	Meetings and Preparation of Review Documents		4	8			40						52	\$ 7,500.00	\$ -	\$ -	7,500.00
3	Alignment Updates		8	12	24		40	15	4				104	\$ 15,500.00	\$ 15,000.00	\$ -	\$ 32,000.00
4	Contract Document Requirements Including Mitigation Plan			16	4		40			8			68	\$ 9,600.00	\$ -	\$ -	9,600.00
	Project Task Expenses (Travel, Repro, Shipping, etc.)												0	\$ -	\$ -	\$ 3,000.00	3,000.00
	<b>Subtotal</b>	4	0	27	20	0	57	28	0	4	5	8	153	\$ 21,500.00	\$ 1,500.00	\$ 2,000.00	\$ 25,150.00
<b>TASK 4 TXDOT/WEBSTER Resubmittal Confirm LONOs. Update Cost Estimate</b>																	
1	Resubmit Webster			1			4	4		4		2	15	\$ 1,200.00	\$ -	\$ -	1,200.00
2	Resubmit TXDOT			1	2		4	4				2	13	\$ 1,600.00	\$ -	\$ -	1,600.00
3	Confirm LONOs with Private Utilities			1			4			2		2	9	\$ 1,100.00	\$ -	\$ -	1,100.00
4	Update Cost Estimate			1					8				9	\$ 1,400.00	\$ -	\$ -	1,400.00
5	Revised front end documents	2	2	6			12					2	38	\$ 5,100.00	\$ -	\$ -	5,100.00
6	Project Task Expenses (Shipping, Supplies, Repro, etc.)													\$ -	\$ -	\$ 300.00	300.00
	<b>Subtotal</b>	2	2	12	2	0	24	8	8	6	0	8	84	\$ 11,200.00	\$ -	\$ 300.00	\$ 11,500.00



City of League City, Texas  
State Highway 3 BPS - 36-inch Pipeline Project  
CDM Smith PIN 2070-83930  
Engineering Fee Proposal for Additional Services - REV 1.0



Item	Description / Task	Estimated Man-Hours										Subtotal (hrs)	Subtotal (cost \$)	Subs (cost \$)	Subs (cost+10%)	Other Direct Costs	Total Fee (hrs + Sub Markup of 10% + ODC)
		Principal (hrs)	Technical Director(s) (hrs)	Project Manager (hrs)	Engr. Grade 7/8 (hrs)	Engr. Grade 5/6 (hrs)	Engr. Grade 3/4 (hrs)	Designer (hrs)	Cost Estimator (hrs)	St. Word Processor (hrs)	Contract Admin S/E (hrs)	Admin Assistant (hrs)					
		\$ 200.00	\$ 175.00	\$ 165.00	\$ 175.00	\$ 150.00	\$ 135.00	\$ 120.00	\$ 150.00	\$ 100.00	\$ 100.00	\$ 50.00					
<b>TASK 5 PARTIAL CONSTRUCTION MANAGEMENT / RPR</b>																	
1	Project Management	4	8	16						12	12	2	54	\$ 7,500.00	\$ -	\$ -	\$ 7,500.00
2	Project Kickoff and Monthly Progress Meeting Attendance & Minutes (Total of 12 meetings including concurrent brief inspection)			64		24		4		24		3	139	\$ 20,700.00	\$ -	\$ -	\$ 211,650.00
3	Schedule of Values and Schedule Review			8					16			2	26	\$ 3,900.00	\$ -	\$ -	\$ 3,900.00
4	Pay Estimate Review			8			12					6	26	\$ 3,500.00	\$ -	\$ -	\$ 3,500.00
5	Substantial Completion			12		8				8		4	32	\$ 4,400.00	\$ -	\$ -	\$ 4,400.00
6	Final Completion			12		4				8		2	26	\$ 3,600.00	\$ -	\$ -	\$ 3,600.00
7	Project Task Expenses (Shipping, Supplies, Repro, etc.)													\$ -	\$ -	\$ 2,000.00	\$ 2,000.00
	<b>Subtotal</b>	4	8	140	0	36	12	4	16	52	12	19	903	\$ 43,600.00	\$ -	\$ 2,450.00	\$ 46,050.00
<b>TOTAL 36-INCH PIPELINE - CONTRACT FUNDING RE-ALLOCATION REQUEST</b>														<b>\$ 150,000.00</b>			





11490 Westheimer Road, Suite 700  
Houston, Texas 77077  
tel: 713-423-7300

January 19, 2018

Mr. Jody Hooks  
City of League City  
305 East Main Street  
League City, Texas 77573

Subject: City of League City, Texas  
36-inch Pipeline Project  
**Request for Design Services during Construction Funding Supplement REV 1.0**  
CDM Smith P/N: 2070-83930

Dear Mr. Hooks:

Based on our phone call conducted on Thursday January 18, 2018, CDM Smith has revised our previous October 12, 2017 Design Services Construction Supplement fee request from \$62,000 to \$45,000. Please see the attached services breakdown to be paid on a lump sum basis. Please note that this is for very limited basic engineering support services during construction where meeting attendance would be scheduled primarily via teleconference phone call and Skype presentation meetings in order to meet City budget limitations.

Should you have any questions or need further information, please call me or Jason Venier at 713-423-7300.

Sincerely,

Brent W. Nicholas, P.E.  
Vice President  
CDM Smith Inc.  
TBPE Firm Registration No. F-3043

Attachments:

1. Engineering Fee Proposal Breakdown

cc: Jason Venier, Amber Batson, Kim Chanslor, File – CDM Smith



Item	Description / Task	Estimate Man-Hours											Subtotal (hrs)	Subtotal (cost \$)	Subs (cost \$)	Subs (cost %)	Other Direct Costs	Total Fee (hrs + Sub Markup of 10% + ODC)
		Principal (hrs)	Technical Director(s) (hrs)	Project Manager (hrs)	Engr. Grade 7/16 (hrs)	Engr. Grade 5/8 (hrs)	Engr. Grade 3/4 (hrs)	Designer (hrs)	Cost Estimator (hrs)	Sr. Ward Processor (hrs)	Contract Admin 5/6 (hrs)	Admin Assistant (hrs)						
		\$ 200.00	\$ -173.00	\$ -153.00	\$ -175.00	\$ -150.00	\$ -135.00	\$ -120.00	\$ -150.00	\$ -100.00	\$ -100.00	\$ -50.00						
<b>ADDITIONAL SERVICES REQUIRED</b>																		
<b>TASK \$ ENGINEERING SERVICES DURING CONSTRUCTION</b>																		
1	Project Management and QA/QC	2	2								4		8	\$ 1,200.00		\$ -	\$ -	\$ 1,200.00
2	Preconstruction Conference				4			2		2		2	10	\$ 1,400.00		\$ -	\$ -	\$ 1,400.00
3	Review on Construction Schedule and advise Owner if realistic.												0	\$ -		\$ -	\$ -	\$ -
4	Analyze Contractor's schedule, activity sequence, and construction procedures and ability to keep existing facilities in operation. Re-reviewed quarterly.		4		4					5			14	\$ 2,000.00		\$ -	\$ -	\$ 2,000.00
5	Make periodic site visits to the construction site to observe progress of work. Consult with Owner on any problems anticipated. (2 Visits by Plant Engineer or Pipeline Specialist).		4		12					4			20	\$ 3,200.00		\$ -	\$ -	\$ 3,200.00
6	Shop Drawing Review (assume 30 submittals)	1	4		16		32			4		32	68	\$ 11,300.00		\$ -	\$ -	\$ 11,300.00
7	Interpret construction documents when requested by Owner or the Contractor.	1	4		8		8			2			23	\$ 3,600.00		\$ -	\$ -	\$ 3,600.00
8	Provide documentation and submit CHANGE ORDERS, including applications for additional time.	1			8					4			13	\$ 2,000.00		\$ -	\$ -	\$ 2,000.00
9	Prepare RECORD DOCUMENTS	1	2		4		12	36		4			59	\$ 7,600.00		\$ -	\$ -	\$ 7,600.00
10	Perform Submittal Completion walkthrough with the design team and develop list.		4		8		12			6			30	\$ 4,400.00		\$ -	\$ -	\$ 4,400.00
11	Perform Final Completion walkthrough with the design team and develop list. Provide written letters of acceptance and close out paperwork.				10					6			16	\$ 2,400.00		\$ -	\$ -	\$ 2,400.00
12	Response to RFIs		4		8		8			5			26	\$ 3,600.00		\$ -	\$ -	\$ 3,600.00
13	Project Task Expenses (Shipping, Supplies, Reprint, etc.)													\$ -		\$ -	\$ 2,100.00	\$ 2,100.00
	<b>Subtotal</b>	6	26	0	62	0	72	36	0	44	4	34	308	\$ 42,900.00	\$ -	\$ -	\$ 2,100.00	\$ 45,000.00





# City of League City, TX

300 West Walker  
League City TX 77573

## Text File

File Number: 14-0055

Agenda Date: 2/11/2014

Version: 1

Status: Consent Agenda

In Control: Public Works

File Type: Agenda Item

Agenda Number: 11A.

### Title

Consider and take action on a request from CDM-Smith Inc. for authorization of additional funding for Basic Services and Additional Services associated with the design of the WT1108 State Highway 3 Pump Station Project and the WT1109 36" WL SH 3 to SSH Booster Station Project (Acting City Manager)

### ..Background:

Approval of this item will authorize CDM-Smith's request for \$318,300 of additional funds for services associated with the design of the State Highway 3 Pump Station Project and the 36" waterline SH 3 to SSH Booster Station Project.

On June 14, 2011, Council approved a single professional services contract with CDM-Smith, Inc. for design services associated with the two CIP projects referenced above. With respect to the WT1108 SH 3 Pump Station portion of the Project, CDM-Smith is requesting additional funding as follows:

- (1) \$9,200 for services associated with the development of landscaping and irrigation plans to meet City of Webster criteria for a commercial/retail facility;
- (2) \$51,000 for extended design discussions with and additional plan revision submittals to the City of Houston (COH) to the end that additional COH desired flow meters and backflow prevention devices were able to be deleted from the plans at an estimated construction savings of \$300,000; and
- (3) \$16,300 for modifications to record drawings and coordination with a third party City consultant to remove the back-up generator from the Project so that it could be funded by residual Round 1 CDBG Ike recovery grant funds, resulting in a \$583,000 savings in the Project's overall construction cost.

With respect to the WT1109 36" WL SH 3 to SSH Booster Station SH 3 Pump Station portion of the Project, CDM-Smith is requesting additional funding as follows:

- (1) \$68,100 for design revisions due to pipeline alignment route revisions from the proposed Genco Canal route to the proposed City park properties route;
- (2) \$18,100 to re-run the transient surge analysis for the alignment following the City park properties route;
- (3) \$155,600 for out-sourced boundary and topographical surveying services following the City park properties route.

CDM-Smith's request (with support documentation) is attached. Funding for the \$318,300 contract increase is proposed as follows:

- (1) \$52,440 remaining under Purchase Order 120178 in Account # 124-3121-744-92-30 for the contract with GeoSurv for professional boundary and topographic surveying services following the Genco Canal route will be transferred to this contract and the contract with



11A

GeoSurv terminated.

- (2) The remaining \$265,860 needed to fund this request is available from 2011 Revenue Bond Fund 124.

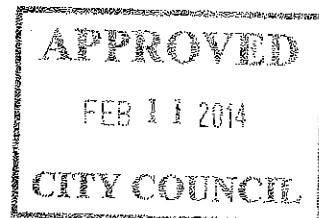
If approved, CDM-Smith's Basic Services fees for the combined projects will increase from \$965,000 to \$1,100,400 and fees for all services (Basic/Special/Additional) will increase from \$1,600,000 to \$1,918,300. The construction contract for the WT1108 SH3 Booster project was awarded in the amount of \$18.4 million. The most current estimated construction cost for the WT 36" WL project is \$10.4 million, for a combined total of \$28.8 million. The increased Basic Services amount of \$1,100,400 is 3.8 percent of the combined projects construction costs/estimated construction costs.

FUNDING

☐ NOT APPLICABLE

☒ Funds are available from 2011 Revenue Bond Fund 124

☐ Requires Budget Amendment to transfer from Account # \_\_\_\_\_ to  
Account # \_\_\_\_\_







3050 Post Oak Blvd., Suite 300  
Houston, Texas 77056  
tel: 713-423-7300  
fax: 713-840-0173

January 30, 2014

Mr. John Lothrop  
City of League City  
305 East Main Street  
League City, Texas 77573

Subject: City of League City, Texas  
State Highway 3 Booster Pump Station Improvements Project  
**Request for Additional Services Funding and Authorization**  
CDM Smith P/N: 2070-83930

Dear Mr. Lothrop:

CDM Smith is requesting authorization of additional funding for both Basic Services and Additional Services in support of the State Highway Booster Pump Station and 36-inch Pipeline Improvements Project. There are several tasks in which additional compensation is being requested due to reasons outside of our control. The additional compensation is for work beyond our current scope of services and acknowledged by the City as necessary to complete the projects.

Several of these out of scope services have already been completed in good faith without delay for the benefit of City and the project in terms of controlling cost claims. A summary of costs already incurred and estimated at completion are presented in the Table below. Please note the costs shown below represent the entire Design Team's efforts.

No.	Task/Description	Spent to Date	Anticipated Additional Amount	Total Out of Scope Services Amount
1	<b>Landscape/Irrigation Design</b> City of Webster classified the facility as commercial/retail with regard to landscape & irrigation requirements necessitating the preparation of landscaping and irrigation construction documents and specifications.	\$9,200	\$0	\$9,200
2	<b>36-inch Pipeline Design Revisions</b> Design proceeded to a 30% level when pipeline alignment changed due to route revisions necessitated by other parties (Genco and less expensive alternatives). <b>Revised alignment capital cost savings exceed \$1.3M.</b>	\$0.00	\$68,100	\$68,100







Mr. John Lothrop  
January 30, 2014  
Page 2

No.	Task/Description	Spent to Date	Anticipated Additional Amount	Total Out of Scope Services Amount
3	<b>City of Houston – Flow Metering Station Design Changes</b> Significant design revisions required due to protracted review and input by the City of Houston reviewing authority. Resulted in a significant number of drawing changes to accommodate the COH demands.	\$51,000	\$0.00	\$51,000
4	<b>Generator Set Removal From Drawings</b> City elected to remove the standby generator scope from the SH3 Improvements project in an effort to capitalize on grant funding. Requires revision to construction drawings, additional modifications to record drawings and coordination with 3 <sup>rd</sup> party City consultant team resulting in a \$583,000 savings to the construction cost.	\$16,300	\$0.00	\$16,300
5	<b>Transient Surge Analysis – 36-inch Piping Revised Alignment</b> Due to new alignment change need to re-run the transient surge analysis with the new alignment. Revised alignment capital cost savings exceed \$1.3M.	\$0.00	\$18,100	\$18,100
6	<b>Additional Survey Based on Revised Pipeline Route</b> Request for contract supplement to provide for survey additional services for revised pipeline route. Revised alignment capital cost savings exceed \$1.3M.	\$0.00	\$155,600	\$155,600
	<b>Total</b>	\$76,500	\$241,800	<b>\$318,300</b>

As previously discussed, the Design Team plans on continued execution of these out of scope tasks with the mutual understanding we will be compensated accordingly. A detailed summary/justification for each task is described below. A detailed breakdown of the level of effort is shown in **Attachment A**.

### **Architectural and Landscape/Irrigation Requirements**

As you are aware, the SH 3 Booster Pump Station is physically located in the City of Webster. During the course of final design and permitting process, the City of Webster determined the facility would be classified as commercial/retail and would therefore be required to comply with the relevant ordinances which included commercial landscaping with irrigation systems to support the landscaping. To comply with this requirement, it was required to prepare an architectural package for the City of Webster to review that included proposed landscaping including plant types, hedge and shrub types, and irrigation systems and construction drawings for review. Per Section IV.1.15







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of Exhibit A of the professional services agreement, landscape and irrigation design was not included in the original Scope of Services.

### **36-inch Pipeline Design Revisions**

During the preliminary engineering of the 36-inch pipeline, several initial pipeline routes were identified and discussed with the City and the City's surveyor. As a result of these efforts, a pipeline alignment as indicated in **Attachment B** was selected. After a lengthy delay in field survey results, it was determined that a less costly (capital and O&M) route is available between stations 31+00 and 91+00. Additionally, conflicts (and associated high costs) with the CenterPoint/Genco canal alignment resulted in the need to significantly modify the proposed waterline alignment from station 91+00 to 172+50 and from 178+50 to 207+00. In total 16,400 linear feet of the originally planned 17,100 linear feet (or 95%) had to be relocated. As a result of this alignment change, nearly all generated sheets need to be discarded in favor of new sheets to reflect the revised alignment. **However, the estimated capital savings is over \$1.3 million.**

### **City of Houston – Flow Metering Station Design Changes**

Design improvements to this project required coordination with the City of Houston due to the fact that the City of League City is a Co-Participant (via GCWA) where wholesale water is obtained from the Southeast Water Purification Plant (SEWPP). A chain of custody flow metering station is required at each Co-Participant take point site thus requiring coordination with the City of Houston (COH) design review authority.

CDM Smith has extensive experience with the COH Flow Metering Station design review group starting from the design of the Katy Addicks Surface Water Pump Station Project (2000), SEWPP Co-Participant Flow Strategy Report (2007), and City of Pearland Alice Street Water Plant Improvements Project (2009) which is nearly identical to the SH 3 project in concept as the Alice Street Water Plant is one of two of Pearland's Co-Participant take points.

Based on our past successful projects and our excellent professional relationships with COH staff, CDM Smith anticipated a similar execution process to obtain COH approval. In general, that process, in order, would consist of jointly meeting with COH and League City staff at the very early stages of the project to communicate the project scope and needs, develop concept sketches and flow diagrams for initial review and approval prior to beginning detailed design, submitting 30% drawings for review and comment, submit the 90% drawings for final review, and then make any minor corrections necessary to submit the 100% drawing set for signature and approval. This process is designed to minimize redesign efforts, expedite the design schedule, and have a high level of confidence regarding cost implications as the project moves through the design stage in order to minimize any unexpected costs during the construction phase.







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Despite our best intentions and a proven execution strategy, several difficulties were encountered with the COH. These difficulties were attributed to COH staff turnover which resulted in inconsistent design philosophy within the City of Houston. Additionally, during our initial coordination meeting with the COH on September 1, 2011, we were made aware of the reluctance of City of Houston staff to share information during the design process and therefore required the 100% complete design, including League City approvals before the COH would begin their review process.

The CDM Smith design team proceeded with the preparation of construction drawings, utilizing the same COH chain of custody design philosophy approved in their most recent Co-Participant project for the City of Pearland. These 100% complete construction drawings for SH 3 Booster Pump Station Project were submitted to the City of Houston on September 20, 2012. The results of the first COH review required the revision of 65 drawings and the addition of additional flow meters and backflow prevention devices that added an additional \$300,000 in construction cost and would also require League City to maintain these additional devices in perpetuity.

League City staff was promptly informed of the results of the COH review. Due to the overall completion schedule of the project, revisions immediately commenced followed by joint COH and League City coordination meetings. This process continued with two more resubmittals and subsequent joint coordination meetings with the number of subsequent revisions being dramatically reduced at each review submission milestone. Through the course of the coordination meetings, the CDM Smith design team, working with League City staff, was successful in coming up with a revised design that allowed the successful negotiation to remove the additional flow meters and backflow prevention devices and **therefore saving League City approximately \$300,000 in additional construction costs.**

In **Attachment C** to this letter is included a Summary Memorandum dated August 9, 2013 summarizing all of the required changes for this project. Also attached is a listing of drawings submitted to the City of Houston along with number of required revisions in order to gain signature acceptance by the COH.

Our original scope contemplated and made provisions for additional efforts associated with gaining COH approval through a separate additional service budget of \$10,000. This additional service was to cover the additional coordination meetings with the COH. If the project would have followed the normal and customary anticipated process, the CDM Smith design team would have been able to prepare the design drawings alongside and in conjunction with the COH coordination process with very little additional effort. As you are aware, the construction drawing process typically starts with the piping arrangements and once those are solidified, the other disciplines, such as electrical, structural, and instrumentation, design in support of and around the large piping and valve systems. However, because the COH deviated from past historical project protocols and required a







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completed set before providing any review comments, any required changes to the piping system would also require coordinated changes to the electrical, structural, and instrumentation discipline drawings as well, and substantially increasing the level of effort for each design review submittal.

Obtaining approval for this project from the COH involved additional extensive coordination, communication, and multiple extra meetings to understand the scope of COH requirements. As a result, costs associated with the original COH coordination effort budget of \$10,000 were approximately \$20,000. The additional efforts necessary to revise the completed construction drawings was \$68,000 for a total additional effort of \$78,000. CDM Smith is requesting approximately \$51,000 in additional funding as the balance of the remaining effort would be considered inclusive of the original scope. Therefore, CDM Smith is respectfully requesting reimbursement for the additional extra efforts necessary to revise the completed construction drawings to COH satisfaction in order to gain the necessary approvals. These revisions also included additional design elements that eliminated the need to provide the additional backflow prevention and flow metering devices originally requested by the COH **and therefore saving League City \$300,000 construction costs.**

### **Generator Set Removal from Drawings**

A recent scope change implemented by the City on this project was to remove the generator set from the current project scope in an effort to capture available CDBG grant funding for the installation of the proposed 1,750 kW diesel engine generator set and related appurtenances at the SH3-BPS **resulting in a net savings of approximately \$580,000 to the City.** CDM Smith coordinated both with the City of League City and PBK (the City's generator set design consultant) to provide information and design insight on the elements to be placed in a separate bid package.

### **Transient Surge Analysis – New 36-inch Alignment**

As part of the alignment change for the 36-inch pipeline from SH3-BPS to the SSH-BPS, a revised hydraulic transient analysis will need to be performed to confirm protective surge devices and control valve settings. CDM Smith had previously completed the surge analysis for the original pipeline route as indicated in **Attachment D.**

### **Funding Request**

In summary the CDM Smith Team is requesting additional funding authorization(s) for out of scope work that has been completed and for work efforts that are still necessary to complete the project. The current total contract amount for Basic and Additional Services is \$1,600,000 for both the booster pump and waterline projects or just over 6% of the construction cost. The proposed amendment amount of \$318,300 represents approximately 1.2% of the construction cost (7.2% total).







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The CDM Smith team is committed to continuing our high level of support in good faith for the benefit of City and the project on these out of scope tasks with the mutual understanding we will be compensated accordingly. Should you have any questions or need further information, please call me at 713-423-7300.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeffrey S. Peters', written over a horizontal line.

Jeffrey S. Peters, P.E., BCEE  
Principal Engineer  
CDM Smith Inc.  
TBPE Firm Registration No. F-3043

Attachments

cc: Brent Nicholas & Kim Chanslor, File – CDM Smith







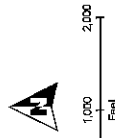
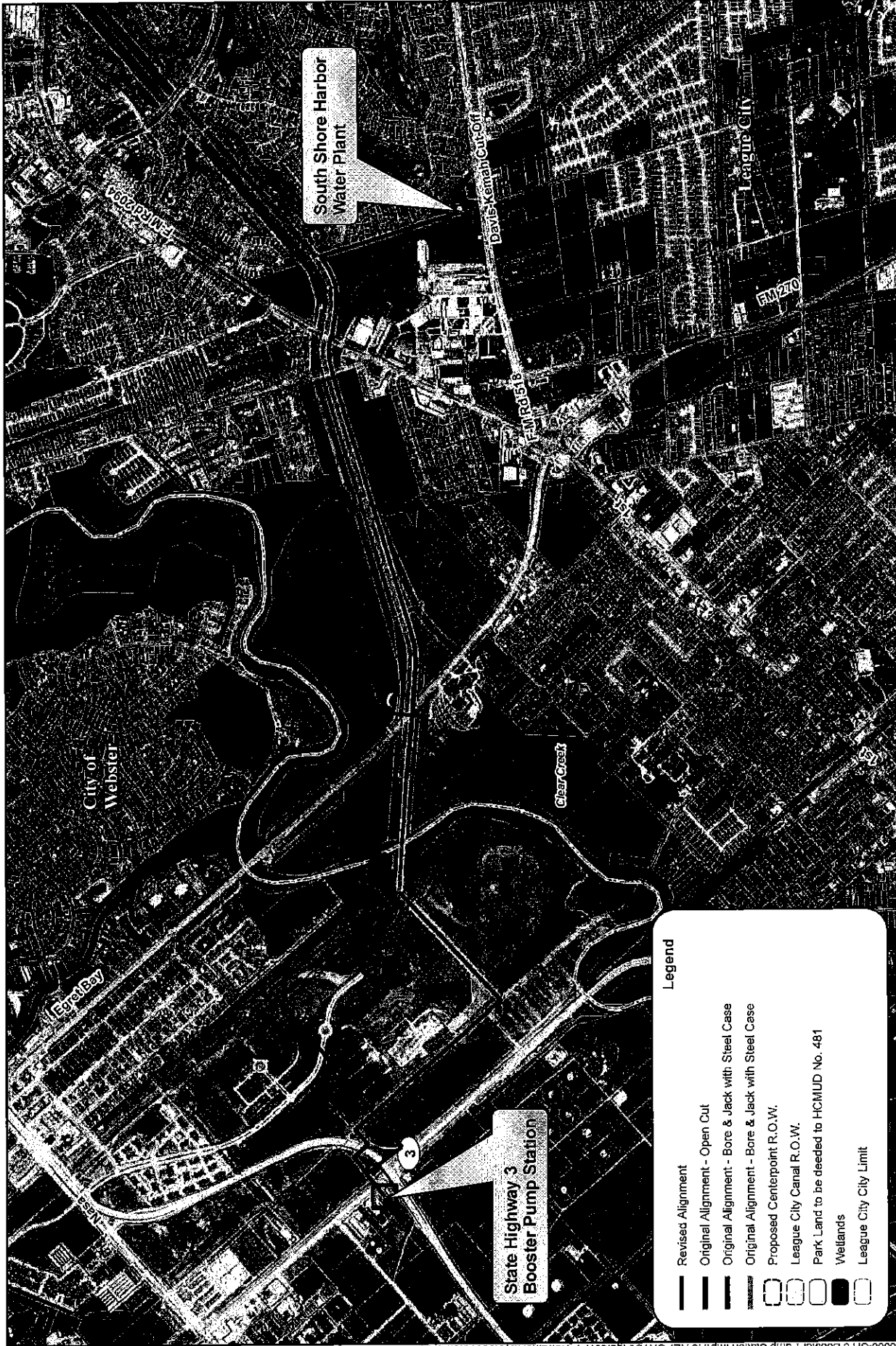
Item	Description / Task	Estimated Man-Hours										Subtotal (hrs.)	Subtotal (cost \$)	Subs (cost \$)	Subs (cost+10%)	Other Direct Costs	Total Fee (hrs. + Sub Markup of 10% + ODC)
		Principal (hrs.)	Technical Director (hrs.)	Project Manager (hrs.)	Engr. Grade 7/8 (hrs.)	Engr. Grade 5/6 (hrs.)	Engr. Grade 3/4 (hrs.)	Designer (hrs.)	Cost Estimator (hrs.)	Sr. Word Processor (hrs.)	Contract Admin (hrs.)	Admin Assistant (hrs.)					
		\$ 200.00	\$ 175.00	\$ 165.00	\$ 175.00	\$ 150.00	\$ 135.00	\$ 120.00	\$ 150.00	\$ 100.00	\$ 100.00	\$ 90.00					
<b>ADDITIONAL SERVICES REQUIRED</b>																	
<b>TASK 1.4 LANDSCAPE &amp; IRRIGATION DESIGN &amp; SUPPORT AND ADDITIONAL (NEW) ARCHITECTURAL SERVICES</b>																	
1	Landscape & Irrigation design & support services																
2	Project Task Expenses (Shipping, Supplies, Repro, etc.)																
Subtotal		0	0	0	0	0	0	0	0	0	0	0	\$ 7,900.00	\$ 7,900.00	\$ 8,690.00	\$ 434.50	\$ 9,900.00
<b>TASK 2.2 36-INCH PIPELINE DESIGN REVISIONS</b>																	
1	Project Management, City Alternate Route Design and Support, and Surveyor Coordination	20		48		60					12	8	148	\$ 22,600.00	\$ -	\$ -	\$ 22,600.00
<b>REVISED DRAWINGS</b>																	
2	Revised Key Plans and Exhibits			8		24		32					64	\$ 8,800.00	\$ -	\$ -	\$ 8,800.00
3	Completely Revise Plan & Profile Sheets		8	24		48		88					168	\$ 28,200.00	\$ -	\$ -	\$ 28,200.00
4	Specification Revisions (Add HDPE pipe specification)		2	4		8				4			18	\$ 2,700.00	\$ -	\$ -	\$ 2,700.00
5	Internal QA-QC on new alignment changes	8	32										40	\$ 7,200.00	\$ -	\$ -	\$ 7,200.00
6	Project Task Expenses (Shipping, Supplies, Repro, etc.)													\$ -	\$ -	\$ -	\$ -
Subtotal		28	42	84	0	140	0	120	0	4	12	8	438	\$ 64,900.00	\$ -	\$ 3,240.00	\$ 68,100.00
<b>TASK 3.09 CITY OF HOUSTON - FLOW METERING STATION DESIGN CHANGES</b>																	
1	Extra COH DWO, City Engineer, and Permitting Meetings		8	8		8				2			26	\$ 4,200.00	\$ -	\$ -	\$ 4,200.00
2	Design Change Engineering, Control Strategy Change			8	20	8	16			4			56	\$ 8,600.00	\$ -	\$ -	\$ 8,600.00
3	Drawing Revisions (See attached list)			16	24		32	72					144	\$ 19,800.00	\$ -	\$ -	\$ 19,800.00
3	Design Summary Package Creation for COH Reviewers			4	16		32			4	3	4	63	\$ 9,900.00	\$ -	\$ -	\$ 9,900.00
4	COH Permitting Review Coordination, Responding to Multiple Rounds of Review Comments, Face to Face Meetings with Reviewers, etc.			4	8		32				2	4	50	\$ 7,000.00	\$ -	\$ -	\$ 7,000.00
5	Project Task Expenses													\$ -	\$ -	\$ -	\$ -
Subtotal		0	8	40	68	16	112	72	10	10	5	13	338	\$ 48,500.00	\$ -	\$ 2,425.00	\$ 51,000.00
<b>TASK 3.10 GENERATOR SET REMOVAL FROM DRAWINGS</b>																	
1	Drawing Revisions to Show Generator and SPCC Containment Area by Others (Record Drawings)		1	4	4		16	32					57	\$ 7,600.00	\$ 2,500.00	\$ 2,750.00	\$ 10,350.00
2	Coordination with Other City Subconsultant			4			4	8					16	\$ 2,200.00	\$ -	\$ -	\$ 2,200.00
3	Review of Other City Subconsultant Design Packages; email comments to City		2	4	8					4				\$ 2,600.00	\$ -	\$ -	\$ 2,600.00
4	Project Task Expenses													\$ -	\$ -	\$ -	\$ -
Subtotal		0	3	12	16	0	20	40	0	4	0	0	73	\$ 12,700.00	\$ 2,500.00	\$ 750.00	\$ 16,300.00





Item	Description / Task	Principal (hrs.)	Technical Director(s) (hrs.)	Project Manager (hrs.)	Estimator Man-Hours	Estimator Grade 5/6 (hrs.)	Estimator Grade 7/8 (hrs.)	Estimator Grade 9/10 (hrs.)	Contract Admin 5/6 (hrs.)	Contract Admin 7/8 (hrs.)	Subtotal (hrs.)	Subtotal (cost \$)	Subs (cost \$)	Subs (cost+10%)	Other Direct Costs	Total Fee (hrs. + Sub Markup of 10% + CDC)
<b>TASK 4.5</b>																
<b>ALIGNMENT</b>																
1	Transient Model Update Based on New Alignment and changes to SH-3 BPS from City of Houston requirements		2	4			20				26	\$ 4,600.00	\$ 3,500.00	\$ 3,850.00	\$ -	\$ 8,450.00
2	Re-run Surge CASE Conditions			2			26				26	\$ 4,600.00	\$ -	\$ -	\$ -	\$ 4,600.00
3	Issue Report with Model results and recommendations - O&MCC		4	4			10			6	24	\$ 3,800.00	\$ -	\$ -	\$ -	\$ 3,800.00
4	Project Task Expenses											\$ -	\$ -	\$ -	\$ 860.00	\$ 860.00
	<b>Subtotal</b>	0	6	10	0	0	56	0	0	6	78	\$ 13,000.00	\$ 3,500.00	\$ 3,850.00	\$ 860.00	\$ 18,100.00
<b>TASK 4.6</b>																
<b>ADDITIONAL SURVEY - RE-ROUTE</b>																
1	Boundary Field work, Research, and Legal Work			2				10			14	\$ 1,900.00	\$ 52,000.00	\$ 57,200.00	\$ -	\$ 59,100.00
2	Survey 100ft Cross Sections at 50ft intervals along alignment and water crossings and tying in structures and surface improvements along route			4				10			14	\$ 2,100.00	\$ 46,000.00	\$ 50,600.00	\$ -	\$ 52,700.00
3	Coordinate with utility companies and acquire maps			6				12			20	\$ 2,600.00	\$ 5,000.00	\$ 5,600.00	\$ -	\$ 8,300.00
4	Provide horizontal and vertical control			2				6			8	\$ 1,200.00	\$ 5,000.00	\$ 5,600.00	\$ -	\$ 6,760.00
5	Prepare CAD model			4				8			12	\$ 1,600.00	\$ 9,000.00	\$ 9,900.00	\$ -	\$ 11,700.00
6	Construction Control Staking			2				4			6	\$ 900.00	\$ 5,000.00	\$ 5,500.00	\$ -	\$ 6,400.00
7	Stake Geotech Bore Holes			1				2			3	\$ 500.00	\$ 2,500.00	\$ 2,750.00	\$ -	\$ 3,250.00
8	Project Task Expenses											\$ -	\$ -	\$ -	\$ 7,410.00	\$ 7,410.00
	<b>Subtotal</b>	0	0	21	0	0	50	52	0	0	77	\$ 11,200.00	\$ 124,500.00	\$ 136,950.00	\$ -	\$ 155,600.00
<b>TOTAL ADDITIONAL SERVICES - CONTRACT SUPPLEMENT</b>																
																\$ 318,300.00





**CDM**

**City of League City, Texas**  
**State Highway 3 Booster Pump Station Improvements**  
 Preliminary Engineering Design

2070-93930

**ATTACHMENT B**  
 New 36" Distribution Line  
 State Highway 3 Booster Pump Station  
 to South Shore Harbor Water Plant  
 August 2013





TBPE Firm Registration No. F-3043

## **Memorandum**

**To:** *Bobby Morrison – City of League City*

**From:** *Brent W. Nicholas, P.E.*

**Date:** *August 9, 2013*

**Subject:** *State Highway 3 Booster Pump Station Improvements Project*  
***Summary of Changes Required to Obtain City of Houston Approval***  
***CDM Smith P/N 2070-83930***

This memorandum presents a summary of all changes made to the original bid set of drawings for the City of League City Booster Pump Station Improvements Project, which were required to obtain necessary approvals from the City of Houston (COH).

### **City of Houston Permitting Review Process**

Obtaining approval for this project from the COH Permitting Department involved extensive coordination, communication, and meetings to understand the scope of COH's required changes. Approval was also obtained from the COH Planning and Development Services Division for operational criteria related to the emergency bypass line. Approval for this project was granted by the COH after several rounds of design phase coordination meetings and design submissions where changes were made to the original bid set of drawings. The following summarizes these events:

1. Meeting with COH on September 1, 2011
2. 90% Milestone Deliverable to the COH on September 20, 2012
3. Received COH Review Comments September 28, 2012
4. Meeting with COH on November 21, 2012
5. Meeting with COH on January 22, 2013
6. 100% Submittal to COH on March 6, 2013
7. Received COH Review Comments on March 19, 2013
8. Revised 100% Submittal to COH on April 25, 2013



Bobby Morrison - City of League City  
August 9, 2013  
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9. Received copy of COH City Engineer Approval Letter on June 19, 2013
10. Received signed Mylar drawings from COH on July 15, 2013.

### **Changes Required for COH Approval**

The following list provides a break-down of all changes that were made to the original bid set of drawings since they were 100% Issued For Construction in July of 2012. In addition to the drawings referenced in the items listed below, the updated changes were applied to all associated backgrounds throughout the drawing set:

- Proposed civil site plans were modified to show site drainage details and referenced TxDOT permit and a COH requested gravel driveway was added to the northern corner of the site (see sheet GS-C-2).
- Existing driveway was modified to include expanded turning radius and added associated section cut (see sheets GS-C-2 and STD-C2) as described in updated TxDOT permit.
- Detail added on fuel spill containment basin to meet COH Storm and Stormwater Quality Department requirements (see sheet STD-C-6).
- The 24" bypass line to the 36-inch South Shore Harbor Booster Pump Station facility and associated end-piping directly downstream of the flow control valves was eliminated on the proposed flow metering station to meet COH Water and Facilities Department requirements (see sheet GS-C-5, FMS-M-2 and FMS-M-3).
- A new backflow preventer (BFP) assembly has been included on the 42" emergency bypass line, along with associated isolation valves, air release valves, water quality blow-off hydrants, piping, and appurtenances. The PVC sample lines from the Flow Metering Station were rerouted to accommodate the new BFP (see sheets GS-C-5 and BFP-M-1).
- Underground electrical ductbank was re-routed, associated electrical schedules and one-line diagrams were modified, and terminal cabinets have been re-positioned on electrical site plans to accommodate flow metering station changes and new BFP assembly requirements (see sheets GS-E-4, GS-E-7 and GS-E10).
- Limits of metering station ownership were indicated on the existing flow metering station drawings (see sheet FMS-M-1).
- The layout of the proposed 30-inch chain of custody transfer magnetic flowmeters and League City 30-inch validation magmeters located on the proposed flow metering station has been modified to meet COH standards/recommendations (see sheets FMS-M-2 and FMS-M-3).



Bobby Morrison - City of League City  
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- Plan and section views for the updated valve vault have been included with associated appurtenances on the 42" emergency bypass line to provide for maintenance of water quality (see sheet GST-M-5).
- Several Process and Instrumentation Diagrams were updated to account for all changes and additions made to accommodate COH requirements. Same for many electrical drawings which were updated to reflect COH requirements.

**Included Documents:**

- A. Original Bid Set of Drawings that were issued for construction in July of 2012.
- B. Revised Conformed Drawing Sets including all City of Houston approval signatures.
  - a. One full size conformed drawing set
  - b. Three 11"x17" half-size conformed drawing sets
  - b. Three CD-ROM copies of the indexed conformed drawing set

cc: Jody Hooks, John Lothrop – City of League City  
Jeff Peters, Project File – CDM Smith



City of Houston Review Timeline: ✓ = Additional Revisions Made to Drawing per COH Request

Sheet	90% Milestone Deliverable to the COH - 9/20/2012	Received COH Review Comments - 9/28/2012	Meeting with COH - 11/21/2012	Meeting with COH - 1/22/2013	100% Submittal to COH - 3/16/2013	Received COH Review Comments - 3/19/2013	Revised 100% Submittal to COH - 4/25/2013	Received signed Mylar drawings from COH - 7/16/2013	TOTAL REVISION CYCLES
GP-G-1		✓			✓	✓			4
GP-G-2		✓			✓				2
GP-G-3		✓							1
GP-G-4		✓							1
GP-G-5		✓							1
GP-M-1		✓							1
GP-M-2		✓		✓					2
GP-M-3		✓							1
GS-C-1		✓							1
GS-C-2		✓		✓		✓			3
GS-C-3		✓							1
GS-C-4		✓							1
GS-C-5		✓		✓		✓	✓		4
GS-C-6		✓		✓		✓			3
GS-C-8		✓		✓		✓			3
GS-C-10		✓		✓		✓			3
STD-C-2		✓		✓		✓			3
STD-C-6		✓		✓		✓			3
FMS-M-1		✓							1
FMS-M-2		✓		✓		✓			3
FMS-M-3		✓		✓		✓			3
GST-M-1		✓							1
GST-M-2		✓		✓					2
GST-M-3		✓							1
GST-M-4		✓							1
GST-M-5		✓							1
GST-M-6		✓							1
GST-M-7		✓							1
GST-M-8		✓							1
GST-M-9		✓							1
GST-M-10		✓							1
GST-M-11		✓							1
GST-M-12		✓							1
GST-M-13		✓							1
GST-M-14		✓							1
GST-M-15		✓							1



City of Houston Review Timeline: ✓ = Additional Revisions Made to Drawing per COH Request

Sheet	90% Milestone Deliverable to the COH - 9/20/2012	Received COH Review Comments - 9/28/2012	Meeting with COH - 11/21/2012	Meeting with COH - 1/22/2013	100% Submittal to COH - 3/16/2013	Received COH Review Comments - 3/19/2013	Revised 100% Submittal to COH - 4/25/2013	Received signed Mylar drawings from COH - 7/16/2013	TOTAL REVISION CYCLES
BFP-M-1		✓			✓				2
GS-S-1		✓							1
GS-S-2		✓							1
GS-S-3		✓							1
GS-E-1		✓							1
GS-E-2		✓							1
GS-E-3		✓		✓					2
GS-E-4		✓		✓					2
GS-E-5		✓							1
GS-E-6		✓							1
GS-E-7		✓							1
GS-E-8		✓							1
GS-E-9		✓							1
GS-E-10		✓							1
GS-E-11		✓							1
GS-E-15		✓							1
GS-E-16		✓							1
FMS-E-1		✓		✓		✓			3
GST-E-1		✓							1
GST-E-2		✓							1
GS-I-1		✓							1
GS-I-2		✓							1
GS-I-3		✓							1
GS-I-6		✓							1
GS-I-7		✓		✓					2
GS-I-8		✓		✓					2
GS-I-9		✓		✓					2
GS-I-10		✓		✓					2
STD-I-5		✓							1





## Memorandum

*To: Brent W. Nicholas, P.E*

*From: Peter Barthuly, P.E. (MA)*

*Date: July 12, 2012 (revised 8/7/2012)*

*Subject: City of League City, TX*  
*State Highway Booster Pump Station & 36-in Pipeline Project*  
*Water Hammer Analysis*  
**36-in Transmission-SH3 HST & BPS to SSH GST**  
**2070-83930**

The water hammer analysis performed is for the 36-in diameter transmission main that is supplied by the State Highway 3 Booster Pump Station (SH3 BPS) and conveyed to the South Shore Harbor Booster Pump Station (SSH-BPS) GSTs. The analysis was done for the occasion of power failure to the pumps. The flows used in the analysis were 10,000-gpm (22.3-cfs) and 20,000-gpm (44.6-cfs). The analysis was run for water levels at the SH3 GST that range from 20-ft to 56.25-ft (MSL elevations). The discharge elevation of the transmission main at the SSH-BPS GST is an air break at elevation 47.8-ft MSL.

Three pumps were presumed to be operating to supply 20,000-gpm to the 36-in diameter pipeline (one pump for 10,000-gpm). The control valve (globe style piston valve) at each pump discharge is 16-in diameter. The maximum velocity through each control valve is 10.6-fps. While on the high side, the valve's operation should be okay. The manufacturer of the electric check valve (Golden-Anderson), however, should be consulted. The profile used in the analysis is attached and is assumed to represent the centerline of the 36-in pipeline.

The objective of the analysis is to prevent water column separation along the 36-in transmission main. The worst case for column separation occurs at the low water level condition within the SH3-BPS GST. The analysis was then run at the maximum water level at SH3 GST to estimate the highest pressure surge. The recommended surge control to prevent water column separation is to install a 3-in air inlet valve-AIV (e.g., APCO Model 1500-S or equal) and a 1-in diameter outlet (the larger of the two outlets) air release valve ARV (e.g., APCO Model 142DAT or equal) at each pump discharge. The AIV's and ARV's should be installed on 90 degree vertical tees (**Figure 1**). The valves would be mounted on the blind flange of the tee. In addition, the pump discharge control valve is required to close over a time no less than 180 seconds. The manufacturer should be consulted on this closing time.



Peter Barthuly, P.E. (MA)  
July 12, 2012 (revised 8/7/2012)  
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A 3-in outlet AIV is required along the pipeline at a location of about 16,200-ft from the SH3 BPS where the transmission main rises to an elevation of 11-ft and cause a “knee” in the profile (**Figure 2**). No air release is required because the admitted air will be carried to the discharge point of the pipeline at the SSH-BPS GSTs.

The type of AIV recommended at each pump discharge tee only admits air. To prevent the expulsion of air the spring assisted disc closes. The ARV's installed along side of each AIV are double acting and the air expulsion rate can be adjusted if necessary to prevent rapid air pocket collapse and subsequent excessive pressure surges.

Without the AIV's installed, the attached graphs (A and B) show water column separation and high pressure surges at the pump control valves along the transmission main at Node J-17 (see **Figure 1** for node location). With the recommended surge controls installed (slow closing pump discharge valves; AIV's; CARV's), the water column separation is prevented and pressure surges mitigated. The highest pressure surge is caused by the air pocket collapse at the ARV's. Attached graphs C and D, respectively show the pressure rise at the outlet of the pump control valve in pressure (psi) and Hydraulic Grade Line Elevation (HGLE) (project datum). Graph E and F, respectively shows the pressure rise at the SH3 BPS AVI valves; and, air volume admitted into the pipeline at each AIV at the SH3 BPS.

The attached Graph G shows the HGLE during the failure of one of the three pumps conveying 10,000-gpm. To provide a safety factor, the recommended pressure surge HGLE for the transmission main is 185-ft which is 71-psi at the pump control valves and 84-psi at the pipeline low elevation (-10-ft). In reality, the friction along the pipeline will cause the pressure surge to be less than 84-psi along the pipeline including its low point.

For the 20,000-gpm analysis during the event of one pump failing while the other two pumps continue to operate, graphs H and I are attached. Graph H shows the HGLE momentarily drops until it recovers to steady state flow; while graph I shows that the operating pumps flow momentarily decreases before flow recovers to steady state.

In case the pump control valve doesn't close during a power failure, the overflow at the GST's should be designed to handle runaway reverse pump flow of at least 17-cfs. This is for the total of three pumps. Before restarting the pumps after a power failure, allow the system to stop surging for about 5 minutes. The pumps should be brought on-line by ramping up the VFD's speed then slowly opening the flow control valve over 120 seconds. The pumps should be restarted staggered 3 minutes apart. Presuming that all three GST's at the SSH BPS are operating simultaneously at the peak flow, the required diameter of their altitude valves is 18-in. The maximum flow to any one tank should be limited to 6700-gpm to avoid excessive velocities through the valves. The altitude valves should be made to close over a range of at least 1-ft of a rising water level for the 1 MG GST's and at least 1/3-ft for the 3 MG GST. The altitude valve must be submerged sufficiently in a vault to allow it to close.



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For normal stopping of the pumps, the pump flow control valve should slowly close over 120 seconds before the pumps ramp down. The pumps stops should be staggered by about three minutes apart.

A point of interest is that the pump surge control valve is needed to prevent flow during negative static conditions (i.e., SH3 GST WSEL at 56.25-ft and SSH GST inlet pipe elevation at 47.8-ft). Once installed, however, the valve must allow reverse flow at positive static conditions before slowly closing to be bringing the water column to rest to prevent excessive pressure surges.

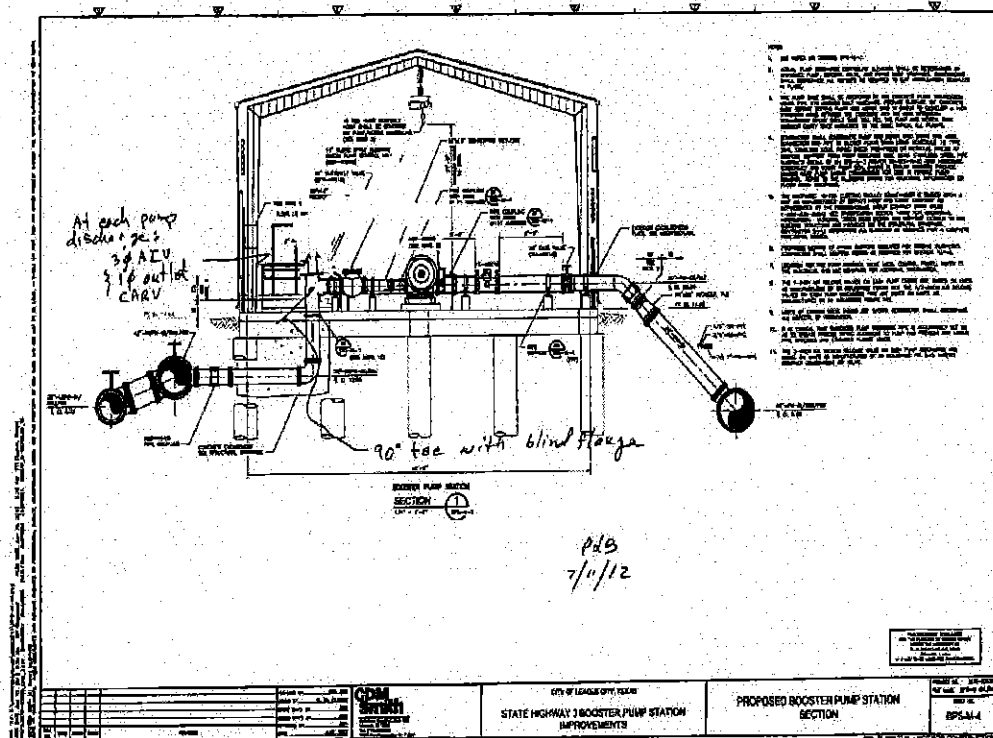
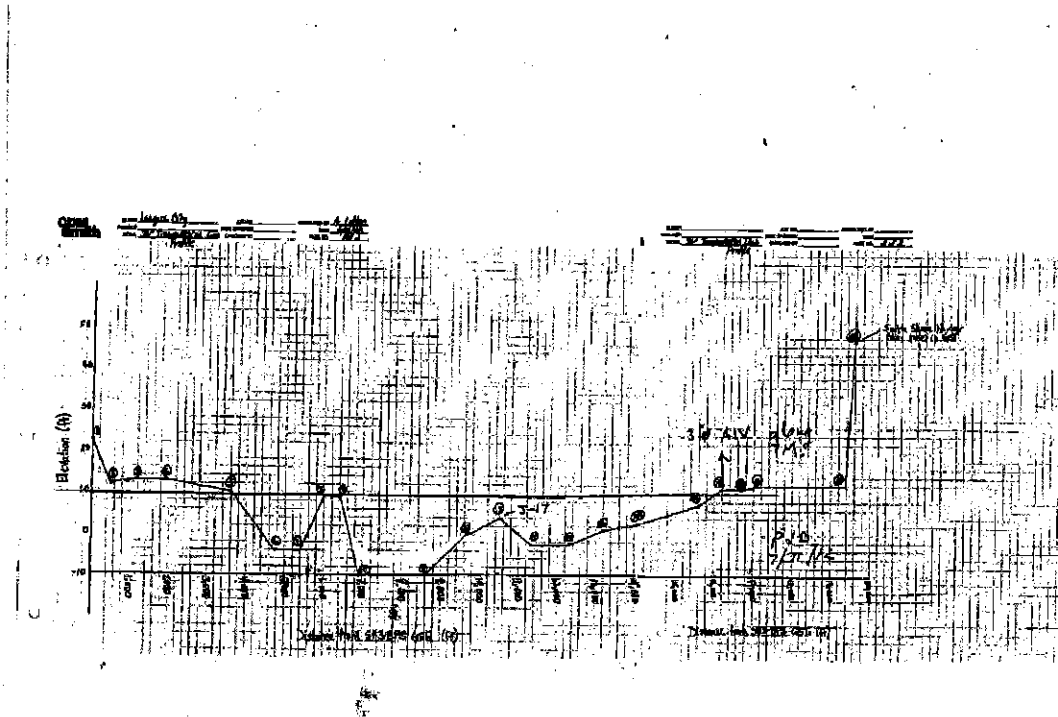


Figure1 – Recommended installation of the 3-in Air inlet Valve (AIV) and 1-in Air Release Valve (ARV) at Each Pump Discharge Tee



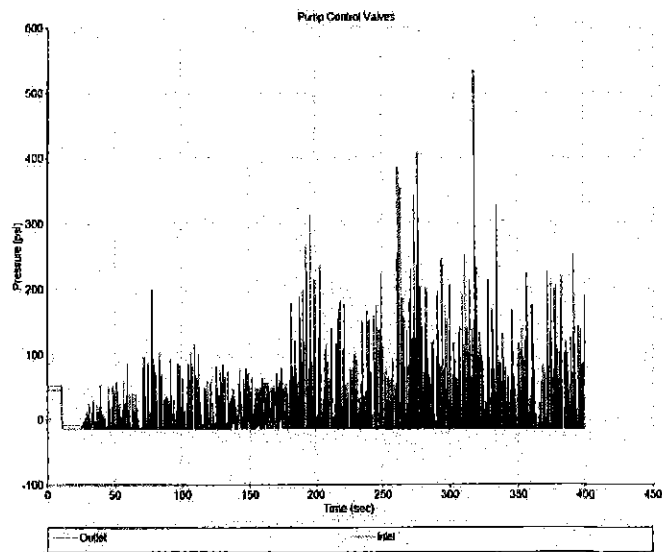
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**Figure 2 – Profile of the 36-in Diameter Pipeline Showing Location of the Severest Water Column Separation at Node J-17 and Location of the Recommended Pipeline 3-in AIV**



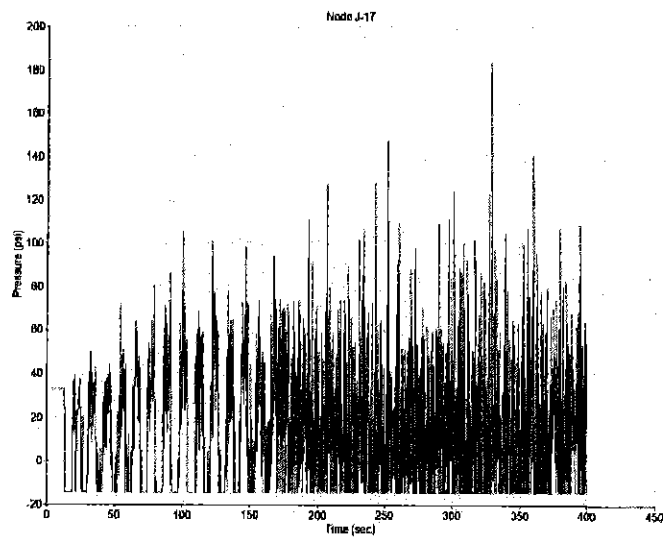
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**Graph A – Pressure Surges at the Pump Control Valves without Surge Controls (i.e., no AIV's)**



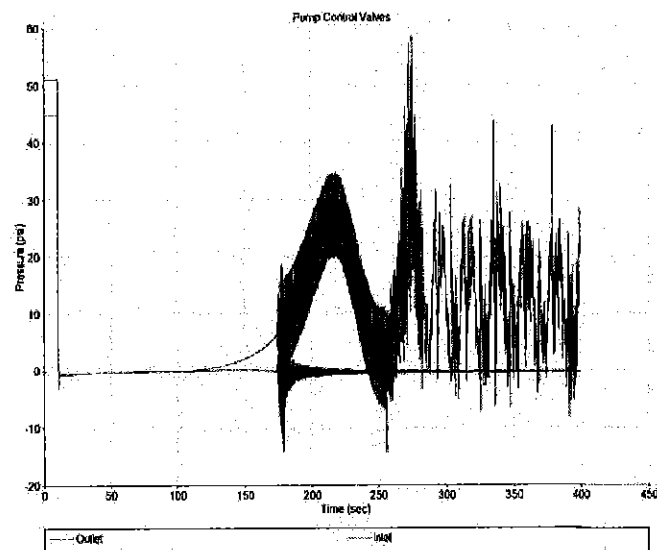
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**Graph B – Pressure Surges at Node J-17 without Surge Controls**



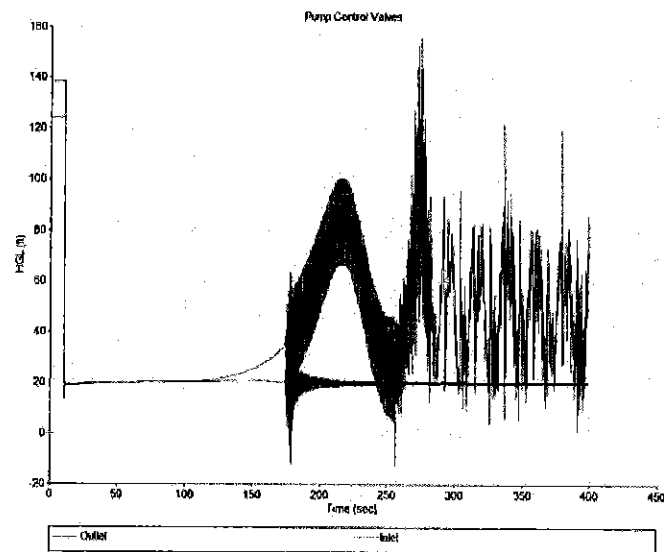
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**Graph C – Pressure Surges at Pump Control Valves with Recommended Surge Controls Installed**



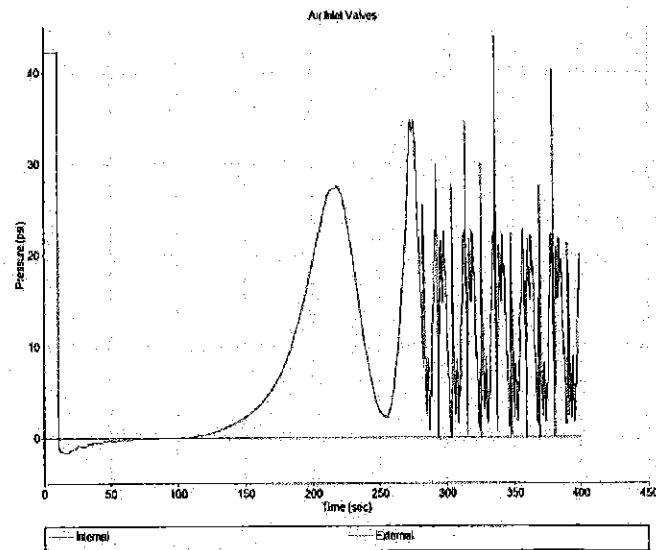
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**Graph D – HGLE Surges at Pump Control Valves with Recommended Surge Controls Installed**



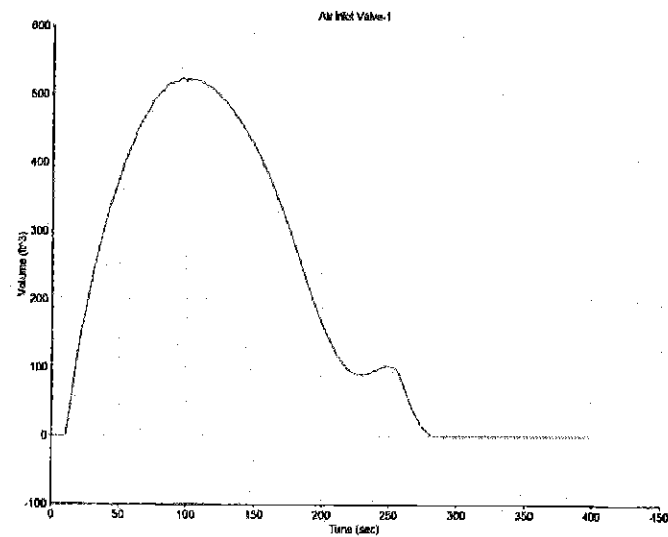
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**Graph E – Pressure Surges at Recommended AIV's at Pump Discharge Tees**



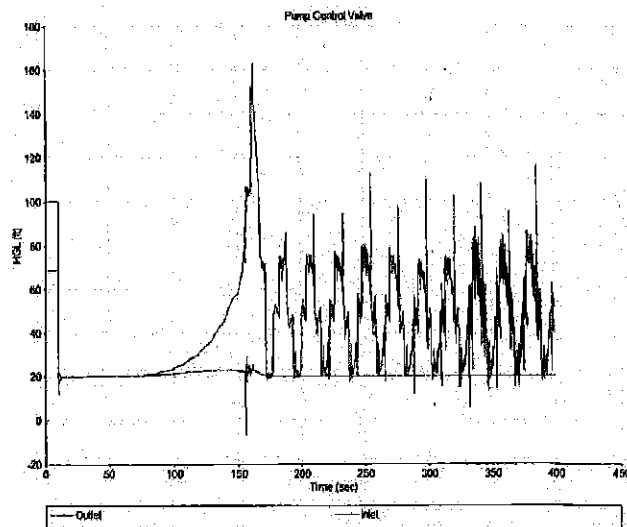
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**Graph F – Volume of Air Admitted at each Pump Discharge AIV**



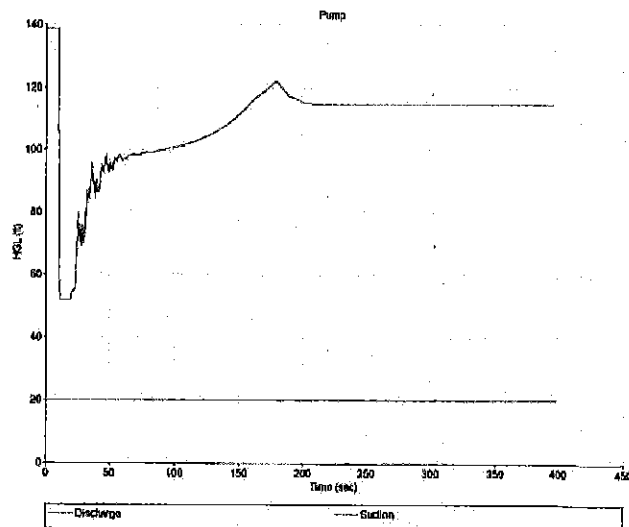
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**Graph G – Pressures Surges at Pump Control Valves with Failure of One of One10,000-gpm Pump with Surge Controls Installed**



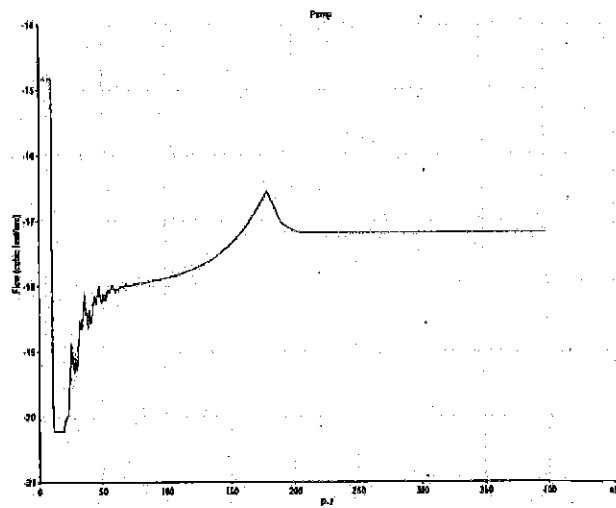
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**Graph H – HGLE Surge with One of Three Operating Pumps Failing with Surge Controls Installed**



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**Graph I – Flow Surges with One of Three Operating Pumps Failing with Surge Controls Installed**









# City of League City, TX

300 West Walker  
League City TX 77673

## Text File

File Number: 11-0281

12C.

Introduced: 6/9/2011

Current Status: New Business

Version: 1

Matter Type: Agenda Item

### Title

Consider and take action to approve a Professional Services Agreement with Camp Dresser & McKee for the Phase II modifications for SH 3 Booster Pump Station Improvements (Assistant City Manager, Public Works)

Staff recommends approval.

### Background:

Camp Dresser & McKee's (CDM) scope of work (attached "Exhibit A") Phase II modifications to the SH 3 Booster Station includes high service booster pump improvements, new controls & energy saving devices such as VFD's, to meet current and future water demands and to provide for a more reliable system (expansion of storage to include an additional 3.0 million gallons in addition to the 1.0 million gallon existing); addition of a low service booster pump station/system at the SH 3 Facility for the purpose of pumping treated potable water through the transmission line to the South Shore Harbour Booster Pump Station in order to provide an additional and redundant conveyance system of potable water; the addition of a new metering station as required by the City of Houston, as well as a new water transmission line from the SH 3 Booster Pump Station to the South Shore Harbor Booster Pump Station for the purpose of providing an additional and redundant conveyance system of potable water.

Phase III as proposed in the Water Master Plan will include additional ground storage capacity in the future. CDM proposes to perform this work for the amount of \$1,600,000.

### FUNDING

☐ NOT APPLICABLE

☒ Funds are available from 2011 Revenue Bond Fund 124.

☐ Requires Budget Amendment to transfer from Account # \_\_\_\_\_ to Account # \_\_\_\_\_

CITY OF LEAGUE CITY  
RECEIVED

JUN 23 2011

OFFICE OF  
CITY SECRETARY

APPROVED

JUN 14 2011

CITY COUNCIL







## AGREEMENT

STATE OF TEXAS                   §  
  §  
COUNTY OF GALVESTON       §

This agreement (this "Agreement") entered into by and between Camp Dresser & McKee, Inc. (hereinafter "Professional") and the City of League City, Texas, a Texas home-rule city (the "City").

### **1.     Scope of Services/Professional Fees**

This Agreement authorizes Professional to perform all necessary tasks to assist the City with the design of the SH 3 Booster Pump Station Improvements, (the "Work"), those tasks being further described in the attached Exhibit "A". The compensation for Professional shall be on a monthly basis with the rates as denoted in the attached Exhibit "A," with reimbursement of costs at the rates and charges as denoted in the attached Exhibit "A." An estimate of the costs and time schedules for the Work are attached as Exhibit "A." The Professional shall not exceed the estimated cost or fees for any phase of the Work as denoted in Exhibit "A" without further written authorization from the City. Each of these Exhibits "A" through "A" is incorporated into this Agreement by reference for all purposes.

### **2.     Reimbursable Costs**

Except for Professional's fees for services provided under this Agreement, reimbursable costs shall be as denoted in the attached Exhibit "A."

### **3.     Progress Reports**

Professional shall provide written progress reports to the City regarding the Work and oral reports as requested. At least one progress report shall be made at the time that approximately seventy percent (70%) of a phase as outlined in Exhibit "A" is completed. Such progress report shall identify the projected time and cost required by Professional to complete the remaining phases of the Work required under this Agreement.



**4. Personnel of Professional**

**a. Professional's Project Manager**

Professional shall designate Jeffrey S. Peters, P.E., BCEE to serve as Project Manager for the Work performed under this Agreement. Any change of Project Manager shall require thirty days' advance written approval from the City's Representative. Professional certifies that the Project Manager identified in the preceding sentence is a registered Professional Engineer in the State of Texas.

**b. Licensed and Registered Engineers**

Professional shall keep a full-time registered engineer licensed in the state of Texas on staff for the duration of its performance of the Work.

**c. Data on Professional's Employees**

Prior to commencement of the Work, Professional shall forward to the City a detailed resume of the personnel that will be assigned to the Work. Such personnel shall include, but not be limited to, engineers.

**d. Rejection of Professional's Employees**

The City reserves the right to approve or reject from the Work any employees of the Professional.

**5. Designation and Duties of the City's Representative**

- a. The City's Director of Public Works, or his designee, shall act as the City's Representative.
- b. This City's Representative shall use his best efforts to provide non-confidential City records for Professional's usage on the Work and to provide access to City's property and easements.

**6. Standards of Performance**

- a. The Professional shall perform all services under this Agreement in accordance with the standards of the engineering profession specializing in this type of design anticipated for the work.



b. Codes and Standards

- (1) All references to codes, standards, environmental regulations and/or material specifications shall be to the latest revision, including all effective supplements or addenda thereto, as of the date that the order for any necessary equipment is made by the City or that the construction specified is bid by the City.
- (2) If any such equipment is specially manufactured, it shall be identified to the City, and the Contractor and the Seller shall present sufficient data to the City to support the design and the suitability of the equipment.
- (3) All materials furnished on any City project shall be in accordance with ASTM specifications, or with other recognized standards. Proprietary material or other materials for which no generally recognized standards exist may be used provided there has been at least five years of proven experience in the field, and the City's Representative has approved such satisfactory documentation.
- (4) The project shall be designed and furnished in accordance with the most current codes and/or standards adopted by City, State or Federal government or in general custom and usage by the profession.
- (5) The codes and standards used in the profession set forth minimum requirements. These may be exceeded by the Contractor or the Professional if superior designs or materials are available for successful operation of equipment and/or for the construction project on which the Work is performed. Any alternative codes or regulations used shall have requirements that are equivalent or better than those in the above listed codes and regulations. The Professional shall state the alternative codes and regulations used.
- (6) Professional agrees the services it provides as an experienced and qualified professional engineer will reflect the professional standards, procedures and performances common in the industry for this project. Professional further agrees that the design, preparation of drawings, the designation or selection of materials and equipment, the selection and supervision of personnel and the performance of other services under this contract, will be pursuant to the standard of performance common in the profession.



- (7) Professional shall promptly correct any defective designs or specifications caused by Professional at no cost to City. The City's approval, acceptance, use of or payment for all or any part of Professional's services hereunder or of the Work itself shall in no way alter Professional's obligations or the City's rights under this Agreement.

7. **Schedule**

Professional shall not proceed with the Work or any stage thereof until written notice to proceed is provided by the City's Representative.

8. **Insurance**

- a. Professional shall procure and maintain insurance in the amounts listed below for protection from claims under workers' compensation, claims for damages because of bodily injury, including personal injury, sickness or disease or death of any and all employees or of any person other than such employees and from claims or damages because of injury to or destruction of property including loss of use resulting therefrom. The Professional shall provide a copy of the insurance certificate to the City.

**Coverage**

**Limit of Liability**

Workers' Compensation

Statutory for Worker's Compensation

Employer's Liability

Bodily Injury by Accident:  
\$500,000 (Each Accident)

Bodily Injury by Disease:  
\$500,000 (Policy Limit)  
\$500,000 (Each Employee)

Commercial General:  
(Including Broad Form  
Coverage, Contractual  
Liability, Bodily and  
Personal Injury, and  
Completed Operations)

Bodily Injury and Property  
Damage, Combined:  
Limits of \$500,000 each  
Occurrence and \$1,000,000  
aggregate (defense costs  
excluded from face amount of  
policy)



- b. Professional shall maintain professional liability (errors and omissions/malpractice) insurance in the amount of \$3,000,000 (in the aggregate). The Professional considers its insurance policies to be confidential business information ("CBI"). The Professional shall provide the City with a Certificate of Insurance evidencing the coverage required under the agreement and, upon request by the City and subject to all the confidentiality protections afforded by CBI, the Professional will provide a copy of its insurance policies.
- c. Professional shall give the City thirty days' written notice prior to any change or cancellation of these insurance policies.

**9. Liability**

The Professional shall be liable only for the portion of design and other services performed by the Professional and shall be responsible only for the negligent acts or omissions that the Professional has direct control over.

**10. Mutual Waiver of Consequential Damages**

Notwithstanding any other provision of this Agreement to the contrary, neither party including their officers, agents, servants and employees shall be liable to the other for lost profits or any special, indirect, incidental, or consequential damages in any way arising out of this Agreement however caused under a claim of any type or nature based on any theory of liability (including, but not limited to: contract, tort, or warranty) even if the possibility of such damages has been communicated.

**11. Indemnification**

Professional agrees to DEFEND, INDEMNIFY and HOLD HARMLESS the City, its employees, agents, officers and assigns from any and all suits, actions, claims, causes of action, damages and losses of any kind and character whatsoever, including, without limitation, reasonable attorneys' fees and expenses, brought for or on account of any injuries or damages, real or asserted, received or sustained by any person or property, on account of any negligence or any act or omission of Professional, its contractors, subcontractors, subconsultants, agents or employees arising directly or in any way connected with the work performed by Professional under this Agreement.

**12. Subcontractors and Subconsultants**

Professional shall receive written approval of the City's Representative prior to the use of any subcontractors or subconsultants. A copy of all proposed contracts with subconsultants and/or subcontractors shall be given to the City before execution of such contracts.



**13. Termination of Professional**

The City retains the right to terminate this Agreement "at will" and to pay only for the professional services and subconsultant's and subcontractor's costs that were provided for and/or committed to and to that the City approved of prior to the date of termination. All engineering drawings, specifications and files shall be given to the City at the time of termination. Professional shall not be responsible for the City's misuse of completed drawings, specifications and files; nor shall Professional be responsible for any work by others used to complete partial documents.

**14. Records**

At the City's request, the City will be entitled to review and receive a copy of all documents that indicate work on the project that is the subject of this Agreement.

**15. Supervision of Professional**

Professional shall be subject to the direction and supervision of the City's Representative. However, it is agreed and stipulated that Professional is an independent contractor and that the City neither reserves nor possesses any right to control the details of the Work performed by Professional under the terms of this Agreement.

**16. Billings**

The City shall have thirty (30) days to pay Professional's bills from the date of receipt of such bills. All bills must identify with specificity the work or services performed and the date(s) of such work or services.

**17. Reputation in the Community**

Professional shall retain a high reputation in the community for providing professional engineering services. Professional shall forward a copy of any current petition or complaint in any court of law, which (a) asserts a claim for \$50,000 or more for errors or omissions in providing engineering services and/or (b) seeks to deny the Professional the right to practice engineering services or to perform any other services in the state of Texas.

**18. Payroll and Basic Records**

- a. Professional shall maintain payrolls and basic payroll records during the course of the work performed under this Agreement and shall preserve them for a period of three years from the completion of the work called for under this Agreement for all personnel working on such work. Such records shall contain the name and address of each such employee, social security number, correct classification, hourly rates of wages paid, daily and weekly number of hours worked, deductions made and actual wages paid.



- b. Professional shall make the records required to be maintained under the preceding subsection (a) of this section available to the City for inspection, copying or transcription or its authorized representatives. Professional shall permit such representatives to interview Professional's employees during working hours on the job.

**19. Default of Professional**

- a. If Professional refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this Agreement (including any extension) or fails to complete the work within that time period, the City may, by written notice to Professional, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In such an event, the City reserves the right to take over the work and complete it by contract or otherwise, and may take possession of and use any records necessary for completing the work. Professional shall be liable for any damage to the City resulting from Professional's refusal or failure to complete the work within the specified time, whether or not Professional's right to proceed with the work is terminated. This liability includes any increased costs incurred by the City in completing Professional's work.
- b. Professional shall not be charged with damages under the preceding subsection if:
  - (1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the professional. Examples of such causes include (i) acts of God or of the public enemy, (ii) acts of the Government in either its sovereign or contractual capacity, (iii) acts of another Contractor or Professional in the performance of a contract with the Government, and/or extended review or approvals by government agencies out of the control of the Professional, (iv) acts of fire, (v) floods, (vi) epidemics, (vii) quarantine restrictions (viii) strikes, (ix) freight embargoes, (x) unusually severe weather, or (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of the professional; and
  - (2) Professional, within ten days from the beginning of any delay (unless extended by the City's Representative), notifies the City's Representative in writing of the causes of delay. The City's Representative shall ascertain the facts and the extent of delay. If, in the judgment of the City's Representative, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the City's Representative shall be final and conclusive on the parties, but subject to appeal to the City's Board of Construction Board of Adjustments and Appeals.



- c. The rights and remedies of the City in this section are in addition to any other rights and remedies provided by law or under this Agreement.

**20. Governing Law**

This Agreement has been made under and shall be governed by the laws of the state of Texas. The parties further agree that performance and all matters related thereto shall be in Galveston County, Texas.

**21. Notices**

Notices required under this Agreement shall be mailed to the addresses designated below or such other addresses as the either of the parties may designate in writing from time to time, and unless otherwise indicated in this Agreement, shall be deemed received when sent postage prepaid U.S. Mail to the following addresses:

For the City:  
City of League City, Texas  
300 West Walker Street  
League City, Texas 77573  
Attention: City Administrator

For the Professional:  
CDM  
3050 Post Oak Blvd, Suite 300  
Houston, Texas 77056  
Attention: Jeffrey S. Peters, P.E.

**22. Waiver**

No waiver by either party to this Agreement of any term or condition of this Agreement shall be deemed or construed to be a waiver of any other term or condition or subsequent waiver of the same term or condition.

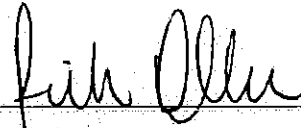


23. Complete Agreement

This Agreement represents the entire and integrated agreement between the City and Professional in regard to the subject matter hereof and supersedes all prior negotiations, representations or agreements, either whether written or oral, on the subject matter hereof. This Agreement may only be amended by written instrument approved and executed by both of the parties. The City and Professional accept and agree to these terms.

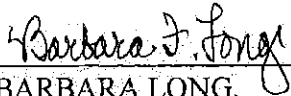
SIGNED ON THE 16<sup>th</sup> day of June, 2011.

CITY OF LEAGUE CITY, TEXAS



Rich Oller  
ACM - Public Works

ATTEST:



BARBARA LONG,  
City Secretary

SIGNED ON THE 23<sup>rd</sup> day of June, 2011.

CAMP DRESSER & MCKEE INC.



By:

Chris Canonico, P.E.  
Vice President



**EXHIBIT "A"**

**FURTHER DESCRIPTION OF ENGINEERING  
SERVICES AND RELATED MATTERS  
FOR  
WATER SYSTEM IMPROVEMENTS, REDUNDANCY, AND SOURCE  
DETAILED SCOPE OF SERVICES  
FOR  
CITY OF LEAGUE CITY (OWNER)  
AND CAMP DRESSER & MCKEE, INC. (ENGINEER)**

**PROJECT UNDERSTANDING**

The ENGINEER understands the scope of the project to include specific improvements to improve dry/peak demand performance and the addition of needed and necessary redundancy improvements to the City of League City water supply and delivery system. Specific improvements include:

1. High service booster pump improvements and expansion of the State Highway (SH) 3 Booster Pump Station to meet current and future (Year 2020 scenario with no additional water source as described in the Water Master Plan) water demands as well as providing for a more reliable system;
2. Addition of a Low Service booster pump station/system at the SH 3 Facility for the purposes of pumping treated potable water through the transmission line described in No. 3 below to the South Shore Harbour Booster Pump Station for the purpose of providing an additional and redundant conveyance system of potable water; and
3. Metering station upgrades at the SH 3 Booster Pump Station as well as a new water transmission line from the SH 3 Booster Pump Station to the South Shore Harbour Booster Pump Station for the purpose of providing an additional and redundant conveyance system of potable water.

As such, these scopes have been divided into specific sections with additional scope detail as described below.

**I. STATE HIGHWAY 3 BOOSTER PUMP STATION IMPROVEMENTS  
ENGINEERING SERVICES**

The Project includes engineering design services, bid package preparation and engineering services during construction for the City of League City SH 3 Booster Pump Station Improvements. The SH 3 Booster Pump Station is a 16.5 million gallon per day (MGD) potable water booster pump station that currently delivers approximately 90% of the City's potable water. The facility will be expanded/upgraded in accordance with the Phase I improvements



(year 2020 with no additional raw water) recommended in the current water master plan as well as upgraded to meet current codes and standards. The project generally includes the following:

1. Evaluation and assessment of usability and sequencing of existing ground storage and high service booster pumps
2. Addition of 6 million gallons (MG) of ground storage through a combination of two (2) new 3 MG prestressed concrete tanks.
3. Provide a total high service firm capacity of 17,300 gpm (24.9 MGD) at a design pressure of approximately 73 psi (as determined by the water master plan) through new horizontal split case pump(s).
4. Evaluation of the existing high service pumps, their condition, and recommendation for replacement or refurbishment.
5. New Low Service pump station with a total firm capacity of 5,200 gpm (7.3 MGD) at a design pressure of approximately 60 psi (as determined by the water master plan) through new horizontal split case pump(s).
6. New pre-engineered metal pump building and CMU or pre-cast concrete electrical building as necessary to house the new electrical components.
7. Diesel Generator for Backup with automatic transfer switch.
8. Replacement of the existing incoming waterline meter station based on current and expansion capability for increased flows. This point is defined as the "Point of Beginning (POB)". Any upgraded to the Meter station will conform to City of Houston design requirements.

#### **Task I.1 - Project Management**

- 1.1. Coordinate with staff and project personnel to complete project tasks and meet project objectives;
- 1.2. Develop and maintain a project schedule with detailed milestones; and
- 1.3. Provide quality control reviews and technical reviews of all evaluations and recommendations, technical memoranda, and reports.
- 1.4. Project Initiation Meeting to clarify requirements of project
- 1.5. Conduct project meetings with staff monthly and provide appropriate minutes of the meetings and necessary documentation;

All meetings are assumed to be 4 hours of the project manager and one project engineer inclusive of travel time.



### **Task I.2 - Preliminary Engineering**

- 2.1 ENGINEER conduct site visit to review existing infrastructure.
- 2.2 ENGINEER shall evaluate current pump operations for existing and future conditions and provide a phased implementation plan to build out including the desired interim and ultimate capacity. Flow and pressure data from the water master plan will be used for the interim and ultimate capacity plans.
- 2.3 ENGINEER shall prepare a preliminary technical memorandum for SH 3 Booster Pump Station and shall include the following information:
  - Site Layout
  - Equipment Listings
  - One Line Diagram
  - Block Diagram
  - Process Flow Diagram
  - Facility Design Criteria
  - Schedule of Final Design/Construction
  - Control Strategies
  - Documentation necessary for TCEQ coordination.
- 2.4 Ultimately, the ENGINEER will develop and provide detailed design drawings and specifications for purposes of bidding the project for construction. In the preliminary design phase the drawings will consist of general arrangement site drawings, block diagrams, process flow diagrams, electrical one-line diagrams, and process and instrumentation diagrams.
- 2.6 Coordination with the Electrical Service Utility Company will be performed for service requirements for the pump station expansion.
- 2.7 ENGINEER shall submit a preliminary estimate of probable construction cost with the preliminary engineering report.
- 2.8 If available, OWNER shall provide copies of existing vulnerability assessment for use in security design of expansion.
- 2.9 The Engineer shall submit five (5) copies of the draft technical memo. After receipt of review comments, the Engineer shall incorporate review comments, as appropriate, and submit three (3) copies of the final technical memo.

### **Task I.3 - Final Design Phase Services**

- 3.1 Preparation of 60% Drawings - ENGINEER will perform the following tasks to prepare the preliminary design of the Project:
  - 3.1.1 Establish horizontal and vertical alignments;



- 3.1.2 Provide Site Layout, Electrical Layouts and Loads, Structural Requirements and Mechanical Tie-ins. SCADA and Instrumentation shall be shown.
- 3.1.3 Establish pipe profiles, flow lines, and ground profiles for the approved horizontal pipe alignment.
- 3.1.4 Establish structural and architectural designs, mechanical equipment and piping arrangements, electrical space requirements, HVAC space requirements, piping alignments, and other mechanical equipment arrangements, pipe profiles, flow lines, and ground profiles for the approved horizontal pipe alignment.
- 3.1.5 Prepare an opinion of probable construction costs based on the preliminary design definition;
- 3.1.6 Update the Project schedule and forward to the OWNER for review;
- 3.1.7 Meet with the OWNER to discuss progress and status of the 60% design for solicitation of feedback and comments and reach consensus on refinement and revision needs;
- 3.1.8 Incorporate OWNER comments into the 60% design package;
- 3.1.9 Submit three sets of 11"x17" preliminary drawings and technical specifications (60% complete) to the OWNER for revision and comment.
- 3.2 Preparation of Final Design - ENGINEER will perform the following tasks to progress the preliminary design of the Project to the final design level.
  - 3.2.1 Revise the preliminary (60% complete) drawings and specifications by incorporating comments from the OWNER and City of Houston (where applicable to comply with interconnect agreement);
  - 3.2.2 Finalize the drawings for the proposed improvements;
  - 3.2.3 Incorporate standard details into the drawing set and prepare additional details as required;
  - 3.2.4 Submit three sets of 11"x17" final drawings and specifications (100% complete) and associated quantity "takeoff" estimates to the OWNER for review;
  - 3.2.5 Meet with the OWNER to discuss the final drawings (100% complete) and associated quantity "takeoff" estimates; and
  - 3.2.6 Prepare erosion control plans to comply with the TCEQ Storm Water Management Program. Costs for these services are listed under Additional or Special Services.



#### **Task I.4 - Bid Phase Services**

- 4.1 Preparation of Opinion of Probable Construction Costs - ENGINEER will prepare a final opinion of probable construction cost using the quantities defined by the final design. Opinion of Probable costs will be based on material, equipment and labor prevailing at the time of preparation without consideration for inflation and/or raw material increases that may occur.
- 4.2 Preparation of Final Bid Documents - ENGINEER will finalize the Project's bid documents. Final bid documents will include proposal forms, construction drawings, specifications, and other contract documents (as required). ENGINEER will distribute bid documents in electronic format (pdf on CD) at non-refundable deposit from bidders at industry acceptable cost for reproduction.
- 4.3 Assistance in Bid Advertisement Process - ENGINEER will, as required, assist the OWNER in advertising for bids. Assistance does not include a requirement for the ENGINEER to pay for the advertisement. The OWNER will pay for the advertisement.
- 4.4 Addenda and Contract Interpretation. Interpret construction contract documents. Prepare and issue addenda to the construction contract documents when required. A total of three addenda are anticipated for each contract.
- 4.5 Assistance in Bid Tabulation Process - ENGINEER will assist the OWNER in opening bids and in the preparation of a bid tabulation for all bidders. ENGINEER shall prepare an engineer's letter of recommendation that includes certified bid tabulation, including ENGINEER's opinion of probable cost and review of Contractor's
  - 4.5.1 Past work history;
  - 4.5.2 Financial resources; and
  - 4.5.3 Physical resources to construct the Project.
- 4.6 Project Manual - ENGINEER shall produce and transmit to the selected Contractor five (5) sets of project manuals ready for execution and three (3) sets of plans to the Contractor after contracts are executed at Pre-Construction Meeting.

#### **II. PIPELINE ENGINEERING SERVICES**

The Project includes alignment and final engineering design services, bid package preparation and engineering services during construction for the connection from the SH 3 Booster Pump Station to the South Shore Harbour Booster Pump Station. The project generally includes the following:

1. Review the alignment provided by the City of League City for the proposed water transmission main from SH 3 Booster Pump Station to the South Shore Harbour Booster Pump Station and offer comments as necessary.



2. New water transmission line from the Point of Beginning (POB) to the South Shore Booster Pump Station (Point of Ending, POE) located on the north side of FM 518 near the intersection of FM 518 and Louisiana Street. The route to the Point of Ending shall roughly be:
  - a. From POB, following east along NASA bypass, crossing SH 3 and Old Galveston Road, across undeveloped property to Henderson Ave. Thence turning south along SH 270 and across Clear Creek, thence turning east southeast along the existing Centerpoint/Texas New Mexico power transmission easement to FM 2094, thence turning south southeast along an apparent pipeline easement to the South Shore Booster Pump Station located just before FM 518.
  - b. Pipeline assumes four TxDOT crossings, aerial crossing of Clear Creek along 270, parallel with Centerpoint/Texas New Mexico ROW/easement, parallel to unknown pipeline easement, and one tunnel crossing of an unknown tributary of Clear Creek in Galveston County. All other non-TxDOT roads are assumed to be bored with no casing. All TxDOT crossing assume to be bored with casing.
  - c. Pipeline material is assumed to be PVC or polywrapped DI pipe. Should an alternate material be selected requiring additional corrosion protection, those services will be provided as an additional service, i.e. Cathodic protection on a welded steel pipeline.

#### **Task II.1 - Project Management**

- 1.1. Coordinate with staff and project personnel to complete project tasks and meet project objectives;
- 1.2. Develop and maintain a project schedule with detailed milestones; and
- 1.3. Provide quality control reviews and technical reviews of all evaluations and recommendations, technical memoranda, and reports.
- 1.4. Unique Meetings
  - 1.4.1 Project Initiation Meeting to clarify requirements of project
  - 1.4.2 ENGINEER will meet with OWNER and City of Houston to review pipeline design and interconnect options.
  - 1.4.3 ENGINEER will meet with adjacent communities (City of Webster, City of Nassau Bay) as necessary for plan approval.
  - 1.4.4 Conduct project meetings with staff monthly and provide appropriate minutes of the meetings and necessary documentation;
  - 1.4.5 Pipeline Alignment Selection Meeting



#### 1.4.6 Draft Summary Report Progress Meeting

All meetings are assumed to be 4 hours of the project manager and one project engineer.

#### Task II.2 - Alignment Selection

CDM will review the alignment provided by the City of League City and review in accordance with the assumed alignment described in this scope. City and CDM agree to re-negotiate scope/fee pending any significant changes to the assumed preliminary alignment described in the scope.

#### Task II.3 - Design Phase Services

3.1 Preparation of 60% Drawings - ENGINEER will perform the following tasks to prepare the preliminary design of the Project:

- 3.1.1 Establish horizontal and vertical alignments;
- 3.1.2 Locate utility crossings from record drawings and field surveys, including nearby utilities, and other nearby improvements;
- 3.1.3 Establish pipe profiles, flow lines, and ground profiles for the approved horizontal pipe alignment. Waterline details and embedment details will be shown on detail sheets;
- 3.1.4 Identify areas where existing utilities may conflict and verify clearances. Subsurface Utility Engineering (SUE) methods as directed by OWNER are not a part of basis services and are considered additional services;
- 3.1.5 Identify types of construction required along the alignment;
- 3.1.6 Identify permanent and construction easement requirements (including widths and properties affected) and prepare a right-of-way map;
- 3.1.7 Prepare an opinion of probable construction costs based on the preliminary design definition;
- 3.1.8 Update the Project schedule and forward to the OWNER for review;
- 3.1.9 Submit Summary Report alignment to the private utility companies for review and comment;
- 3.1.10 Meet with the OWNER to discuss schematic level design comments and reach consensus on refinement and revision needs;
- 3.1.11 Distribute the drawings to private utility companies for review and comment;
- 3.1.12 Incorporate OWNER comments into the schematic level design;



- 3.1.13 Submit three sets of 11"x17" preliminary drawings (60% complete) to the OWNER and other necessary entities for revision and comment.
- 3.2 Preparation of Final Design - ENGINEER will perform the following tasks to progress the preliminary design of the Project to the final design level:
  - 3.2.1 Revise the preliminary (60% complete) drawings by incorporating comments from the OWNER and City of Houston;
  - 3.2.2 Incorporate comments from the franchise utility companies;
  - 3.2.3 Finalize the drawings for the proposed improvements;
  - 3.2.4 Incorporate standard details into the drawing set with approved revisions as necessary and prepare additional details as required;
  - 3.2.5 Submit three sets of 11"x17" final drawings (100% complete) and associated sheet by sheet quantity "takeoff" estimates to the OWNER for review;
  - 3.2.6 Meet with the OWNER to discuss the final drawings (100% complete) and associated sheet by sheet quantity "takeoff" estimates; and
  - 3.2.7 Prepare erosion control plans to comply with the TCEQ Storm Water Management Program.
  - 3.2.8 Prepare contract documents

#### **Task II.4 - Bid Phase Services**

- 4.1 Preparation of Opinion of Probable Construction Costs - ENGINEER will prepare a final opinion of probable construction cost using the quantities defined by the final design. Opinion of Probable costs will be based on material, equipment and labor prevailing at the time of preparation without consideration for inflation and/or raw material increases that may occur.
- 4.2 Preparation of Final Bid Documents - ENGINEER will finalize the Project's bid documents. Final bid documents will include proposal forms, construction drawings, specifications, and other contract documents (as required). ENGINEER will distribute bid documents in electronic format (pdf on CD) at non-refundable deposit from bidders at industry acceptable cost for reproduction.
- 4.3 Assistance in Bid Advertisement Process - ENGINEER will, if required, assist the OWNER in advertising for bids. Assistance does not include a requirement for the ENGINEER to pay for the advertisement. The OWNER will pay for the advertisement.
- 4.4 Pre-Bid Conference. ENGINEER shall lead pre-bid conference and prepare meeting minutes for distribution as an addenda.



- 4.5 Addenda and Contract Interpretation. Interpret construction contract documents. Prepare and issue addenda to the construction contract documents when required. A total of three addenda are anticipated for each contract
- 4.6 Assistance in Bid Tabulation Process - ENGINEER will, if requested, assist the OWNER in opening bids and will prepare a bid tabulation for all bidders. ENGINEER will prepare an engineer's letter of recommendation that includes certified bid tabulation, including ENGINEER's opinion of probable cost and review of Contractor's
  - 4.5.1 Past work history;
  - 4.5.2 Financial resources; and
  - 4.5.3 Physical resources to construct the Project.
- 4.7 Project Manual - ENGINEER shall produce and transmit to the selected Contractor five (5) sets of project manuals ready for execution and three (3) sets of plans to the Contractor after contracts are executed at Pre-Construction Meeting.

### **III. ADDITIONAL & SPECIAL SERVICES**

Additional Services shall be provided on as-needed basis described below. In several cases, the scopes will apply to both the SH 3 Booster Pump Station upgrades as well as the pipeline. Costs for each additional and special services have been provided separately for the each project.

#### **Task III.1 - Design Services During Construction**

ENGINEER will perform administration services during the construction phase of the project. By performing these services, ENGINEER shall not have authority or responsibility to supervise, direct, or control the Contractor's work or the Contractor's means, methods, techniques, sequences, or procedures of construction. ENGINEER shall not have authority or responsibility for safety precautions and programs incident to the Contractor's work or for any failure of the Contractor to comply with laws, regulations, rules, ordinances, codes, or orders applicable to the Contractor furnishing and performing the work. Specific services to be performed by ENGINEER are as follows:

- 1.1 At a date and time selected by the OWNER and at a facility provided by OWNER, chair a preconstruction conference. ENGINEER shall prepare an agenda for the conference, and prepare and distribute minutes. The preconstruction conference will include a discussion of the Contractor's tentative schedules, procedures for transmittal and review of the Contractor's submittals, processing payment applications, critical work sequencing, change orders, record documents, and the Contractor's responsibilities for safety and first aid.
- 1.2 Review and comment on the Contractor's initial and updated construction schedule and advise OWNER as to acceptability.
- 1.3 Analyze Contractor's construction schedule, activity sequence, and construction procedures with regard to OWNER's ability to keep existing facilities in operation.



- 1.4 Make periodic visits to the construction site to observe progress of the work, and consult with OWNER, and the Contractor concerning problems and/or progress of the work. A total of 18 site visits is anticipated.
- 1.5 Perform technical and functional review of shop drawings and other data submitted by the Contractor as required by the construction contract documents. ENGINEER's review shall be for general conformity to the construction contract documents and shall not relieve the Contractor of any of his contractual responsibilities. Such reviews shall not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions and programs incident thereto. Engineer will log-in, track, and distribute submittals to the various disciplines and SUBENGINEERS.
- 1.6 Interpret construction contract documents when requested by OWNER or the Contractor.
- 1.7 Provide documentation and administer the processing of change orders, including applications for extension of construction time. Evaluate the cost and scheduling aspects of all change orders and, where necessary, negotiate with the Contractor to obtain a fair price for the work. Said negotiation shall be subject to the approval of OWNER. Work related to unusually complex or unusually numerous claims shall be considered Additional Services.
- 1.8 ENGINEER will prepare Record Documents for the Project. ENGINEER will complete this task utilizing the as-built information provided by the Construction Contractor, and the information resulting from RFIs and other Construction Contractor generated submittals. ENGINEER will prepare one set of reproducible record drawings for the OWNER, including a copy of the construction plan sheets in electronic format on compact diskette.
- 1.9 Upon substantial completion, inspect the construction work and prepare a list of the items to be completed or corrected before final completion of the project. Submit results of the inspection to OWNER and the Contractor.
- 1.10 Upon completion or correction of the items of work on the list, conduct a final inspection to determine if the work is completed. Provide written recommendations concerning final payment to OWNER, including a list of items, if any, to be completed prior to making such payment.

#### **Task II.1- Resident Engineering Services**

- 2.1 ENGINEER shall furnish a Resident Project Representative (RPR), assistants and other field staff to assist ENGINEER in observing progress and quality of the work of Contractor.
- 2.2 Through more extensive on-site observations of the work in progress and field checks of materials and equipment by the RPR and assistants, ENGINEER shall endeavor to provide further protection for OWNER against defects and deficiencies in the work of Contractor. However, ENGINEER shall not, during such visits or as a result of such observations of Contractor's work in progress, supervise, direct, or have control over Contractor's work nor



shall ENGINEER have authority over or responsibility for the means, methods, techniques, sequences or procedures selected by Contractor, for safety precautions and programs incident to the work of Contractor, for any failure of Contractor to comply with laws, rules, regulations, ordinances, codes or orders applicable to Contractor's performing and furnishing the work, or responsibility of construction for Contractor's failure to furnish and perform the Work in accordance with the Contract Documents.

- 2.3 The duties and responsibilities of the RPR are limited to those of ENGINEER in ENGINEER's agreement with the OWNER and in the construction Contract Documents, and are further limited and described as follows:

#### 2.4 General

- 2.4.1 RPR is ENGINEER's agent at the site, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the on-site work shall in general be with ENGINEER and Contractor, keeping OWNER advised as necessary. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with OWNER with the knowledge of and under the direction of ENGINEER.

#### 2.5 Duties and Responsibilities of RPR

- 2.5.1 Schedules: Review the progress schedule, schedule of Shop Drawing submittals and schedule of values prepared by Contractor and consult with ENGINEER concerning acceptability.
- 2.5.2 Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.
- 2.5.3 Liaison:
- 2.5.3.1 Serve as ENGINEER's liaison with Contractor, working principally through Contractor's superintendent and assist in understanding the intent of Contract Documents; and assist ENGINEER in serving as OWNER's liaison with Contractor when Contractor's operations affect OWNER's onsite operations.
- 2.5.3.2 Assist in obtaining from OWNER additional details or information, when required for proper execution of the Work.
- 2.5.4 Shop Drawings and Samples:
- 2.5.4.1 RPR shall maintain a tracking log of Submittals, Shop Drawings and Samples.



- 2.5.4.2 Receive Samples which are furnished at the site by Contractor, and notify ENGINEER of availability of Samples for examination.
- 2.5.4.3 Advise ENGINEER and Contractor of the commencement of any Work requiring a Shop Drawing or Sample if the submittal has not been approved by ENGINEER.
- 2.5.5 Review of Work, Rejection of Defective Work, Inspections and Tests:
  - 2.5.5.1 Conduct on-site observations of the Work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents.
  - 2.5.5.2 Report to ENGINEER whenever RPR believes that any Work will not produce a completed Project that conforms generally to the Contract Documents or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise ENGINEER of Work that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
  - 2.5.5.3 Verify that tests, equipment and systems start-up and operating and maintenance training are conducted in accordance with the Contract Documents in the presence of appropriate personnel, and that Contractor maintains adequate records thereof; and observe, record and report to ENGINEER appropriate details relative to the test procedures and start-ups.
  - 2.5.5.4 Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to ENGINEER.
- 2.5.6 Interpretation of Contract Documents: Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by ENGINEER.
- 2.5.7 Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report with RPR's recommendations to ENGINEER. Transmit to Contractor in writing decisions as issued by ENGINEER.
- 2.5.8 Records:
  - 2.5.8.1 Maintain at the job site orderly files (using City file codes) for correspondence, reports of job conferences, Shop Drawings and Samples, reproductions of original Contract Documents including all Addenda, Change Orders, RFIs, additional Drawings issued subsequent to the execution of the Contract, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, Shop



Drawing submittals received from and delivered to Contractor and other Project related documents.

2.5.8.2 Prepare a daily report and keep a diary or log book, recording Contractor's hours on the job site, weather conditions, data relative to questions of Work Change Directives, Change Orders or changed conditions, list of job site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to ENGINEER.

2.5.8.3 Record names, addresses and telephone numbers of all Contractors, subcontractors and major suppliers of materials and equipment, provide the information to the OWNER and provide updates if such information changes.

2.5.9 Reports:

2.5.9.1 Furnish to ENGINEER monthly reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.

2.5.9.2 Consult with ENGINEER and OWNER in advance of scheduled major tests, inspections or start of important phases of the Work.

2.5.9.3 Draft proposed Change Orders and Work Change Directives, obtaining backup material from Contractor and recommend to ENGINEER Change Orders, Work Change Directives, and RFIs.

2.5.9.4 Report immediately to ENGINEER and OWNER the occurrence of any accident.

2.5.10 Payment Requests: Review Applications for Payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to ENGINEER, noting particularly the relationship of the payment requested to the schedule of values, Work completed and materials and equipment delivered at the site but not incorporated in the Work.

2.5.11 Certificates, Maintenance and Operation Manuals: During the course of the Work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to ENGINEER for review and forwarding to OWNER as required in the Contract Documents.

2.5.12 Completion:

2.5.12.1 Before ENGINEER issues a Certificate of Substantial Completion, coordinate with the Contractor to prepare a list of observed items requiring completion or correction.



2.5.12.2 Observe whether Contractor has had performed inspections required by laws, rules, regulations, ordinances, codes, or orders applicable to the work, including but not limited to those to be performed by public agencies having jurisdiction over the work.

2.5.12.3 Conduct a final inspection in the company of ENGINEER, OWNER and Contractor and prepare a final list of items to be completed or corrected.

2.5.12.4 Observe whether all items on final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance and issuance of the Final Completion Certificate.

## 2.6. Limitations of Authority by RPR

2.6.1 Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items), unless authorized by ENGINEER and OWNER.

2.6.2 Shall not exceed limitations of ENGINEER's authority as set forth in the Agreement or the Contract Documents.

2.6.3 Shall not undertake any of the responsibilities of Contractor, Subcontractors, Suppliers, or Contractor's superintendent.

2.6.4 Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.

2.6.5 Shall not advise on, issue directions regarding or assume control over safety precautions and programs in connection with the Work.

2.6.6 Shall not accept Shop Drawing or Sample submittals from anyone other than Contractor.

2.6.7 Shall not authorize OWNER to occupy the Project in whole or in part.

2.6.8 Shall not participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by ENGINEER.

## Task III.3 - Permits

3.1 ENGINEER will meet with OWNER and City of Houston to review collaborative options for partnering on the meter vault improvements (if necessary).

3.2 ENGINEER shall prepare permit applications for the following known entities (if necessary):



- U.S. Army Corps of Engineers
- Texas Commission of Environmental Quality 401
- Texas Commission of Environmental Quality - Water Infrastructure
- City of Webster
- City of Nassau Bay
- City of Houston
- TXDOT
- HCFC
- Texas Historical Commission

#### **Task III.4 - Storm Water Pollution Prevention Plan**

ENGINEER will prepare a Storm Water Pollution Prevention Plan for the project in accordance with the conditions of the General Permit for Storm Water Discharges from Construction Activity pursuant to TCEQ TPDES Program.

#### **Task III.5 - Phase 1 ESA**

ENGINEER shall perform a Phase I Environmental Site Assessment along the proposed water transmission main alignment. The assessment will include review of records, photographs, and documents to identify possible contamination sites along the alignment. The Phase 1 ESA shall be conducted to City of League City standards. A report describing the findings of the assessment will be prepared.

#### **Task III.6 - Wetland, Endangered Species, and Archeological**

ENGINEER shall perform the following services for the proposed alignment:

- Wetland Determination
- Endangered Species Assessment
- Nationwide Permit Application Preparation (Corps of Engineers)

ENGINEER shall provide mapping and other technical assistance for the preparation of the environmental reports and permit applications.

#### **Task III.7 - Transient Surge Analysis on Interconnect Piping**

ENGINEER shall conduct a surge analysis on the proposed interconnect between the City of Houston (at the SH 3 Booster Pump Station) and City of League City (South Shore Harbour Booster Pump Station) to determine design provisions necessary to control unavoidable surge events.



#### ***IV. ITEMS NOT INCLUDED IN THE EXISTING SCOPE OF SERVICES***

Additional Services not included in the existing Scope of Services – OWNER and ENGINEER agree that the following services are beyond the Basic and Special Scope of Services described in the tasks above. However, ENGINEER may be requested in writing by the OWNER, to perform additional services if needed. Any additional amounts paid to the ENGINEER resulting from any material change to the Scope of the Project shall be agreed upon in writing by both parties before the services are performed. The Additional Services may include any one or combination of the following:

- 1.1 Relating to the Project, the parties agree that at the time of execution of the Agreement, the requirements of the Barriers Act are not applicable to the Scope of Services to be performed by ENGINEER under this Agreement.
- 1.2 Materials Testing
- 1.3 Computer modeling of water systems (unless otherwise specified above)
- 1.3 Plats
- 1.4 Environmental remediation, USACOE 404 Individual, Regional Permits or Mitigation Plans
- 1.5 Archeological excavations or analysis of any kind
- 1.6 Fees and permits and Bid Advertising services requested by the OWNER in writing that exceed the amounts specified in the Project Budget
- 1.7 Traffic engineering reports and/or studies requested by the OWNER in writing that exceed the amounts specified in the Project Budget
- 1.8 Hydraulics and Hydrology modeling for any ditch or drainage way that may be crosses by pipelines included in this scope.
- 1.9 Floodplain studies or reclamation plans (Federal Emergency Management Administration, Conditional Letter of Map Removal, and Letter of Map Removal)
- 1.10 Construction Administration Services requested by the OWNER in writing that exceed the amounts specified in the Project Budget
- 1.11 Trench Safety design
- 1.12 Retaining Walls
- 1.13 Quality Control and Testing services during construction beyond what is already listed in the scope.



- 1.14 On-site safety precautions, programs, and responsibility
- 1.15 Landscape and irrigation design
- 1.16 Television inspection and metering services
- 1.17 Wetlands Delineation beyond what is already listed in the scope.
- 1.18 Right-of-Way Acquisition Services
- 1.19 Services in connection with condemnation hearings
- 1.20 Any level of SUE work.
- 1.21 Vulnerability Assessments
- 1.22 Tree Mitigation Plans and/or Approvals
- 1.23 SCADA Radio Surveys
- 1.24 Application Engineering
- 1.24 Evaluation for supplemental disinfection.
- 1.25 Geotechnical Evaluations or Reports
- 1.26 Cathodic protection design for pipelines
- 1.27 Traffic Control Plans
- 1.28 Topographic Survey

## **V. SCHEDULE**

1. A detailed schedule will be completed after authorization and a prioritization meeting with the OWNER.
2. Assumptions include:
  - ENGINEER assumes that OWNER will provide review comments within 10 calendar days of submission.
  - Permit Agencies shall provide comments and permit acceptance without undue reason within 10 days of final drawings
  - No delay in access to parcels for survey or geotechnical investigation



## **VI. FEE SCHEDULE**

1. The costs for Basic Services, shall be on a not to exceed Lump Sum basis based on the amounts shown in **Table A-3** and will be billed on a percent complete basis in accordance with the scope of services for each milestone.
2. The costs for Additional & Special Services shall be on a not to exceed reimbursable basis based on hourly rates shown in **Table A-1**, plus all non-salary expenses at the incurred cost plus 5% charge to cover overhead, administration, and other indirect costs as listed **Table A-2**,
3. Total Fees shall not exceed \$1,600,000 as shown in **Table A-3**.
4. Services for these tasks shall be commenced immediately upon written authorization and notice to proceed from the City.

Services for all tasks shall be as authorized as the City issues notice to proceeds on each individual task. As some reimbursable tasks are allowances for future work, the ENGINEER may receive approval to transfer excess budget from one task to another with the approval of the City.

## **VII. PAYMENT SCHEDULE**

1. Engineer shall prepare monthly invoice for work completed.
2. Payment for additional services shall be for reimbursable costs accrued at the time of each invoice.



**TABLE A-1**  
**TO AGREEMENT BETWEEN ENGINEER AND OWNER**  
**FOR**  
**PROFESSIONAL SERVICES**  
**FOR**  
**DESIGN AND CONSTRUCTION PHASE SERVICES**  
**FOR**  
**CITY OF LEAGUE CITY**  
**STATE HIGHWAY 3 BOOSTER PUMP STATION IMPROVEMENTS**  
  
**HOURLY LABOR RATES**

LABOR CATEGORY	Hourly Rate
Principal	\$200.00
Sr. Tech Specialist (QA/QC)	\$197.00
Technical Director	\$175.00
Sr. Project/Project Manager	\$165.00
Discipline Manager	\$175.00
Electrical/Instrumentation Engineer	\$165.00
Structural Engineer	\$165.00
Engineer 5	\$150.00
Engineer 3/4	\$135.00
Engineer 1/2	\$120.00
Senior Designer/Drafter	120.00
Drafter	\$90.00
Sr. GIS Technician	\$120.00
GIS Technician	\$90.00
Senior Administrative Personnel	\$100.00
Administrative Accounting	\$90.00



**TABLE A-2**  
**TO AGREEMENT BETWEEN ENGINEER AND OWNER**  
**FOR**  
**PROFESSIONAL SERVICES**  
**FOR**  
**DESIGN AND CONSTRUCTION PHASE SERVICES**  
**FOR**  
**CITY OF LEAGUE CITY**  
**STATE HIGHWAY 3 BOOSTER PUMP STATION IMPROVEMENTS**  
**REIMBURSABLE COSTS**

Item	Unit Cost
Photocopies (8-1/2x11 B&W single sided)	\$0.11
Photocopies (8-1/2x11 B&W double sided)	\$0.22
Photocopies (8-1/2x11 color)	\$1.10
Photocopies (11x17 B&W single sided)	\$0.17
Mylar Plots (each)	22.00
Color Plots (24x36)	22.00
Bluelines (each)	1.10
CADD Computer Allocation (per hour)	12.50
Mileage	0.50 <sup>3</sup>
<b>Notes:</b> 1. All other reimbursable costs will be invoiced at actual cost plus 5%. 2. All outside professionals will be invoiced at actual cost plus 5% mark-up. 3. Subject to revision in accordance with the U.S. Federal Government General Services Administration for mileage reimbursement for automobiles.	



**TABLE A-3**  
**TO AGREEMENT BETWEEN ENGINEER AND OWNER**  
**FOR PROFESSIONAL SERVICES**  
**FOR DESIGN AND CONSTRUCTION PHASE SERVICES**  
**FOR**  
**CITY OF LEAGUE CITY**  
**STATE HIGHWAY 3 BOOSTER PUMP STATION IMPROVEMENTS**  
**DESIGN FEE SCHEDULE**

<b>Task No.</b>	<b>Task Description</b>	<b>Totals \$</b>
<b>I.</b>	<b>Lump Sum - SH 3 Booster Pump Station Basic Engineering Services</b>	
I.1	Phase I Engineering and Control Strategy	\$25,000
I.2	Final Design Phase Services	\$475,000
I.3	Bid Phase Services	\$15,000
	<b>Subtotal</b>	<b>\$515,000</b>
<b>III.</b>	<b>SH 3 Booster Pump Station Max. Additional &amp; Special Services (hourly)</b>	
III.1	Design Phase Services During Construction	\$120,000
III.2	Resident Engineering Services (During Construction On-Site)	\$175,000
III.3	Permit/City of Houston Coordination	\$10,000
III.4	Storm Water Pollution Prevention Plan	\$10,000
III.5	Transient Surge Analysis for Existing 42-in Distribution Line	\$20,000
	<b>Subtotal</b>	<b>\$335,000</b>
	<b>SH 3 Booster Pump Station Subtotal</b>	<b>\$850,000</b>
<b>II.</b>	<b>Lump Sum - Pipeline Basic Engineering Services</b>	
II.1	Preliminary Hydraulic Model/Calculations	\$100,000
II.2	Design Phase Services	\$335,000
II.3	Bid Phase Services	\$15,000
	<b>Subtotal</b>	<b>\$450,000</b>
<b>III.</b>	<b>Pipeline Special and Additional Serv's Max (hourly)</b>	
III.1	Resident Engineering Services	\$150,000
III.2	Assistance with other Gov't Permits (TxDOT, etc...)	\$30,000
III.3	Storm Water Pollution Prevention Plan	\$10,000
III.4	Phase I ESA	\$50,000
III.5	Wetland, Endangered Species, and Archeological	\$40,000
III.6	Transient Surge Analysis - New 36-inch Transmission Piping	\$20,000
	<b>Subtotal</b>	<b>\$300,000</b>
	<b>Pipeline Subtotal</b>	<b>\$750,000</b>
	<b>Total Lump Sum Services (SH 3 Pump Station and Pipeline)</b>	<b>\$965,000</b>
	<b>Total Special and Additional Services Max (Hourly)</b>	<b>\$635,000</b>





# CONTRACT

Fiscal Year 2017

Page 1 of 1

THIS NUMBER MUST APPEAR ON ALL INVOICES, PACKAGES AND SHIPPING PAPERS	
Contract #	3170664
Department	Project Management
Type	PROF SERVICE
Bonds in Lieu	N
Change Order #	2

RODNEY

CDM SMITH INC  
15036 COLLECTIONS CENTER DRIVE  
CHICAGO, IL 60693  
Email: CORMIERS@CDMSMITH.COM

## Vendor Information

Vendor Number	Vendor Contact	Vendor Email	Vendor Phone Number
132	CONTACT 1		713-423-7300

## Policy

Start	06/16/2011
Award	
Expire	12/31/2018
Renewal	
Extended	

## Notes

<b>Fiscal Year</b>	<b>2017</b>
Project	WT1109
Percent Complete	0.00
By Date	
Encumbered	Y

Item#	Description/PartNo	QTY	UOM	Unit Price	Extended Price
36"	Waterline-SH3 to SSH BPS				
Line #	Year	Account	Amount		
1	2017	13207300 56090	\$166,931.88		

By:   
Purchasing Manager

Total Available	\$166,931.88
Total Open PO	\$0.00
Total Contract Balance	\$0.00
Total Liquidated Amount	\$0.00
Total Revised	\$166,931.88
Total Original	\$166,931.88



## CITY OF LEAGUE CITY PURCHASE ORDER TERMS AND CONDITIONS

Vendors providing goods or services to the City of League City ("City") acknowledge that by delivering such goods or services they agree to the following terms and conditions. Should a formal contract be executed between City and the Vendor ("Vendor") whether as a result of a formal bid or not, the terms and conditions defined in that contract shall prevail over those listed here in any case of conflict.

1. **ACCEPTANCE:** Acceptance of this Purchase Order, including the terms and conditions set forth herein, shall constitute the formation of a binding and enforceable contract between City and Vendor. City hereby objects to and will not be bound by any different or additional terms and conditions contained in the acceptance unless each such different or additional term is expressly agreed to in writing by City. Vendor's action in (a) accepting this order, (b) delivering materials or (c) performing services called for hereunder shall constitute an acceptance of terms and conditions below on this order.
2. **INSURANCE:** All insurance requirements applicable shall be fulfilled prior to the issuance of this Purchase Order. Vendor is responsible for keeping required insurance current until service is complete.
3. **PACKING SLIPS** or other suitable shipping documents shall accompany each shipment and shall show; Vendor company name and address, name and address for City Department to which shipment is being made, City Purchase Order Number and descriptive information as to the items delivered. A City Purchase Order must be obtained by Vendor before order fulfillment takes place.
4. **INVOICES** submitted for payment shall be addressed to City of League City, Accounts Payable Dept., 300 W Walker, League City, TX 77573 and shall reference the City approved Purchase Order number.
5. **TAXES:** City is tax exempt under Texas Tax Code Section 151.309. Invoices shall not include sales tax.
6. **PAYMENT:** Payment will be made within 30 days of invoice date or satisfactory delivery of the product or service, whichever is later. City will not be liable to pay late fees or interest.
7. **CHANGES/QUANTITIES:** No changes may be made to this order without written authorization from City's purchasing representative. Exact quantities ordered should be shipped, except in instances where this is impractical such as material in bulk, uneven lengths, etc., in which case nearest amount available and not exceeding specified quantity is acceptable.
8. **BACK ORDERS:** All back orders must be approved by City's Purchasing Department. If orders cannot be timely delivered, Vendor shall immediately advise City in writing.
9. **QUALITY CONTROL:** Goods supplied as a result of this Purchase Order shall be subject to approval as to quality and must conform to the highest standards of manufacturing practice. Items found defective or not meeting specifications shall be replaced at Vendor's expense within a reasonable period of time. Payment for defective goods or goods failing to meet specifications is not due until 30 days after satisfactory replacement has been made.
10. **WARRANTY:** Vendor shall warrant that all items or services shall conform to the proposed specifications and all warranties as stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title.
11. **PATENTS:** Upon acceptance of this order, Vendor agrees to indemnify and hold the City harmless from any claim involving patent right infringements, copyrights, or sale franchises arising out of this order.
12. **SHIPPING:** All prices must be F.O.B. destination. No boxing or packing charges will be allowed by City unless specifically authorized on the face of this order.
13. **RISK OF LOSS:** Risk of loss, damage, or destruction of materials covered by this order, regardless of F.O.B. point, shall be and remain with Vendor until the goods are delivered to the destination set out in the order and accepted by City.
14. **DELIVERIES:** Delivery shall not be made to any place other than the destination indicated on the Purchase Order.
15. **CANCELLATIONS:** City reserves the right to cancel purchase orders for failure on the part of Vendor to deliver as promised, or within a reasonable time if no delivery commitment is made, unless acceptable notification of delay is given to City by Vendor.
16. **LIABILITY:** Any person, firm or corporation performing services pursuant to this Purchase Order shall be liable for all damages incurred while in performance of such services. Vendor assumes full responsibility for the work to be performed hereunder, and hereby releases, relinquishes, and discharges the City, its officers, agents and employees from all claims, demands, and causes of action of every kind and character including the cost of defense thereof, for any injury to, including death of, any person whether that person be a third person, vendor, or an employee of either party hereto or of third parties, caused by or alleged to be caused by, arising out of or in connection with the issuance of this order to Vendor, whether or not said claims, demands and causes of action in whole or in part are covered by insurance. Certificate of Insurance may be required for but not limited to Commercial General Liability, Commercial Auto Liability, Workers Compensation, and Professional Liability Insurance.
17. **APPLICABLE LAW:** This Purchase Order shall be interpreted and enforced according to the provisions of Texas Law, and Vendor shall abide by, and be in compliance with, all applicable laws, statutes, ordinances, and regulations.
18. **ETHICS ACKNOWLEDGEMENT:** Any Vendor or contractor entering into this contract or agreement with the City of League City, Texas acknowledges that it has familiarized itself with the provisions of Section 2-34(i) of the Code of Ordinances of the City of League City which provides, among other things, that if within two years after the commencement of this contract or agreement the vendor or contractor hires a city official, former city official, appointed city officer, former appointed city officer, appointed city executive employee, or former appointed city executive employee or a city employee who, while acting in such capacity had substantial and personal involvement with the negotiation of this contract or agreement, then this contract or agreement, at the option of the City Manager, be cancelled and/or the vendor or contractor shall be barred from additional contracting with the City of League City for a period of three years.