

**Meeting Date:** 6/25/2013

**Report Type:** Consent

**Report ID:** 2013-00477

**Title: Supplemental Agreement: Shasta Park Reservoir Groundwater Well and Booster Pump Station**

**Location:** District 8

**Issue:** The initial scope of work to design the groundwater well facilities at the Shasta Park Reservoir site only included the design of the underground well. To fully design the groundwater facilities, the well pumping and treatment equipment also need to be designed. This increase requires City Council approval.

**Recommendation:** Pass a Motion authorizing the City Manager or the City Manager's designee to approve Supplemental Agreement #1 to City Agreement 2012-0654, with Wood Rodgers, for additional design services for an amount not to exceed \$329,400, bringing the total agreement amount to \$630,400.

**Contact:** Bill Busath, Engineering Division Manager, (916) 808-1434; Dan Sherry, Supervising Engineer, (916) 808-1319, Department of Utilities

**Presenter:**

**Department:** Department Of Utilities

**Division:** Engineering Administration

**Dept ID:** 14001311

**Attachments:**

- 1-Description/Analysis
- 2-Background
- 3-Location Map (Shasta Park)
- 4-Site Plan (Shasta Park)
- 5-Exhibit A (Supplemental Agreement)

**City Attorney Review**

Approved as to Form  
Sheri Chapman  
6/11/2013 2:49:37 PM

**City Treasurer Review**

Reviewed for Impact on Cash and Debt  
Janelle Gray  
6/5/2013 9:44:03 AM

**Approvals/Acknowledgements**

Department Director or Designee: Dave Brent - 6/7/2013 12:55:40 PM

## **Description/Analysis:**

**Issue:** Supplemental agreement #1 to contract 2012-0654 with Wood Rodgers for the Shasta Park 4MG Reservoir and Pump Station project (Z14005400) is needed to perform the design for the project's groundwater well pumping and treatment equipment.

**Policy Considerations:** The project is consistent with both City and regional water planning efforts to provide a safe and reliable water supply.

**Economic Impacts:** None.

**Environmental Considerations:** An Initial Study, Mitigated Negative Declaration, and a Mitigation Reporting Program were prepared for this project in accordance with the California Environmental Quality Act (CEQA). The City Council adopted the Mitigated Negative Declaration and Mitigation Reporting Program on May 22, 2012 (Resolution No. 2012-138). Additional study of the project is required, but no changes are proposed in the project at this point, and no additional environmental review is required. In the event the project changes, a determination will then be made regarding the need for additional CEQA review

**Sustainability Considerations:** The project has been reviewed for consistency with the goals, policies, and targets of the Sustainability Master Plan and the 2030 General Plan. The project will advance these goals, policies, and targets by ensuring that the City continues to provide a safe, clean, and reliable water supply to its customers.

**Committee/Commission Action:** None.

**Rationale for Recommendation:** The current agreement with Wood Rodgers was for design of the Project's underground well. The initial request for qualification, and subsequent selection of Wood Rodgers, included the evaluation of the additional services covered by Supplemental Agreement No 1. Approval of Supplemental Agreement No. 1 with Wood Rodgers will allow the City to continue with the design of the project.

**Financial Considerations:** The supplemental agreement with Wood Rodgers is for the amount not-to-exceed \$329,400. Approval of this agreement will bring the total agreement amount to \$630,400, which includes the initial agreement amount of \$301,000.

There is sufficient funding available in Z14005400 for the supplemental agreement.

**Emerging Small Business Development (ESBD):** Wood Rodgers is not an ESBE firm.

## **Background**

The 2005 Water Master Plan concluded that a finished water reservoir should be constructed in the southeast portion of Sacramento to help maintain service pressure through peak demand periods, and to provide additional emergency and fire suppression water supply.

The Shasta Park 4MG Reservoir and Pump Station (Project) includes the construction, operation and maintenance of an above-ground 4 million gallon (MG) water storage tank, 2 million gallons per day (MGD) groundwater well, 2 MGD ground water treatment system, and a 15 MGD pump station. The reservoir and buildings will be constructed of reinforced concrete and decorative block. Other site improvements will include a perimeter fence, landscaping, lighting, and security system.

On May 22, 2012, City Council approved the purchase of the Project site, a 5.31 acre vacant parcel (APN 117-0182-023), which is located at the terminal end of Imagination Parkway, immediately north of the Shasta Community Park (see Attachment 3). The property purchase price was \$580,000.

In January 2012, a Request for Qualifications was issued for design services for the Project, and twelve firms submitted Statements of Qualifications. Two firms were selected by a five person panel, which included a reviewer independent of the City. The panel selected the firms most qualified to provide engineering design services: 1) Wood Rodgers was selected for design of the groundwater well, and 2) West Yost Associates was selected to evaluate the adequacy of the City's overall facility design.

The Wood Rodgers agreement (2012-0654) was approved July 12, 2012, for an amount not-to-exceed \$301,000. The scope of that design work was for phase 1, which include the below ground components of the well, such as identifying the proper well depth, determining water quality, and design of the gravel pack and casing.

Also on July 12, 2012, the City Council authorized the City Manager to enter into an agreement with the Regional Water Authority (RWA) to provide for administration of the City's \$2,280,762 in grant funding from Proposition 84. A portion of this grant, \$988,199, is allocated to help fund the groundwater well at the Shasta Park Reservoir location.

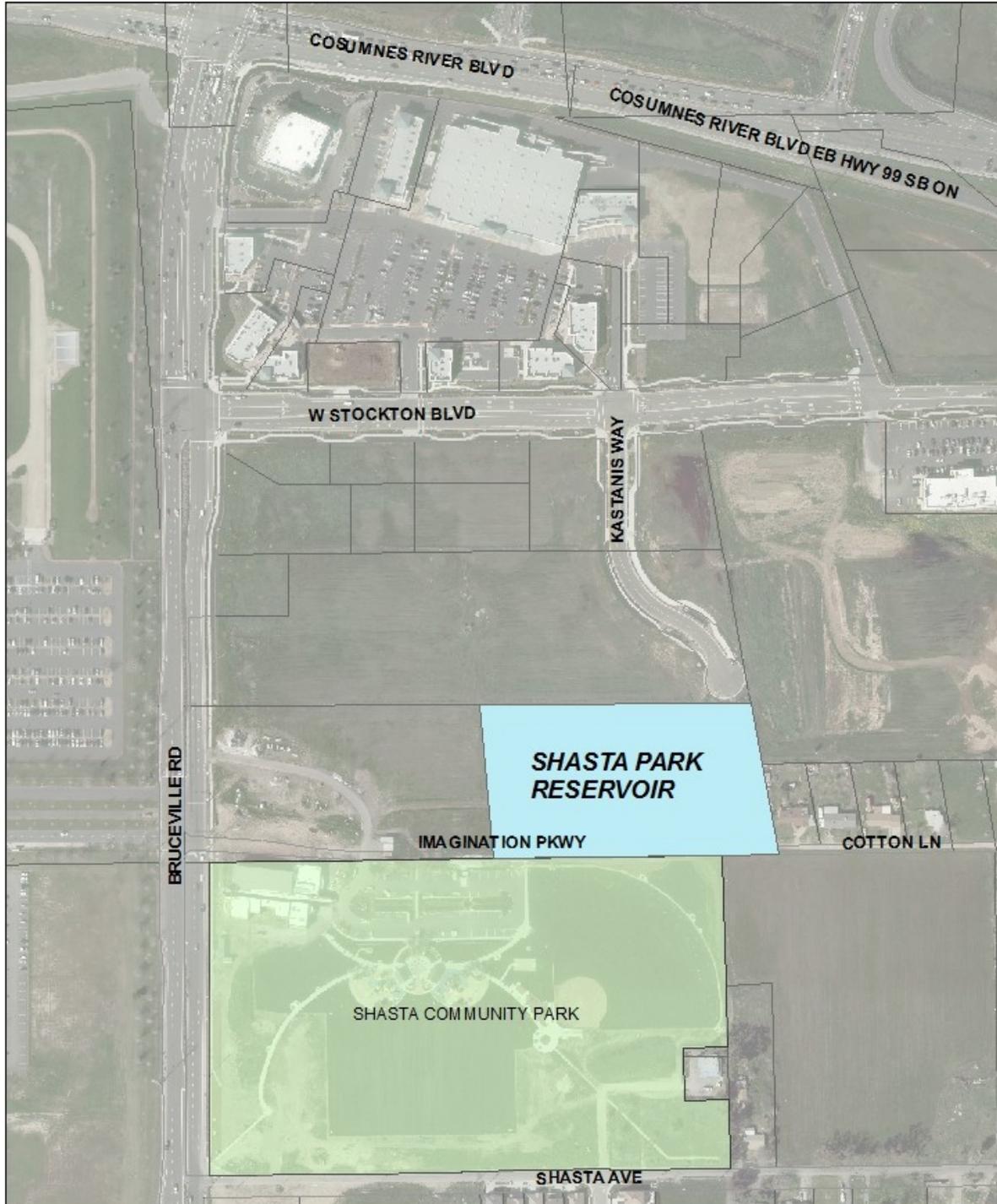
On September 5, 2012, the City Manager approved an agreement (2012-0790) with West Yost Associates to provide for a quality control assessment of the City's design, for the amount not-to-exceed \$37,300.

On March 5, 2013, the City Council approved supplemental agreement No. 1 to the West Yost Associates agreement, to provide for design of the overall facility, rather than the quality control assessment of the City's design. This raised the West Yost Associates agreement from \$37,300 to an amount not-to-exceed \$321,400. The scope of this revised agreement did not include the above or below-ground groundwater facilities.

The additional design services included in the proposed supplemental agreement were specifically included in the Request for Qualifications originally used to select Wood Rodgers, and are part of the second phase of the Shasta Park groundwater well facility plan. This includes designing the appropriate facilities for pumping water out of the well, treating it to drinking water standards, and pumping it into the 4MG reservoir, making it available for city residents.

Approval of the proposed supplemental agreement would authorize performance of these additional facility design services for an amount not to exceed \$329,400, thereby bringing the total agreement amount to \$630,400.

**LOCATION MAP  
CITY OF SACRAMENTO  
SHASTA PARK RESERVOIR-PROPOSED  
Z14005400**



### SHASTA PARK RESERVOIR PRELIMINARY SITE PLAN



## SUPPLEMENTAL AGREEMENT

**Project Title and Job Number: Shasta Park Reservoir/Z14005400**

**Date: 05/29/13**

**Purchase Order #: 0000018807**

**Supplemental Agreement No.: 1**

The City of Sacramento ("City") and \_\_\_\_\_ Wood Rodgers, Inc. \_\_\_\_\_ ("Contractor"), as parties to that certain Professional Services Agreement designated as Agreement Number \_\_\_\_\_ 2012-0654 \_\_\_\_\_, including any and all prior supplemental agreements modifying the agreement (the agreement and supplemental agreements are hereafter collectively referred to as the "Agreement"), hereby supplement and modify the Agreement as follows:

1. The scope of Services specified in Exhibit A of the Agreement is amended as follows:

For additional scope of services included in Supplemental Agreement No. 1, see attachment.

2. In consideration of the additional and/or revised services described in section 1, above, the maximum not-to-exceed amount that is specified in Exhibit B of the Agreement for payment of Contractor's fees and expenses is **increased** by \_\_\_\_\_ \$329,400 \_\_\_\_\_, and the Agreement's maximum not-to-exceed amount is amended as follows:

|   |           |
|---|-----------|
| Agreement's original not-to-exceed amount:                      | \$301,000 |
| Net change by previous supplemental agreements:                 | \$0       |
| Not-to-exceed amount prior to this supplemental agreement:      | \$301,000 |
| <b>Increase</b> by this supplemental agreement:                 | \$329,400 |
| New not-to exceed amount including all supplemental agreements: | \$630,400 |

3. Contractor agrees that the amount of increase or decrease in the not-to-exceed amount specified in section 2, above, shall constitute full compensation for the additional and/or revised services specified in section 1, above, and shall fully compensate Contractor for any and all direct and indirect costs that may be incurred by Contractor in connection with such additional and/or revised services, including costs associated with any changes and/or delays in work schedules or in the performance of other services or work by Contractor.
4. Contractor warrants and represents that the person or persons executing this supplemental agreement on behalf of Contractor has or have been duly authorized by Contractor to sign this supplemental agreement and bind Contractor to the terms hereof.
5. Except as specifically revised herein, all terms and conditions of the Agreement shall remain in full force and effect, and Contractor shall perform all of the services, duties, obligations, and conditions required under the Agreement, as supplemented and modified by this supplemental agreement.

**Approval Recommended By:**

**Approved As To Form By:**

\_\_\_\_\_  
Project Manager  
**Approved By:**

\_\_\_\_\_  
City Attorney

\_\_\_\_\_  
Contractor  
**Approved By:**

**Attested To By:**

\_\_\_\_\_  
City of Sacramento

\_\_\_\_\_  
City Clerk

## **SUPPLEMENTAL AGREEMENT**

### **City of Sacramento Shasta Park Reservoir, Booster Pump Station, and Groundwater Well – Supplemental No. 1**

#### **Task 3A – Hydrogeologic Site Exploration (Deep)**

During test hole exploration, a thick section of loose gravel and cobbles was encountered from ground surface to a depth of 90 feet. To stabilize the borehole, it was necessary to install a 12.75-inch outside diameter steel conductor casing to a depth below the cobbles (90 feet). The conductor casing was installed within an 18-inch diameter borehole. The conductor casing was permanently cemented in place with 10.3 sack sand-cement grout, which required an additional inspection from Sacramento County Environmental Management Department. The loose formation resulted in a loss of an entire work week for the project which subsequently resulted in additional project inspection time.

#### **Task 11 – Water Supply Assessment Update**

The original project Water Supply Assessment (WSA) assumed that the new well would target the same shallow aquifer that other City wells are completed in. The recent site-specific geologic water quality assessment revealed that the shallow aquifer at this site has a very low yield and that the water quality in the shallow aquifer very has very high concentrations of both arsenic and manganese, and thus is not a desirable target aquifer. The site exploration revealed that intermediate and deep wells would have higher yields and better water quality. Now that the decision has been made to develop the deeper aquifers, a revised WSA is needed.

Wood Rodgers, Inc. (Wood Rodgers) will prepare a revised WSA for this project. The WSA will include a hydrogeologic review of the groundwater basin to help determine the viability of using groundwater from the intermediate and deep aquifers at this location to supply the desired City water capacity. The WSA will identify other users of the deep groundwater supply and provide our opinion of the viability and reliability of using deeper groundwater aquifers for City water supply. The WSA will follow the SB 610 format.

#### **Task 12 – Pump Station and WTP Design**

##### **Task 12.1 – Establish Design Criteria/Basis of Design Report (30-Percent Design)**

Once the new Well is constructed, it will be pump tested and sampled to determine a design capacity and its water quality. This pumping capacity and water quality will be used to determine the size and type of water treatment necessary to treat the well water. For this scope of work, Wood Rodgers will assume a pumping capacity of 1,500 gpm and water quality that requires treatment for methane and manganese with no arsenic treatment required. Adjustments to this scope of work will be made based on variance(s) to these assumptions.

A Basis of Design Report (BDR) will be developed that will be considered a 30-percent design level for the project. The BDR will document the criteria that will be used in the design of the well pump and the methane and manganese treatment systems. The BDR will include the following:

## SUPPLEMENTAL AGREEMENT

1. Preliminary Site Layout: Wood Rodgers will work with West Yost and Associates in updating the preliminary site layout to include the layout of the well pump, treatment systems, piping and chemical/electrical buildings in the overall site layout of the facility.
2. Well Pump Design: Based on the pump testing, the Well pump will be designed as a fixed speed pump that will pump through the methane stripper and into its pump chamber. The pump will be operated based on the water level in the 4 MG reservoir.
3. Methane Treatment System: The methane treatment system will include an aeration system to strip the methane from the water. Water will be pumped from the well to the top of the aerator and gravity through the aerator into an underground pump chamber. Variable speed booster pumps will pump out of the pump chamber through the manganese treatment system and into the 4 MG reservoir. Noise attenuation will be included in the design to meet the City's noise requirements.
4. Manganese Treatment System: The manganese treatment system will utilize chlorine to oxidize the manganese in the water. The manganese will then be filtered out using pressure filters that have either sand and anthracite or green sand. The filter operation, backwash, backwash recycle and filter to waste will be automated with electrically actuated valves and controlled by the plant's programmable logic controller.
5. Chemical/Electrical Building: The chemical/electrical building's appurtenances will be detailed for the City's review. The building is planned to be constructed of concrete masonry units (CMU) for the walls and clay tiles for the roof.

A draft BDR will be provided to the City for their review and comment. A meeting will be held with the City to review and discuss their comments. A final BDR will be submitted to the City that incorporates the City's comments. The final BDR will be used as the basis of the 60- and 95-percent project submittals.

### Meetings:

- One meeting to discuss the comments of the draft BDR

### Deliverables:

- Draft BDR e-mailed to the City for them to circulate for comments
- Final BDR e-mailed to the City

### Task 12.2 – Preliminary Design (60-Percent Design)

The preliminary design will utilize the BDR as provided in Task 12.1. Preliminary design is a 60-percent or better progress in design of the pipe systems, building layout, treatment systems, major item specifications and the process and instrumentation diagram.

The preliminary design will be submitted to the City for their review and comments. A meeting will be held with the City to go over the design comments. After this meeting, Wood Rodgers will proceed towards the final design with the City's comments incorporated into the design.

### Meetings:

- One meeting to discuss the comments of the preliminary design

## SUPPLEMENTAL AGREEMENT

### Deliverables:

- 60-percent design submittals:
  - One electronic copy of the preliminary design provided in Adobe PDF format
  - Three sets of specifications
  - Three sets of half size drawings (11" x 17")

### Task 12.3 – Final Design (95-Percent and Bid Set)

The 95-percent design will incorporate the City's Preliminary Design comments and complete the plans and specifications for the Well, methane and manganese treatment systems and chemical/electrical building. The final set of plans and specifications will be submitted to the City for their final review. A meeting will be held with the City to review their comments. Wood Rodgers will incorporate the City's comments and prepare a Bid Set of plans and specifications that the City will be able to go out to bid with. An opinion of probable cost will be provided with the 100-percent bid set.

### Meetings:

- One meeting to discuss the comments of the final design

### Deliverables:

- 95-percent design submitted to the City as follows:
  - One electronic copy of the 95-percent design provided in Adobe PDF format
  - Three sets of specifications
  - Three sets of half size drawings (11" x 17")
- 100-percent Bid Set of Plans and Specifications:
  - One electronic copy of the 100% Bid Set provided in Adobe PDF format
  - Three sets of specifications
  - Three sets of half size drawings (11" x 17")
  - One set of full size drawings (24" x 34")

### Task 13 – Bid Period Services

Wood Rodgers will provide support services to the City during the bidding phase of the project as follows:

#### Task 13.1 – Bid Process

The City will post the project in the local builders exchange, an advertisement in the local paper and a transmittal of bid-ready documents on CD to a reproduction company. Wood Rodgers will assist the City by responding to contractor questions and providing clarity to the design via addendums to the contract documents. Wood Rodgers will attend a bid meeting to introduce the project and to emphasize important project elements to the prospective bidders. Wood Rodgers will receive and tabulate bids, review the bid forms for contract compliance, check references and company financial statements and submit a recommendation to City for award.

### Deliverable:

- Review the submitted bids and provide a contractor recommendation to the City.

# SUPPLEMENTAL AGREEMENT

## Task 14 – Construction Period Services

Construction period services will be undertaken by Wood Rodgers to enforce the design intent, ensure that City obtains the highest quality product from execution of the construction contract, and protect City from unwarranted claims while overseeing construction and commissioning of the Shasta Park Well Facility.

Wood Rodgers will complete the following services during construction:

- Act on the City’s behalf in the execution of the construction contract with the Contractor. Advise, consult with, and represent the City in the issuance of project instructions to the Contractor in conformance with the Contract Documents.
- Provide observation of progress of key activities at various stages of construction during site visits to determine if the work is in accordance with the Contract Documents.
- Attend bi-weekly construction coordination meetings held at the City’s Office or at the job site to include the Contractor, the Consultant’s and the City’s representative(s).
- Provide review of Shop Drawings, submittals, Requests for Information (RFI), test results, inspections and other project specific information checking for contract compliance.
- Set up, conduct, and monitor all testing as required in the contract documents.
- Provide coordination with the California Department of Public Health (CDPH) during the course of the project.
- Provide system startup services.
- Conduct final inspection of the project with the City, prepare a final punch list and make recommendation of release of retention (if applicable).

### Task 14.1 – Construction Inspection Schedule

A specific schedule for construction related activities has been prepared in tabular form to reflect staff hours for on-site field construction observation during the construction and installation of the pump and appurtenances. Site observation will include a log notating observed activities started, completed and amount of Contractor progress during those times when we have staff onsite of the work by the Contractor. Table 1 (shown below) represents our estimate of required staff time for engineering services during construction (ESDC), and construction inspection. Staff listed below are Engineer III level and above.

**Table 1 – Estimated Work Hours for Engineering Services During Construction**

| ESDC                | No. | Hours/per | No. Staff | Total Hours |
|---------------------|-----|-----------|-----------|-------------|
| Bi-weekly meetings  | 16  | 2         | 1.5       | 48          |
| As-builts           | 80  | 2         | 1         | 160         |
| RFIs                | 60  | 1         | 1         | 60          |
| DCNs                | 10  | 2         | 1         | 20          |
| Periodic Inspection | 10  | 2         | 2         | 40          |
| Startup Services    | 5   | 6         | 2         | 60          |
| <b>TOTAL</b>        |     |           |           | <b>388</b>  |

Note: This is an estimate only and includes meeting attendance, submittal reviews, RFIs, inspections, and startup services.

# SUPPLEMENTAL AGREEMENT

## **Task 14.2 – Project Closeout**

Project completion will include record drawing production based on information prepared and provided by the contractor on as-constructed conditions. In addition, Wood Rodgers will prepare a letter report documenting the fabrication and installation of the project facilities and forward maintenance and operations manuals with other project information. Project completion activities will also include scheduling and conducting a final project meeting with City and the contractor after all punch list items have been resolved to the satisfaction of the City. Wood Rodgers will author a letter of final acceptance that the facility has been constructed per the plans and specifications and is ready for acceptance by the CDPH.

### **Deliverable:**

- Daily Field Reports, Photographs, and Letter of Acceptance

## **Task 15 – CDPH Water Supply Permit Amendment Assistance**

Wood Rodgers, Inc. will provide engineering and hydrogeologic consulting services associated with the CDPH permit amendment to add the Shasta Park Well as an approved source of capacity for the City of Sacramento potable water system. To accomplish permit amendment, CDPH requires an internal Engineering Report to meet their specific guidelines and formats. Wood Rodgers will provide a Technical Memorandum that includes the required data for CDPH's engineering report to assist them with the process of amending the City's Water Supply Permit.

### **Deliverable:**

- Technical Memorandum to assist CDPH with their Water Supply Permit Amendment.

## **Cost Estimate for Engineering Services**

We have enclosed our Fee Schedule and a detailed cost estimate for each of the Tasks described above. Our estimates include hours, hourly rates, direct expenses, and outside services for each Task.

# WOOD RODGERS

## WOOD RODGERS, INC.

### FEE SCHEDULE *Effective January 1, 2013*

| <b>CLASSIFICATION</b>                                | <b>STANDARD RATE</b> |
|--|----------------------|
| Principal Engineer/Geologist/Surveyor/Planner/LA* II | \$185 - \$225        |
| Principal Engineer/Geologist/Surveyor/Planner/LA*    | \$150 - \$200        |
| Associate Engineer/Geologist/Surveyor/Planner/LA* II | \$150 - \$175        |
| Associate Engineer/Geologist/Surveyor/Planner/LA*    | \$140 - \$165        |
| Engineer/Geologist/Surveyor/Planner/LA* III          | \$125 - \$165        |
| Engineer/Geologist/Surveyor/Planner/LA* II           | \$115 - \$150        |
| Engineer/Geologist/Surveyor/Planner/LA* I            | \$95 - \$135         |
| CAD Technician III                                   | \$85 - \$125         |
| CAD Technician II                                    | \$95 - \$125         |
| CAD Technician I                                     | \$85 - \$115         |
| Project Coordinator                                  | \$75 - \$105         |
| Administrative Assistant                             | \$70 - \$105         |
| 2-Person Survey Crew                                 | \$160 - \$230        |
| 3-Person Survey Crew                                 | \$220 - \$310        |
| Materials and Direct Charges                         | Cost Plus 10%        |
| Outside Services and Sub-Consultants                 | Cost Plus 10%        |
| Overtime Work and Expert Witness Testimony           | Rate Plus 50%        |

\*LA = Landscape Architect.

Blueprints, reproductions, and travel expenses will be charged at vendor invoice. Auto mileage will be charged at the IRS standard rate, currently 56.5 cents per mile. Fee Schedule is subject to change January 1, 2014.



**WOOD RODGERS**

**COST ESTIMATE WORKSHEET**

|                     |                                     |                    |           |
|---------------------|-------------------------------------|--------------------|-----------|
| <b>Client</b>       | City of Sacramento                  | <b>Date</b>        | 5/29/2013 |
| <b>Project Name</b> | Shasta Park Well Expanded Scope     | <b>Job Number</b>  | 8064.015  |
| <b>Task</b>         | 3A - Hydrogeologic Site Exploration | <b>Estimate By</b> | LHE       |

|              |                       | <i>Rate</i> | <i>Units</i> | <i>Quantity</i> | <i>Cost</i> |            |
|--------------|-----------------------|-------------|--------------|-----------------|-------------|------------|
| <b>Labor</b> | Principal II          | \$ 195.00   | Hours        |                 | \$ -        | <b>\$0</b> |
|              | Principal I           | \$ 160.00   | Hours        |                 | \$ -        |            |
|              | Associate Engineer II | \$ 160.00   | Hours        |                 | \$ -        |            |
|              | Associate Engineer    | \$ 140.00   | Hours        |                 | \$ -        |            |
|              | Engineer III          | \$ 130.00   | Hours        |                 | \$ -        |            |
|              | Engineer II           | \$ 120.00   | Hours        |                 | \$ -        |            |
|              | Engineer I            | \$ 105.00   | Hours        |                 | \$ -        |            |
|              | 2-Person Survey Crew  | \$ 230.00   | Hours        |                 | \$ -        |            |
|              | 3-Person Survey Crew  | \$ 310.00   | Hours        |                 | \$ -        |            |
|              | ACAD Drafting         | \$ 100.00   | Hours        |                 | \$ -        |            |
|              | Clerical              | \$ 70.00    | Hours        |                 | \$ -        |            |

|                        |                        |           |        |  |      |            |
|------------------------|------------------------|-----------|--------|--|------|------------|
| <b>Direct Expenses</b> | Ground Travel          | \$ 0.5650 | Miles  |  | \$ - | <b>\$0</b> |
|                        | Subsistence, Days      | \$ 30.00  | Days   |  | \$ - |            |
|                        | Subsistence, Overnight | \$ 120.00 | Nights |  | \$ - |            |
|                        | Transducer Rental      | \$ 25.00  | Days   |  | \$ - |            |
|                        | Materials              | +10%      | Total  |  | \$ - |            |

|                         |                     |  |  |           |                 |
|-------------------------|---------------------|--|--|-----------|-----------------|
| <b>Outside Expenses</b> | Drilling Contractor |  |  | \$ 18,000 | <b>\$19,800</b> |
|                         |                     |  |  | \$ -      |                 |
|                         |                     |  |  | \$ -      |                 |
|                         | Overhead (10%)      |  |  | \$ 1,800  |                 |

|                       |  |                  |
|-----------------------|--|------------------|
| <b>TOTAL FOR TASK</b> |  | <b>\$ 19,800</b> |
|-----------------------|--|------------------|



**WOOD RODGERS**

**COST ESTIMATE WORKSHEET**

|                     |                                     |                    |           |
|---------------------|-------------------------------------|--------------------|-----------|
| <b>Client</b>       | City of Sacramento                  | <b>Date</b>        | 5/29/2013 |
| <b>Project Name</b> | Shasta Park Well Expanded Scope     | <b>Job Number</b>  | 8064.015  |
| <b>Task</b>         | 11 - Water Supply Assessment Update | <b>Estimate By</b> | LHE       |

|              |                       | <i>Rate</i> | <i>Units</i> | <i>Quantity</i> | <i>Cost</i> |                 |
|--------------|-----------------------|-------------|--------------|-----------------|-------------|-----------------|
| <b>Labor</b> | Principal II          | \$ 195.00   | Hours        | 20              | \$ 3,900    | <b>\$14,340</b> |
|              | Principal I           | \$ 160.00   | Hours        |                 | \$ -        |                 |
|              | Associate Engineer II | \$ 160.00   | Hours        |                 | \$ -        |                 |
|              | Associate Engineer    | \$ 140.00   | Hours        |                 | \$ -        |                 |
|              | Engineer III          | \$ 130.00   | Hours        | 60              | \$ 7,800    |                 |
|              | Engineer II           | \$ 120.00   | Hours        | 8               | \$ 960      |                 |
|              | Engineer I            | \$ 105.00   | Hours        | 12              | \$ 1,260    |                 |
|              | 2-Person Survey Crew  | \$ 230.00   | Hours        |                 | \$ -        |                 |
|              | 3-Person Survey Crew  | \$ 310.00   | Hours        |                 | \$ -        |                 |
|              | ACAD Drafting         | \$ 100.00   | Hours        |                 | \$ -        |                 |
|              | Clerical              | \$ 70.00    | Hours        | 6               | \$ 420      |                 |

|                        |                        |           |        |  |      |            |
|------------------------|------------------------|-----------|--------|--|------|------------|
| <b>Direct Expenses</b> | Ground Travel          | \$ 0.5650 | Miles  |  | \$ - | <b>\$0</b> |
|                        | Subsistence, Days      | \$ 30.00  | Days   |  | \$ - |            |
|                        | Subsistence, Overnight | \$ 120.00 | Nights |  | \$ - |            |
|                        | Transducer Rental      | \$ 25.00  | Days   |  | \$ - |            |
|                        | Materials              | +10%      | Total  |  | \$ - |            |

|                         |                |  |  |      |            |
|-------------------------|----------------|--|--|------|------------|
| <b>Outside Expenses</b> |                |  |  | \$ - | <b>\$0</b> |
|                         |                |  |  | \$ - |            |
|                         |                |  |  | \$ - |            |
|                         | Overhead (10%) |  |  | \$ - |            |

|                       |                  |
|-----------------------|------------------|
| <b>TOTAL FOR TASK</b> | <b>\$ 14,340</b> |
|-----------------------|------------------|



**WOOD RODGERS**

**COST ESTIMATE WORKSHEET**

|                     |                                  |                    |           |
|---------------------|----------------------------------|--------------------|-----------|
| <b>Client</b>       | City of Sacramento               | <b>Date</b>        | 5/29/2013 |
| <b>Project Name</b> | Shasta Park Well Expanded Scope  | <b>Job Number</b>  | 8064.015  |
| <b>Task</b>         | 12 - Pump Station and WTP Design | <b>Estimate By</b> | LHE       |

|              |                       | <i>Rate</i> | <i>Units</i> | <i>Quantity</i> | <i>Cost</i> |                 |
|--------------|-----------------------|-------------|--------------|-----------------|-------------|-----------------|
| <b>Labor</b> | Principal II          | \$ 195.00   | Hours        | 40              | \$ 7,800    | <b>\$98,880</b> |
|              | Principal I           | \$ 160.00   | Hours        |                 | \$ -        |                 |
|              | Associate Engineer II | \$ 160.00   | Hours        | 240             | \$ 38,400   |                 |
|              | Associate Engineer    | \$ 140.00   | Hours        | 140             | \$ 19,600   |                 |
|              | Engineer III          | \$ 130.00   | Hours        | 96              | \$ 12,480   |                 |
|              | Engineer II           | \$ 120.00   | Hours        |                 | \$ -        |                 |
|              | Engineer I            | \$ 105.00   | Hours        |                 | \$ -        |                 |
|              | 2-Person Survey Crew  | \$ 230.00   | Hours        |                 | \$ -        |                 |
|              | 3-Person Survey Crew  | \$ 310.00   | Hours        |                 | \$ -        |                 |
|              | ACAD Drafting         | \$ 100.00   | Hours        | 178             | \$ 17,800   |                 |
|              | Clerical              | \$ 70.00    | Hours        | 40              | \$ 2,800    |                 |

|                        |                        |           |        |     |       |             |
|------------------------|------------------------|-----------|--------|-----|-------|-------------|
| <b>Direct Expenses</b> | Ground Travel          | \$ 0.5650 | Miles  | 120 | \$ 68 | <b>\$68</b> |
|                        | Subsistence, Days      | \$ 30.00  | Days   |     | \$ -  |             |
|                        | Subsistence, Overnight | \$ 120.00 | Nights |     | \$ -  |             |
|                        | Transducer Rental      | \$ 25.00  | Days   |     | \$ -  |             |
|                        | Materials              | +10%      | Total  |     | \$ -  |             |

|                         |                   |  |  |           |                  |
|-------------------------|-------------------|--|--|-----------|------------------|
| <b>Outside Expenses</b> | Affinity          |  |  | \$ 90,820 | <b>\$108,702</b> |
|                         | GSB Architectural |  |  | \$ 8,000  |                  |
|                         |                   |  |  | \$ -      |                  |
|                         | Overhead (10%)    |  |  | \$ 9,882  |                  |

|                       |                   |
|-----------------------|-------------------|
| <b>TOTAL FOR TASK</b> | <b>\$ 207,650</b> |
|-----------------------|-------------------|



**WOOD RODGERS**

**COST ESTIMATE WORKSHEET**

|                     |                                 |                    |           |
|---------------------|---------------------------------|--------------------|-----------|
| <b>Client</b>       | City of Sacramento              | <b>Date</b>        | 5/29/2013 |
| <b>Project Name</b> | Shasta Park Well Expanded Scope | <b>Job Number</b>  | 8064.015  |
| <b>Task</b>         | 13 - Bid Period Services        | <b>Estimate By</b> | LHE       |

|              |                       | <i>Rate</i> | <i>Units</i> | <i>Quantity</i> | <i>Cost</i> |                 |
|--------------|-----------------------|-------------|--------------|-----------------|-------------|-----------------|
| <b>Labor</b> | Principal II          | \$ 195.00   | Hours        | 12              | \$ 2,340    | <b>\$10,300</b> |
|              | Principal I           | \$ 160.00   | Hours        |                 | \$ -        |                 |
|              | Associate Engineer II | \$ 160.00   | Hours        | 40              | \$ 6,400    |                 |
|              | Associate Engineer    | \$ 140.00   | Hours        |                 | \$ -        |                 |
|              | Engineer III          | \$ 130.00   | Hours        | 12              | \$ 1,560    |                 |
|              | Engineer II           | \$ 120.00   | Hours        |                 | \$ -        |                 |
|              | Engineer I            | \$ 105.00   | Hours        |                 | \$ -        |                 |
|              | 2-Person Survey Crew  | \$ 230.00   | Hours        |                 | \$ -        |                 |
|              | 3-Person Survey Crew  | \$ 310.00   | Hours        |                 | \$ -        |                 |
|              | ACAD Drafting         | \$ 100.00   | Hours        |                 | \$ -        |                 |
|              | Clerical              | \$ 70.00    | Hours        |                 | \$ -        |                 |

|                        |                        |           |        |    |       |             |
|------------------------|------------------------|-----------|--------|----|-------|-------------|
| <b>Direct Expenses</b> | Ground Travel          | \$ 0.5650 | Miles  | 40 | \$ 23 | <b>\$23</b> |
|                        | Subsistence, Days      | \$ 30.00  | Days   |    | \$ -  |             |
|                        | Subsistence, Overnight | \$ 120.00 | Nights |    | \$ -  |             |
|                        | Transducer Rental      | \$ 25.00  | Days   |    | \$ -  |             |
|                        | Materials              | +10%      | Total  |    | \$ -  |             |

|                         |                   |  |  |          |                |
|-------------------------|-------------------|--|--|----------|----------------|
| <b>Outside Expenses</b> | Affinity          |  |  | \$ 6,400 | <b>\$8,140</b> |
|                         | GSB Architectural |  |  | \$ 1,000 |                |
|                         |                   |  |  | \$ -     |                |
|                         | Overhead (10%)    |  |  | \$ 740   |                |

|                       |                  |
|-----------------------|------------------|
| <b>TOTAL FOR TASK</b> | <b>\$ 18,463</b> |
|-----------------------|------------------|



**WOOD RODGERS**

**COST ESTIMATE WORKSHEET**

|                     |                                   |                    |           |
|---------------------|-----------------------------------|--------------------|-----------|
| <b>Client</b>       | City of Sacramento                | <b>Date</b>        | 5/29/2013 |
| <b>Project Name</b> | Shasta Park Well Expanded Scope   | <b>Job Number</b>  | 8064.015  |
| <b>Task</b>         | 14 - Construction Period Services | <b>Estimate By</b> | LHE       |

|              |                       | <i>Rate</i> | <i>Units</i> | <i>Quantity</i> | <i>Cost</i> |                 |
|--------------|-----------------------|-------------|--------------|-----------------|-------------|-----------------|
| <b>Labor</b> | Principal II          | \$ 195.00   | Hours        | 8               | \$ 1,560    | <b>\$22,760</b> |
|              | Principal I           | \$ 160.00   | Hours        |                 | \$ -        |                 |
|              | Associate Engineer II | \$ 160.00   | Hours        | 80              | \$ 12,800   |                 |
|              | Associate Engineer    | \$ 140.00   | Hours        |                 | \$ -        |                 |
|              | Engineer III          | \$ 130.00   | Hours        | 40              | \$ 5,200    |                 |
|              | Engineer II           | \$ 120.00   | Hours        |                 | \$ -        |                 |
|              | Engineer I            | \$ 105.00   | Hours        |                 | \$ -        |                 |
|              | 2-Person Survey Crew  | \$ 230.00   | Hours        |                 | \$ -        |                 |
|              | 3-Person Survey Crew  | \$ 310.00   | Hours        |                 | \$ -        |                 |
|              | ACAD Drafting         | \$ 100.00   | Hours        | 32              | \$ 3,200    |                 |
|              | Clerical              | \$ 70.00    | Hours        |                 | \$ -        |                 |

|                        |                        |           |        |     |        |              |
|------------------------|------------------------|-----------|--------|-----|--------|--------------|
| <b>Direct Expenses</b> | Ground Travel          | \$ 0.5650 | Miles  | 320 | \$ 181 | <b>\$181</b> |
|                        | Subsistence, Days      | \$ 30.00  | Days   |     | \$ -   |              |
|                        | Subsistence, Overnight | \$ 120.00 | Nights |     | \$ -   |              |
|                        | Transducer Rental      | \$ 25.00  | Days   |     | \$ -   |              |
|                        | Materials              | +10%      | Total  |     | \$ -   |              |

|                         |                   |  |  |  |           |                 |
|-------------------------|-------------------|--|--|--|-----------|-----------------|
| <b>Outside Expenses</b> | Affinity          |  |  |  | \$ 23,600 | <b>\$31,460</b> |
|                         | GSB Architectural |  |  |  | \$ 5,000  |                 |
|                         |                   |  |  |  | \$ -      |                 |
|                         | Overhead (10%)    |  |  |  | \$ 2,860  |                 |

|                                 |  |
|---------------------------------|--|
| <b>TOTAL FOR TASK \$ 54,401</b> |  |
|---------------------------------|--|



**WOOD RODGERS**

**COST ESTIMATE WORKSHEET**

|                     |  |                    |           |
|---------------------|--|--------------------|-----------|
| <b>Client</b>       | City of Sacramento                       | <b>Date</b>        | 5/29/2013 |
| <b>Project Name</b> | Shasta Park Well Expanded Scope          | <b>Job Number</b>  | 8064.015  |
| <b>Task</b>         | 15 - CDPH Water Supply Permit Assistance | <b>Estimate By</b> | LHE       |

|              |                       | <i>Rate</i> | <i>Units</i> | <i>Quantity</i> | <i>Cost</i> |                 |
|--------------|-----------------------|-------------|--------------|-----------------|-------------|-----------------|
| <b>Labor</b> | Principal II          | \$ 195.00   | Hours        | 12              | \$ 2,340    | <b>\$11,940</b> |
|              | Principal I           | \$ 160.00   | Hours        |                 | \$ -        |                 |
|              | Associate Engineer II | \$ 160.00   | Hours        | 60              | \$ 9,600    |                 |
|              | Associate Engineer    | \$ 140.00   | Hours        |                 | \$ -        |                 |
|              | Engineer III          | \$ 130.00   | Hours        |                 | \$ -        |                 |
|              | Engineer II           | \$ 120.00   | Hours        |                 | \$ -        |                 |
|              | Engineer I            | \$ 105.00   | Hours        |                 | \$ -        |                 |
|              | 2-Person Survey Crew  | \$ 230.00   | Hours        |                 | \$ -        |                 |
|              | 3-Person Survey Crew  | \$ 310.00   | Hours        |                 | \$ -        |                 |
|              | ACAD Drafting         | \$ 100.00   | Hours        |                 | \$ -        |                 |
|              | Clerical              | \$ 70.00    | Hours        |                 | \$ -        |                 |

|                        |                        |           |        |  |      |            |
|------------------------|------------------------|-----------|--------|--|------|------------|
| <b>Direct Expenses</b> | Ground Travel          | \$ 0.5650 | Miles  |  | \$ - | <b>\$0</b> |
|                        | Subsistence, Days      | \$ 30.00  | Days   |  | \$ - |            |
|                        | Subsistence, Overnight | \$ 120.00 | Nights |  | \$ - |            |
|                        | Transducer Rental      | \$ 25.00  | Days   |  | \$ - |            |
|                        | Materials              | +10%      | Total  |  | \$ - |            |

|                         |                |  |  |          |                |
|-------------------------|----------------|--|--|----------|----------------|
| <b>Outside Expenses</b> | Affinity       |  |  | \$ 2,560 | <b>\$2,816</b> |
|                         |                |  |  | \$ -     |                |
|                         |                |  |  | \$ -     |                |
|                         | Overhead (10%) |  |  | \$ 256   |                |

|                       |                  |
|-----------------------|------------------|
| <b>TOTAL FOR TASK</b> | <b>\$ 14,756</b> |
|-----------------------|------------------|



**SUMMARY OF COSTS BY TASK**

|                     |  |                    |                |
|---------------------|--|--------------------|----------------|
| <b>Client</b>       | City of Sacramento                       | <b>Date</b>        | 5/29/2013      |
| <b>Project Name</b> | Shasta Park Well Expanded Scope          | <b>Job Number</b>  | 8064.015       |
|                     |  | <b>Estimate By</b> | LHE            |
| <b>Tasks</b>        | 3A - Hydrogeologic Site Exploration      | \$                 | 19,800         |
|                     | 11 - Water Supply Assessment Update      | \$                 | 14,340         |
|                     | 12 - Pump Station and WTP Design         | \$                 | 207,650        |
|                     | 13 - Bid Period Services                 | \$                 | 18,463         |
|                     | 14 - Construction Period Services        | \$                 | 54,401         |
|                     | 15 - CDPH Water Supply Permit Assistance | \$                 | 14,756         |
|                     |  | <b>TOTAL \$</b>    | <b>329,400</b> |