

Lower American River Pipeline – Carmichael Water District

List of References

- ◆ Kennedy Jenks 60% Design Cost Estimate, 2014, [All pages](#)

OPINION OF PROBABLE CONSTRUCTION COST

KENNEDY/JENKS CONSULTANTS

Division Number

Project: CWD - Pipeline Conveyance Project

Prepared By: R Young

Date Prepared: 7/9/14

K/J Proj. No. 1470002*00

Estimate Type:

- Conceptual
 Preliminary (w/o plans)
 Design Development @

Construction
 Change Order
60 % Complete

Current at ENR 9795 May 2014

Escalated to ENR 9800 April 2015

Months to Midpoint of Construct 8

| Spec. No. | Item No. | Description | Qty | Units | Materials | | Installation | | Subcontractor | | Total |
|--|----------|---|-------|-------|-----------|-----------|--------------|------------|---------------|-------|---------|
| | | | | | \$/Unit | Total | \$/Unit | Total | \$/Unit | Total | |
| DIVISION 1 - GENERAL REQUIREMENTS | | | | | | | | | | | |
| | 1 | Mobilization/Demobilization | 1 | LS | | 0.00 | 67,365.86 | 67,365.86 | 0.00 | 0.00 | 67,366 |
| | 2 | Submittals | 1 | LS | | 0.00 | 3,000.00 | 3,000.00 | | 0.00 | 3,000 |
| | 3 | Insurance, Bonds, etc. | 1 | LS | | 0.00 | 40,419.52 | 40,419.52 | | 0.00 | 40,420 |
| | 7 | Traffic Control | 1 | LS | | 0.00 | 12,000.00 | 12,000.00 | | 0.00 | 12,000 |
| SUBTOTAL - DIVISION 1 | | | | | | 0.00 | | 122,785.38 | | 0.00 | 122,785 |
| DIVISION 2 - SITE WORK | | | | | | | | | | | |
| (E) Intake Structure Demolition | | | | | | | | | | | |
| | 1 | Remove Grating and Headwall to Intake Structure | 1 | LS | | 0.00 | 12,000.00 | 12,000.00 | | 0.00 | 12,000 |
| | 2 | SWPPP | 1 | LS | | 0.00 | 25,000.00 | 25,000.00 | | 0.00 | 25,000 |
| | 3 | Remove Intake Structure | 1 | LS | | 0.00 | 18,000.00 | 18,000.00 | | 0.00 | 18,000 |
| | 4 | Hall Concrete Offsite | 125 | TN | | 0.00 | 72.00 | 9,000.00 | | 0.00 | 9,000 |
| | 5 | Fill | 1 | LS | | 0.00 | 15,000.00 | 15,000.00 | | 0.00 | 15,000 |
| Grading, Excavation, Restoration North Bank | | | | | | | | | | | |
| | 6 | Clearing and Grubbing/Site Preparation - North Bank | 1.0 | AC | | 0.00 | 4,000.00 | 4,000.00 | 0.00 | 0.00 | 4,000 |
| | 7 | Rough Grading - North Bank | 1,550 | CY | 20.00 | 31,000.00 | 15.00 | 23,250.00 | | 0.00 | 54,250 |
| | 8 | Pit Excavation | 400 | CY | | 0.00 | 15.00 | 6,000.00 | | 0.00 | 6,000 |
| | 9 | Pit Shoring | 50 | LF | 162.00 | 8,100.00 | | 0.00 | | 0.00 | 8,100 |
| | 10 | Temporary 12-inch PVC Drainage Pipe with Dam | 200 | LF | 12.00 | 2,400.00 | 17.00 | 3,400.00 | | 0.00 | 5,800 |
| | 11 | Demo Existing Culvert and Facilites | | | | | | | | | |
| | 12 | Embankment Foundation | 1 | LS | | 0.00 | 10,000.00 | 10,000.00 | | 0.00 | 10,000 |
| | 13 | Earthwork Culvert -(Exc/Fill) | 500 | CY | | 0.00 | 32.00 | 16,000.00 | | 0.00 | 16,000 |
| | 14 | Embankment Fill | 120 | CY | 20.00 | 2,400.00 | 45.00 | 5,400.00 | | 0.00 | 7,800 |
| | 15 | Demolition - 24" Dia | 67 | LF | 10.00 | 670.00 | 35.00 | 2,345.00 | | 0.00 | 3,015 |
| | 16 | Stream Realignment | | | | | | | | | |
| | 17 | Headwall | 25 | CY | 600.00 | 15,240.00 | 200.00 | 5,080.00 | | 0.00 | 20,320 |
| | 18 | Trash Rack | 1 | EA | 1,200.00 | 1,200.00 | 1,000.00 | 1,000.00 | | 0.00 | 2,200 |
| | 19 | 57"x38" Arch Culvert | 200 | LF | 46.00 | 9,200.00 | 41.00 | 8,200.00 | | 0.00 | 17,400 |
| | 20 | Arch Pipe Footing | 400 | Feet | 35.00 | 14,000.00 | 75.00 | 30,000.00 | | 0.00 | 44,000 |
| | 21 | Cemented Channel | 200 | Feet | 90.00 | 18,000.00 | 125.00 | 25,000.00 | | 0.00 | 43,000 |

| | | | | | | | | | | | |
|--|----|--|-------|-----|-----------|------------|-----------|-----------|------------|------------|---------|
| | 22 | Cobble Stones | 120 | Ton | 40.00 | 4,800.00 | 250.00 | 30,000.00 | | 0.00 | 34,800 |
| | 23 | Aggregate Base | 8 | Ton | 20.00 | 154.00 | 15.00 | 115.50 | | 0.00 | 270 |
| | 24 | Gabbion Retaining Wall | 8 | EA | 700.00 | 5,600.00 | 800.00 | 6,400.00 | | 0.00 | 12,000 |
| | 25 | Landscaping | 1 | LS | | 0.00 | 10,000.00 | 10,000.00 | | 0.00 | 10,000 |
| | 26 | Slope Restoration/Grading | 1 | LS | 10,000.00 | 10,000.00 | 25,000.00 | 25,000.00 | | 0.00 | 35,000 |
| | 27 | Habitat Restoration at North Bank | 1 | EA | | 0.00 | 52,800.00 | 52,800.00 | | 0.00 | 52,800 |
| | 28 | Channel Cobbles | 98 | Ton | 40.00 | 3,920.00 | 33.00 | 3,234.00 | | 0.00 | 7,154 |
| | 29 | Hydroseeding | 333 | SY | 0.50 | 166.67 | 1.25 | 416.67 | | 0.00 | 583 |
| | 30 | Planting | 60 | Plt | 30.00 | 1,800.00 | 40.00 | 2,400.00 | | 0.00 | 4,200 |
| | | Horizontal Directional Drill | | | | | | | | | |
| | 31 | Clearing and Grubbing/Site Preparation - South Bank | 0.25 | AC | | 0.00 | 4,000.00 | 1,000.00 | 0.00 | 0.00 | 1,000 |
| | 32 | Site Resoration South Bank | | | | | | | | | |
| | 33 | Hydroseeding | 1,210 | SY | 0.50 | 605.00 | 1.25 | 1,512.50 | | 0.00 | 2,118 |
| | 34 | Planting | 10 | Plt | 30.00 | 300.00 | 40.00 | 400.00 | | 0.00 | 700 |
| | | <i>HDD Subcontractor Breakdown</i> | | | | | | | | | |
| | 35 | Mob/demob | 1 | LS | | 0.00 | 10,000.00 | 10,000.00 | 40,000.00 | 40,000.00 | 50,000 |
| | 36 | 48" Conductor Casing | 1 | LS | | 0.00 | 15,000.00 | 15,000.00 | 120,000.00 | 120,000.00 | 135,000 |
| | 37 | Horizontal Directional Drilling | 1 | LS | | 0.00 | 30,000.00 | 30,000.00 | 550,000.00 | 550,000.00 | 580,000 |
| | 38 | 30-inch DR 11 HDPE | 1 | LS | | 0.00 | 15,000.00 | 15,000.00 | 90,000.00 | 90,000.00 | 105,000 |
| | | North Bank Connection | | | | | | | | | |
| | 39 | Excavation and Backfill | 25 | CY | | 0.00 | 32.00 | 800.00 | | 0.00 | 800 |
| | 40 | Precast Vault with Hatch | 1 | EA | 10,000.00 | 10,000.00 | 1,560.00 | 1,560.00 | | 0.00 | 11,560 |
| | 41 | 24"X12" Weld 'o' let Connect | 1 | EA | 6,500.00 | 6,500.00 | 1,200.00 | 1,200.00 | | 0.00 | 7,700 |
| | 42 | 12-inch Butterfly Valve | 2 | EA | 4,000.00 | 8,000.00 | 2,000.00 | 4,000.00 | | 0.00 | 12,000 |
| | 43 | 12-inch Flow Meter | 1 | EA | 4,800.00 | 4,800.00 | 2,500.00 | 2,500.00 | | 0.00 | 7,300 |
| | 44 | 12-inch Flow Control Valve with Valve Position Indicator | 1 | EA | 22,000.00 | 22,000.00 | 2,000.00 | 2,000.00 | | 0.00 | 24,000 |
| | 45 | SCADA | 1 | EA | 7,500.00 | 7,500.00 | 8,000.00 | 8,000.00 | | 0.00 | 15,500 |
| | 46 | 24"X12" Reducer | 1 | EA | 2,200.00 | 2,200.00 | 1,100.00 | 1,100.00 | | 0.00 | 3,300 |
| | 47 | 12-inch Water Line | 25 | LF | 37.00 | 925.00 | 13.00 | 325.00 | | 0.00 | 1,250 |
| | | South Bank Connection | | | | | | | | | |
| | 48 | Ductile Iron to HDPE | 2 | LS | 3,000.00 | 6,000.00 | 4,500.00 | 9,000.00 | | 0.00 | 15,000 |
| | 49 | Excavation and Backfill | 500 | CY | 0.00 | 0.00 | 32.00 | 16,000.00 | | 0.00 | 16,000 |
| | 50 | 24-inch 90 Degree Elbow | 4 | EA | 6,275.00 | 25,100.00 | 192.00 | 768.00 | | 0.00 | 25,868 |
| | 51 | Anchor Blocks | 4 | LS | 3,000.00 | 12,000.00 | 2,000.00 | 8,000.00 | | 0.00 | 20,000 |
| | 52 | Temporary Water Supply | 1 | LS | 11,700.00 | 11,700.00 | 19,500.00 | 19,500.00 | | 0.00 | 31,200 |
| | 53 | Post-Fence Repair | 1 | LS | 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | | 0.00 | 2,400 |
| | | New Pipe in Pavement | | | | | | | | | |
| | 54 | Saw Cut (E) AC | 2,500 | LF | 0.50 | 1,250.00 | 1.50 | 3,750.00 | | 0.00 | 5,000 |
| | 55 | Remove (E) AC | 926 | SY | 2.00 | 1,851.85 | 3.00 | 2,777.78 | | 0.00 | 4,630 |
| | 56 | Excavation and Backfill | 2,325 | CY | 2.00 | 4,650.00 | 7.50 | 17,437.50 | | 0.00 | 22,088 |
| | 57 | Pipe Bedding Material | 662 | CY | 35.00 | 23,170.00 | 5.00 | 3,310.00 | | 0.00 | 26,480 |
| | 58 | Aggregate Base | 2,113 | Ton | 20.00 | 42,250.00 | 2.00 | 4,225.00 | | 0.00 | 46,475 |
| | 59 | Asphalt Concrete (3" thick) | 930 | Ton | 75.00 | 69,750.00 | 4.00 | 3,720.00 | | 0.00 | 73,470 |
| | 60 | 24-inch Water Line | 2,500 | LF | 81.00 | 202,500.00 | 30.25 | 75,625.00 | | 0.00 | 278,125 |
| | 61 | 24"X16" Reducer | 1 | EA | 2,200.00 | 2,200.00 | 1,100.00 | 1,100.00 | | 0.00 | 3,300 |
| | 62 | 16-inch Butterfly Valve | 3 | EA | 5,400.00 | 16,200.00 | 2,700.00 | 8,100.00 | | 0.00 | 24,300 |
| | 61 | 16-inch DI Flanged Tee | 1 | EA | 3,600.00 | 3,600.00 | 480.00 | 480.00 | | 0.00 | 4,080 |
| | 62 | 16-inch Water Line | 10 | LF | 49.50 | 495.00 | 21.00 | 210.00 | | 0.00 | 705 |

| | | | | | | | | | | |
|--|----|---|-------|-----|----------|--------------|--------------|--------------|------|---------------------|
| | 63 | 16-inch Transition Coupling | 2 | EA | 1,800.00 | 3,600.00 | 900.00 | 1,800.00 | 0.00 | 5,400 |
| | 64 | 16-inch FCA | 2 | EA | 2,800.00 | 5,600.00 | 1,400.00 | 2,800.00 | 0.00 | 8,400 |
| | | New Pipe in Park | | | | | | | | |
| | 65 | Saw Cut (E) AC | 3,900 | LF | 0.50 | 1,950.00 | 1.50 | 5,850.00 | 0.00 | 7,800 |
| | 66 | Remove (E) AC | 1,444 | SY | 2.00 | 2,888.89 | 3.00 | 4,333.33 | 0.00 | 7,222 |
| | 61 | Excavation and Backfill | 2,648 | CY | 2.00 | 5,296.20 | 7.50 | 19,860.75 | 0.00 | 25,157 |
| | 62 | Pipe Bedding Material | 984 | CY | 35.00 | 34,440.00 | 5.00 | 4,920.00 | 0.00 | 39,360 |
| | 63 | Asphalt Concrete (3" thick) | 298 | Ton | 75.00 | 22,320.00 | 4.00 | 1,190.40 | 0.00 | 23,510 |
| | 64 | Aggregate Base | 2,991 | Ton | 20.00 | 59,814.00 | 2.00 | 5,981.40 | 0.00 | 65,795 |
| | 65 | 24-inch Water Line | 3,900 | LF | 64.00 | 249,600.00 | 30.25 | 117,975.00 | 0.00 | 367,575 |
| | 66 | Hydrant | 2 | EA | 2,500.00 | 5,000.00 | 1,500.00 | 3,000.00 | 0.00 | 8,000 |
| | 67 | Water Service | 1 | LS | 3,000.00 | 3,000.00 | 1,500.00 | 1,500.00 | 0.00 | 4,500 |
| | 68 | Drinking Fountain | 1 | LS | 3,000.00 | 3,000.00 | 1,500.00 | 1,500.00 | 0.00 | 4,500 |
| | | South Bank Details | | | | | | | | |
| | 69 | Post-Fence Repair | 1 | LS | 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 0.00 | 2,400 |
| | 70 | Excavation and Backfill | 25 | CY | | 0.00 | 32.00 | 800.00 | 0.00 | 800 |
| | 71 | 24-inch Check Valve | 1 | EA | 2,400.00 | 2,400.00 | 200.00 | 200.00 | 0.00 | 2,600 |
| | 72 | 24-inch Butterfly Valve | 2 | EA | 8,000.00 | 16,000.00 | 4,000.00 | 8,000.00 | 0.00 | 24,000 |
| | 73 | Blow Off Valve | 2 | EA | 1,200.00 | 2,400.00 | 2,400.00 | 4,800.00 | 0.00 | 7,200 |
| | 74 | Precast 5'x5'x5' Vault with 5'x5' Hatch | 1 | EA | 9,500.00 | 9,500.00 | 1,425.00 | 1,425.00 | 0.00 | 10,925 |
| | 75 | 16-inch Butterfly Valve | 2 | EA | 5,400.00 | 10,800.00 | 2,700.00 | 5,400.00 | 0.00 | 16,200 |
| | 76 | 16-inch Impeller Flow Meter | 1 | LS | 6,200.00 | 6,200.00 | 2,500.00 | 2,500.00 | 0.00 | |
| | 77 | 16-inch Water Line | 25 | LF | 50.00 | 1,250.00 | 20.00 | 500.00 | 0.00 | 1,750 |
| | 78 | 24"X16" Reducer | 1 | EA | 2,200.00 | 2,200.00 | 1,100.00 | 1,100.00 | 0.00 | 3,300 |
| | 79 | Transition Coupling | 2 | EA | 3,400.00 | 6,800.00 | 1,200.00 | 2,400.00 | 0.00 | 9,200 |
| | | SUBTOTAL - DIVISION 2 | | | | 1,070,656.61 | 817,677.83 | 800,000.00 | | 2,679,634 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | Subtotals | | | | 1,070,656.61 | 940,463.21 | 800,000.00 | | 2,802,420 |
| | | Taxes | @ | 8% | | 85,652.53 | | | | 85,653 |
| | | Subtotals | | | | 1,156,309.14 | 940,463.21 | 800,000.00 | | 2,896,772 |
| | | Contractor OH&P | @ | 15% | | 173,446.37 | 141,069.48 | | | 314,516 |
| | | Subtotals | | | | 1,329,755.51 | 1,081,532.69 | 800,000.00 | | 3,211,288 |
| | | Contractor Mark-up on Sub | @ | 10% | | | | 80,000.00 | | 80,000 |
| | | Subtotals | | | | 1,329,755.51 | 1,081,532.69 | 880,000.00 | | 3,291,288 |
| | | Estimate Contingency | @ | 15% | | 199,463.33 | 162,229.90 | 132,000.00 | | 493,693 |
| | | Estimated Bid Cost | | | | 1,529,218.83 | 1,243,762.59 | 1,012,000.00 | | 3,784,981 |
| | | | | | | | | | | |
| | | Total Estimate | | | | 1,529,218.83 | 1,243,762.59 | 1,012,000.00 | | 3,784,981 |
| | | Total Estimate of Project Cost | | | | | | | | \$ 3,785,000 |

Hazel/50 Intertie Improvements – City of Folsom

List of References

- ◆ White paper SOI supply through Zone 3 analysis_110512, Brown & Caldwell, 2013, [page 7](#)
- ◆ Draft FPA Cost Reports_7-2013, Brown & Caldwell, 2013, [pages 21-22](#)

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Prepared for: Todd Eising
Project Title: FPA Interim Water Supply Planning Level Costs
Project No: 143386

Technical Memorandum [No. 1]

Subject: FPA Interim Water Supply Planning Level Costs
Date: November 2, 2012
To: Todd Eising
From: Melanie Holton



Prepared by: 
Melanie Holton, Project Manager

Reviewed by: 
Jeff Lawrence, QA/QC

Table 2. Interim FPA and FPA Ultimate Folsom WTP Supply Scenarios

| Improvement | Unit cost (for new facilities) | Units | Existing facility total costs ^d | Current firm capacity ^e | 2018 existing system capacity needs ^c | Units | Scenario 1. ^a Interim FPA (2 mgd) through Zone 3 East | | | | | Scenario 2. ^b FPA Ultimate (9.2 mgd) through Zone 3 East | | | | |
|---|--------------------------------|--------------|--|------------------------------------|--|-------|--|---|--|----------|---------------------|---|---|---------------------------|--------|----------------------|
| | | | | | | | FPA needs from existing capacity ^f | % FPA share of existing capacity ^g | FPA needs in new capacity ^f | Units | Cost | FPA needs from existing capacity | % FPA share of existing capacity ^g | FPA needs in new capacity | Units | Total Cost Share |
| Existing Facilities Shared Capacity | | | | | | | | | | | | | | | | |
| WTP-Phase III (Improvements to entire WTP) ^h | | | \$13,286,280 | 50 | 34 mgd | | 2.0 | 4% | | mgd | \$ 540,000 | 9.2 | 18% | | mgd | \$ 2,450,000 |
| WTP-Phase IV A (improvements to entire WTP) ^h | | | \$ 6,012,724 | 50 | 34 mgd | | 2.0 | 4% | | mgd | \$ 250,000 | 9.2 | 18% | | mgd | \$ 1,110,000 |
| WTP-Phase IV B (30 mgd (6-train) expansion) ⁱ | | | \$ 20,659,548 | 6 | trains | | 0.4 | 7% | | trains | \$ 1,380,000 | 2 | 33% | | trains | \$ 6,886,516 |
| Zone 3 East BPS ^j | | | \$ 3,852,171 | 8,000 | 7,500 gpm | | 500 | 6% | | gpm | \$ 250,000 | 500 | 6% | | gpm | \$ 250,000 |
| Natoma raw water pipeline | | | \$ 8,386,682 | 50 | mgd | | 2.0 | 4% | | mgd | \$ 340,000 | 9.2 | 18% | | mgd | \$ 1,543,150 |
| Foothills Reservoirs (existing 5 MG capacity) | | | \$ 1,792,120 | 5 | 3.9 MG | | 1.0 | 20% | | MG | \$ 360,000 | 1.0 | 20% | | MG | \$ 360,000 |
| Zone 3 East distribution system (24-in dia pipeline from Zone 3 East BPS to Blue Ravine) ^j | | | \$ 2,808,000 | 12.7 | 10.7 mgd | | 2.0 | 16% | | mgd | \$ 500,000 | - | 0% | | mgd | \$ - |
| Subtotal existing facilities share cost | | | | | | | | | | | \$ 3,620,000 | | | | | \$ 12,599,666 |
| New Facilities | | | | | | | | | | | | | | | | |
| Transmission pipelines - 12-in diameter | 20 | \$/in-dia/LF | | | | | | | | 3,000 LF | \$ 720,000 | | | | | |
| Transmission pipelines - 24-in diameter | 20 | \$/in-dia/LF | | | | | | | | | | | | 29,600 LF | | \$ 14,208,000 |
| Zone 3 East BPS (additional capacity) | 350 | \$/gpm | | | | | | | | 900 gpm | \$ 320,000 | | | 5,900 gpm | | \$ 2,065,000 |
| Total new facilities construction | | | | | | | | | | | \$ 1,040,000 | | | | | \$ 16,273,000 |
| Planning (new facilities) | 6% | | | | | | | | | | \$ 62,400 | | | | | \$ 980,000 |
| Design (new facilities) | 10% | | | | | | | | | | \$ 104,000 | | | | | \$ 1,630,000 |
| Construction management (new facilities) | 8% | | | | | | | | | | \$ 83,200 | | | | | \$ 1,310,000 |
| Contingency (new facilities) | 30% | | | | | | | | | | \$ 390,000 | | | | | \$ 6,060,000 |
| Subtotal new facilities cost | | | | | | | | | | | \$ 1,679,600 | | | | | \$ 26,260,000 |
| Project total | | | | | | | | | | | \$ 5,300,000 | | | | | \$ 38,900,000 |

Notes:

- ^a Interim FPA through Zone 3 is based on serving 2 mgd through Zone 3 East to interim FPA development near Placerville Rd, south of HWY 50. This scenario is exclusive of Ultimate FPA, and no phasing is included.
- ^b Ultimate FPA through Zone 3 East is based on serving 9.2 mgd through Zone 3 to the FPA. This scenario is exclusive of Interim FPA, and no phasing is included.
- ^c All scenarios are based on 80% of the 2018 demand for the existing service area and Ultimate Easton demands.
- ^d Existing facility total costs are based on historical actual costs, provided in Attachment A.
- ^e Zone 3 East BPS total capacity is 11,000 gpm. With the largest pump out of service the firm capacity is 8,000 gpm.
- ^f Total FPA booster pumping needs for Interim FPA is 2 mgd (1,400 gpm) and for FPA Ultimate is 9.2 mgd (6,400 gpm).
- ^g Percent share calculated assuming FPA will utilize available capacity in the City's system before building new facilities.
- ^h WTP-Phase IV A includes cost for improvements to the entire WTP, 50 mgd capacity.
- ⁱ WTP-Phase IV B includes cost for the expansion improvements for the new and existing WTP from 20 mgd to 50 mgd. These costs are based on the addition of 6 treatment trains, each train is 5 mgd.
- ^j Zone 3 East BPS and distribution 2018 capacity needs are based on the Zone 3 East 2018 maximum day demand of 5.7 mgd (4,000 gpm) plus maximum day demand for Zones 4, 5, and 6 which are served through Zone 3 East. Zones 4, 5, and 6 2018 maximum day demand is 5 mgd (3,500 gpm).



ADMINISTRATIVE DRAFT Technical Memorandum

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Prepared for: City of Folsom
Project Title: Folsom Plan Area Water System Infrastructure Plan
Project No.: 144078-004

Technical Memorandum

Subject: Water Backbone Infrastructure Plan
Date: July 9, 2013
To: Todd Eising, City of Folsom
From: Melanie Holton, Brown and Caldwell

Prepared by: _____
Melanie Holton, Project Manager
P.E. No. 64983, Expiration 6/30/2015

Reviewed by: _____
Jeff Lawrence,
P.E. No. C54303, Expiration 12/13

Limitations:

This is a draft memorandum and is not intended to be a final representation of the work done or recommendations made by Brown and Caldwell. It should not be relied upon; consult the final report.

This document was prepared solely for the City of Folsom in accordance with professional standards at the time the services were performed and in accordance with the contract between City of Folsom and Brown and Caldwell dated February 7, 2013. This document is governed by the specific scope of work authorized by the City of Folsom; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by the City of Folsom and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Section 6: Planning Level Estimate of Probable Costs

The FPA system improvement planning level estimate of probable costs are based on the backbone water distribution requirements described in Section 5 and illustrated on Figure 3-1. The unit costs for pipelines, storage tanks, booster pump stations, and valves are shown in Table 6-1. Also included in the costs are contingency factors. Due to the uncertainties at this planning level a 30% contingency has been added to all costs. This level of contingency is commonly used during the planning stages of a project.

Table 6-1. Folsom Plan Area Water System Backbone Planning Level Cost Estimate

| Facilities | Unit costs | | Quantity | | Cost | Notes |
|---|------------|--------------|---------------------|-------|---------------------|----------------------|
| | Cost | Units | Quantity | Units | | |
| Pipelines | | | | | | |
| 12-in diameter | 15 | \$/in-dia/LF | 88,596 | LF | \$15,947,228 | |
| 18-in diameter | 12 | \$/in-dia/LF | 22,233 ^a | LF | \$4,802,330 | |
| 24-in diameter | 10 | \$/in-dia/LF | 8,014 ^b | LF | \$1,923,398 | |
| Subtotal (pipelines) | -- | -- | 118,843 | | \$22,672,956 | |
| Booster pump stations | | | | | | |
| Zone 3 to 4 | 350 | \$/gpm | 1,000 | gpm | \$350,000 | 50 hp |
| Zone 3 to 5 | 350 | \$/gpm | 1,200 | gpm | \$420,000 | 100 hp |
| Zone 5 to 6 | 350 | \$/gpm | 750 | gpm | \$262,500 | 50 hp |
| Storage tanks | | | | | | |
| Zone 2/3 gravity ^c | 0.75 | \$/Gal | 8 | MG | \$6,000,000 | |
| Zone 4 gravity | 0.85 | \$/Gal | 2 | MG | \$1,700,000 | |
| Zone 5/6 gravity | 0.85 | \$/Gal | 2.5 | MG | \$2,125,000 | |
| Control valves^d | | | | | | |
| FPA Zone 2 to Existing Zone 2 Two-Way PRV Station | 50,000 | \$ ea | 2 | ea | \$100,000 | |
| Existing Zone 3 to FPA Zone 3 | 50,000 | \$ ea | 1 | ea | \$50,000 | 12-in to 16-in valve |
| Zone 3 to 2 | 25,000 | \$ ea | 3 | ea | \$75,000 | 8-in to 10-in valve |
| Zone 4 to 3 | 25,000 | \$ ea | 1 | ea | \$25,000 | 8-in to 10-in valve |
| Zone 4 to 3 | 50,000 | \$ ea | 1 | ea | \$50,000 | 12-in to 16-in valve |
| Zone 5 to 4 | 25,000 | \$ ea | 1 | ea | \$25,000 | 8-in to 10-in valve |
| Zone 6 to 5a | 25,000 | \$ ea | 2 | ea | \$50,000 | 8-in to 10-in valve |
| Subtotal | | | | | \$33,906,000 | |
| Design | 8% | | | | \$2,713,000 | |
| Construction management | 8% | | | | \$2,713,000 | |

| Table 6-1. Folsom Plan Area Water System Backbone Planning Level Cost Estimate | | | | | | |
|---|------------|-------|----------|-------|---------------------|-------|
| Facilities | Unit costs | | Quantity | | Cost | Notes |
| | Cost | Units | Quantity | Units | | |
| Contingency | 30% | | | | \$10,172,000 | |
| Total^e | | | | | \$49,504,000 | |

^aIncludes 3,000 linear feet of 18-in diameter redundant supply pipeline from existing Zone 3.

^bIncludes 5,700 linear feet of 24-inch diameter supply pipeline from existing Zone 3

^cIt is assumed this will be two 4-MG tanks or 3-MG/5-MG tanks

^dOnly control valves are included in this table. Other valves such as normally closed manual valves and distribution system isolation valves are not shown.

^eEnvironmental costs are not included in this estimate.



Phase 2B Well Rehabilitations – City of Sacramento

List of References

- ◆ Well Rehabilitation Project Change Order No. 2, [pages 11-15](#)

Meeting Date: 2/25/2014

Report Type: Consent

Report ID: 2014-00143

Title: Well Rehabilitation Project Change Order No. 2 (Two-Thirds Vote Required)

Location: Districts 1, 2 and 3

Recommendation: Pass a Resolution 1) suspending competitive bidding, in the best interests of the City, for the emergency restoration to active service of nine existing groundwater wells, by adding this work to the City's Well Rehabilitation project contract with J.R. Sharp Construction, Inc.; 2) waiving the 10-day posting requirement for agreements greater than \$1,000,000; 3) authorizing Change Order No. 2 to City Contract No. 2013-0420 with J.R. Sharp Construction, Inc., to perform this work and specified security upgrades for a cost of \$1,157,775, bringing the contract's not-to-exceed amount to \$1,609,342; 4) authorizing a transfer of \$300,000 from the Fluoride Equipment Rehabilitation Program; and 5) increasing the City Manager's change order authority to \$100,000 for the remainder of the contract.

Contact: Bill Busath, Engineering & Water Resources Manager, (916) 808-1434; Dan Sherry, (916) 808-1419, Department of Utilities

Presenter: None

Department: Department Of Utilities

Division: Cip Engineering

Dept ID: 14001321

Attachments:

- 1-Description/Analysis
- 2-Background
- 3-Location Map
- 4-Resolution
- 5-Exhibit A (Change Order)

City Attorney Review

Approved as to Form
Joe Robinson
2/19/2014 5:07:12 PM

Approvals/Acknowledgements

Department Director or Designee: Dave Brent - 2/18/2014 1:48:21 PM

CITY OF SACRAMENTO

CHANGE ORDER

Contract # & Date: 2013-0420 04/18/2013

Budget #: 6005-50000-51000000-Z14110101

Purchase Order #: 0000020431

Change Order No: 2

Sacramento, California

Feb 14, 2014

TO: J. R. Sharp Construction, Inc., Contractor

CONTRACT FOR: WELL ELECTRICAL REHABILITATION PROJECT

(B13141321014)

Upon mutual acceptance of this document by the City of Sacramento, hereinafter referred to as "CITY", and your firm, hereinafter referred to as "CONTRACTOR", in accordance with the terms and conditions of the original contract documents, you are hereby directed to make the following change or changes for the consideration set forth below:

Description: SEE EXHIBIT A

| | |
|---|------------------------|
| The original contract sum was: | \$ <u>253,000.00</u> |
| Net change by previous change orders: | \$ <u>198,567.40</u> |
| The contract sum prior to this change order was: | \$ <u>451,567.40</u> |
| The contract sum will be <i>increased</i> by this C.O.: | \$ <u>1,157,775.00</u> |
| New contract sum including all Change Orders: | \$ <u>1,609,342.40</u> |

CONTRACTOR agrees that the amount of increase or decrease in the contract sum specified in this change order shall constitute full compensation for the work required by this change order, including but not limited to all compensation for the additional and/or revised work specified herein, 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 work, including any changes, disruptions or delays in work schedules or in the performance or other work by CONTRACTOR. The time for performance of the Contract will be **increased by 80 working days** by reason of the performance of the work required by this Change Order. Except as herein above expressly provided, CONTRACTOR further agrees that the performance of the work specified in this Change Order or the rescheduling of other project work made necessary by this Change Order, shall not constitute a delay which will extend the time limit for completion of the work as said term is used in the Contract between CITY and CONTRACTOR for the project.

Approval Recommended By:

Approved as to Form by:

Project Manager – Paul Barnes

Joe Robinson, Deputy City Attorney

Approved By:

Approved By:

Contractor – J R Sharp Construction, Inc.

Dave Brent, Director, Department of Utilities

Approved By:

Shirley Concolino – City Clerk

Date

**CITY OF SACRAMENTO
CHANGE ORDER
EXHIBIT A**

Contract # & Date: 2013-0420 04/18/2013

Budget #: 6005-50000-51000000-Z14110101

Purchase Order #: 0000020431

Change Order No: 2

- 1) **For Wells 134, 154, 156, and 159:** The contractor shall install a magnetic door switch on the motor junction box and run two number 14 conductors back to the PLC. The magnetic door switch shall be Sentrol model number 1044TW.

(Database Code: Customer Request)

Total This Item: \$1,272.00

- 2) **For Wells 134, 154, 156, and 159:** The contractor shall install a City supplied motion detector. Contractor shall install two number 12 conductors for 120 VAC power and two number 14 conductors for the relay contact. Contractor shall connect the motion detector to the 120 power supply inside the PLC cabinet and land the conductors for the relay contact to the PLC digital input card.

(Database Code: Customer Request)

Total This Item: \$0

- 3) **For Wells 134, 154, 156, and 159:** The contractor shall install a new ATI two module enclosure with a ATI power supply. Contractor shall mount the enclosure to the switchgear cover. Contractor shall mount the ATI display module inside the two module enclosure. Contractor shall power the power supply from the PLC cabinet. Contractor shall install conductors from the display module back to the PLC. Contractor shall connect the display module to the chlorine detector per the plans. Enclosure shall be ATI model number 80-0006. Power supply shall be ATI model number 00-0055. Contractor shall connect the chlorine detection system by ATI per the revised plans that will be given to the contractor.

(Database Code: Customer Request)

Total This Item: \$ 3,169.00

- 4) **For Wells 134, 154, 156, and 159:** The contractor shall remove and salvage the existing hydro pneumatic junction box. Contractor shall install new hydro pneumatic junction with the parts as shown in attachment 1. The contractor shall reuse the existing pressure transducer. For well 156 the contractor shall mount the new hydro pneumatic junction box to the hydro pneumatic tank using angle iron brackets and galvanized hardware and install new conduits from existing hydro pneumatic junction box to the new hydro pneumatic junction box.

(Database Code: Customer Request)

Total This Item: \$13,712.00

- 5) **For Well 134:** The contractor shall modify the hydro pneumatic tank by installing a site gauge with fittings and install a new well probe per attachment 2.

(Database Code: Design Change)

Total This Item: \$1,571.00

- 6) **For Well 159:** The contractor shall modify the lighting fixture brackets to mount the light fixtures higher. This will help to keep the new light fixtures from being vandalized.

(Database Code: Unforeseen Conditions)

Total This Item: \$467.00

- 7) **For Wells 154, 156, and 159:** The contractor shall remove and salvage the existing air compressor. Contractor shall install a new Air Charge 2000 Air compressor with probe and connect to the lighting panel. Contractor shall install a new well probe per attachment 2.

(Database Code: Customer Request)

Total This Item: \$9,525.00

- 8) **For Wells 134, 154, 156, and 159:** The contractor shall install modify the existing fence by extending the fence to 8 feet in height. Contractor shall reuse the existing fencing hardware and barbed wire. Contractor shall install new fence sleeves over the existing fence posts. Contractor shall reinstall the existing fence extensions with the existing barbed wire. Contractor shall install new fence fabric. Contractor shall rebuild each gate at 8' feet tall.

(Database Code: Customer Request)

Total This Item: \$49,254.00

- 9) **For Well 134:** The contractor shall remove the salvage the existing PLC enclosure within the chemical building. Contractor shall install a new 12"x12"x6" NEMA 1 junction box in same location as PLC enclosure. Contractor shall extend existing conduits into new junction box.

(Database Code: Customer Request)

Total This Item: \$653.00

- 10) **For Well 91:** The contractor shall perform all work specified by the City to activate this well with the proper chemical treatments which includes the following: conduits, conductors, building foundation per attachment 3, portable heater, flow meter, antenna pole, antenna, antenna pole foundation, modification of the existing fence, motion detector, security LED lighting, chlorine detector and power supply, back flow preventer, digital power meter, magnetic switch for jct box, chlorine booster pump with pressure gauge and isolation valves, make all connections to activate the chemical treatment of the water, 1/2" O.D. x 3/8" I.D. telfon PFA tubing & 3/4" rubber hose for fluoride feed line encased inside a 2" schedule 40 PVC conduit with isolation valve, 3/4" 200 psi horizon rubber hose for chlorine feed line encased inside a 2" schedule 40 PVC conduit with isolation valve, 1" schedule 80 PVC feed water line to chemical building with isolation valve, , 3/4" water meter, 1" schedule 80 PVC feed water line to chemical building with isolation valve, air compressor, probe well, sight glass, eye wash station, and fence slats. The City will supply the following items to be installed by the contractor: chlorine scale, chlorine actuator, fiber glass building, water softener and stand, gas chlorinator and injector. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item: \$72,931.00

- 11) **For Well 92:** The contractor shall perform all work specified by the City to activate this well with the proper chemical treatments which includes the following: conduits, conductors, flow meter, modification of the existing fence, motion detector, security LED lighting, chlorine detector and power supply, digital power meter, magnetic switch for jct box, chlorine booster pump with pressure gauge and isolation valves, make all connections to activate the chemical treatment of the water, and fence slats. The City will supply the following items to be installed by the contractor: chlorine scale, chlorine actuator, water softener and stand, gas chlorinator and injector. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item: \$34,278.00

- 12) **For Well 93:** The contractor shall perform all work specified by the City to activate this well with the proper chemical treatments which includes the following: conduits, conductors, flow meter, motion detector, security LED lighting, chlorine detector and power supply, digital power meter, magnetic switch for jct box, chlorine booster pump with pressure gauge and isolation valves, make all connections to activate the chemical treatment of the water, and fence slats. The City will supply the following items to be installed by the contractor: chlorine scale, chlorine actuator, water softener and stand, gas chlorinator and injector. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item: \$37,943.00

- 13) **For Well 112:** The contractor shall perform all work specified by the City to activate this well with the proper chemical treatments which includes the following: conduits, conductors, add window and exhaust fan to chemical building, portable heater, flow meter, 8 fence high fence with barbed wire, motion detector, security LED lighting, chlorine detector and power supply, back flow preventer, digital power meter, magnetic switch for jct

box, chlorine booster pump with pressure gauge and isolation valves, make all connections to activate the chemical treatment of the water, 3/4" water meter, air compressor, probe well, sight glass, and eye wash station. The City will supply the following items to be installed by the contractor: chlorine scale, chlorine actuator, water softener and stand, gas chlorinator and injector. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item:

\$56,115.00

- 14) **For Well 114:** The contractor shall perform all work specified by the City to activate this well with the proper chemical treatments which includes the following: conduits, conductors, fiber glass building sized to fit within the existing facility, building foundation per attachment 3, portable heater, flow meter, antenna pole, antenna, antenna pole foundation, modification of the existing fence, motion detector, security LED lighting, chlorine detector and power supply, back flow preventer, digital power meter, magnetic switch for jet box, chlorine booster pump with pressure gauge and isolation valves, make all connections to activate the chemical treatment of the water, 1/2" O.D. x 3/8" I.D. teflon PFA tubing & 3/4" rubber hose for fluoride feed line encased inside a 2" schedule 40 PVC conduit with isolation valve, 3/4" 200 psi horizon rubber hose for chlorine feed line encased inside a 2" schedule 40 PVC conduit with isolation valve, 3/4" water meter, 1" schedule 80 PVC feed water line to chemical building with isolation valve, air compressor, probe well, sight glass, and eye wash station.. The City will supply the following items to be installed by the contractor: chlorine scale, chlorine actuator, water softener and stand, gas chlorinator and injector. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item:

\$88,066.00

- 15) **For Well 123:** The contractor shall perform all work specified by the City to activate this well with the proper chemical treatments which includes the following: conduits, conductors, building foundation per attachment 3, portable heater, flow meter, antenna pole, antenna, antenna pole foundation, modification of the existing fence, motion detector, security LED lighting, chlorine detector and power supply, back flow preventer, digital power meter, magnetic switch for jet box, chlorine booster pump with pressure gauge and isolation valves, make all connections to activate the chemical treatment of the water, 1/2" O.D. x 3/8" I.D. teflon PFA tubing & 3/4" rubber hose for fluoride feed line encased inside a 2" schedule 40 PVC conduit with isolation valve, 3/4" 200 psi horizon rubber hose for chlorine feed line encased inside a 2" schedule 40 PVC conduit with isolation valve, 3/4" water meter, 1" schedule 80 PVC feed water line to chemical building with isolation valve, air compressor, probe well, sight glass, eye wash station, and fence slats. The City will supply the following items to be installed by the contractor: chlorine scale, chlorine actuator, fiber glass building, water softener and stand, gas chlorinator and injector. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item:

\$74,348.00

- 16) **For Well 127:** The contractor shall perform all work specified by the City to activate this well with the proper chemical treatments which includes the following: conduits, conductors, flow meter, modification of the existing fence, motion detector, security LED lighting, chlorine detector and power supply, digital power meter, magnetic switch for jet box, chlorine booster pump with pressure gauge and isolation valves, and make all connections to activate the chemical treatment of the water. The City will supply the following items to be installed by the contractor: chlorine scale, chlorine actuator, water softener and stand, gas chlorinator and injector. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item:

\$39,165.00

- 17) **For Well 139:** The contractor shall perform all work specified by the City to activate this well with the proper chemical treatments which includes the following: conduits, conductors, add window to chemical building, portable heater, flow meter, modification of the existing fence, motion detector, security LED lighting, chlorine detector and power supply, back flow preventer, digital power meter, magnetic switch for jet box, chlorine booster pump with pressure gauge and isolation valves, make all connections to activate the chemical treatment of the water, 3/4" water meter, air compressor, probe well, sight glass, and eye wash station. The City will supply the

following items to be installed by the contractor: chlorine scale, chlorine actuator, water softener and stand, gas chlorinator and injector. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item: \$54,385.00

- 18) **For Well 158:** The contractor shall perform all work specified by the City to activate this well with the proper chemical treatments which includes the following: conduits, conductors, flow meter, modification of the existing fence, motion detector, security LED lighting, chlorine detector and power supply, digital power meter, magnetic switch for jct box, chlorine booster pump with pressure gauge and isolation valves, make all connections to activate the chemical treatment of the water, and fence slats. The City will supply the following items to be installed by the contractor: chlorine scale, chlorine actuator, water softener and stand, gas chlorinator and injector. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item: \$41,623.00

- 19) **Fluoride System:** The contractor shall provide nine Integrity FFS-55-2-1P Sodium Fluoride Saturator Systems for each of the nine wells on the Well Rehab 2B project. This price shall also include shipment, installation, all water connections, all electrical connections, and all PLC connections. The fluoride system shall meet the requirements of the NFS/ANSI 61 standards. This price is per each. Parts for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item: \$258,462.00

- 20) **Eye Wash Station:** The contractor shall provide five HAWS Model 8320 eye wash stations for the wells identified on the Well Rehab 2B project. This price shall also include shipment, installation, concrete foundation, and all water connections. This price is per each.

(Database Code: Unforeseen Conditions)

Total This Item: \$14,500.00

- 21) **PLC System:** The contractor shall provide three PLC systems for the wells identified on the Well Rehab 2B project. This price includes shipment, installation, NEMA 1 fiberglass enclosure 36"x36"x12", Modicon M340 PLC modules, HMI panel model number HMISTU855, microhard radio model number Nano Series IPn920T, terminal blocks, circuit breakers, fuses, DIN rail, Eaton UPS model 9130, power supply, relays, four cable fast quick connectors, and Ntron Ethernet switch model 7010TX. The PLC modules shall include the following: BMX P34 2020 CPU, BMX CPS 3020 Power Supply, BMX XBP 1200 12 Slot Rack, BMX DDI 1602 Digital Input Card, BMX DDO 1602 Digital Output Card, BMX AMI 0810 Analog Input Card, BMX AMO 0410 Analog Output Card, BMX NOE 0100 Ethernet Card, BMX NOC 0401 Ethernet Card, and BMX NOM 0200 Communications Card. This price is per each. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item: \$108,726.00

- 22) **PLC System:** The contractor shall provide six PLC systems for the wells identified on the Well Rehab 2B project. This price includes shipment, installation, back pan to fit existing enclosures, Modicon M340 PLC modules, HMI panel model number HMISTU855, microhard radio model number Nano Series IPn920T, terminal blocks, circuit breakers, fuses, DIN rail, Eaton UPS model 9130, power supply, relays, four cable fast quick connectors, and Ntron Ethernet switch model 7010TX. The PLC modules shall include the following: BMX P34 2020 CPU, BMX CPS 3020 Power Supply, BMX XBP 1200 12 Slot Rack, BMX DDI 1602 Digital Input Card, BMX DDO 1602 Digital Output Card, BMX AMI 0810 Analog Input Card, BMX AMO 0410 Analog Output Card, BMX NOE 0100 Ethernet Card, BMX NOC 0401 Ethernet Card, and BMX NOM 0200 Communications Card. This price is per each. Parts supplied by the contractor for this work shall conform to attachment 4.

(Database Code: Unforeseen Conditions)

Total This Item: \$197,610.00

Total This Change Order: \$1,157,775

Sacramento River Pump Station Modifications – City of Sacramento

List of References

- ◆ Supplemental Agreement No. 3 Underwater Dive and ROV Services for Water Facilities, [All pages](#)
- ◆ 2014 Drought Response Update and Vibration Monitoring Equipment Purchase Approval, [All pages](#)
- ◆ Vortex Breaker Notice of Exemption, [All pages](#)

SUPPLEMENTAL AGREEMENT

Project Title and Job Number: Underwater Dive and ROV Services for Water Facilities

Date: 2/21/14

Purchase Order #: 20800

Supplemental Agreement No.: 3

The City of Sacramento ("City") and Above and Below the H20 ("Contractor"), as parties to that certain Professional Services Agreement designated as Agreement Number 2012-0095, 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:

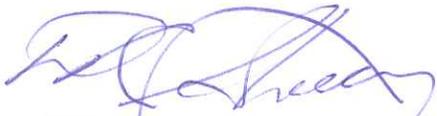
The Contractor shall provide and perform Underwater Dive and ROV Inspection and cleaning services for the City's Sacramento and American River Water intakes through January 2015, and Sediment Removal from the Sacramento River water intake structure, as specified in the Contractor's scope of services attached hereto and incorporated herein by this reference.

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 \$300,300, and the Agreement's maximum not-to-exceed amount is amended as follows:

| | |
|---|-----------|
| Agreement's original not-to-exceed amount: | \$80,000 |
| Net change by previous supplemental agreements: | \$ 19,650 |
| Not-to-exceed amount prior to this supplemental agreement: | \$ 99,650 |
| Increase by this supplemental agreement: | \$300,300 |
| New not-to exceed amount including all supplemental agreements: | \$399,950 |

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:



Project Manager

Approved By:



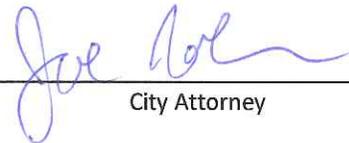
Contractor

Approved By:



City of Sacramento

Approved As To Form By:



City Attorney

Attested To By:



City Clerk

2012-0095-3

Title: Underwater Dive and ROV Services for Water Facilities

Other Party: Above and Below the H20



Above & Below the H₂O Underwater Dive and ROV Services

Project# 14001111(RFP#123351009)

Project name: Underwater Dive & ROV Services for Drinking Water Facilities

Professional Services Agreement No. 2012-0095-2 / P.O. # 208000

February 2014 to January 2015

Item 1: Sacramento River Intake 3-Cavi blaster screen cleans = **\$33,600.00**
(\$2,800.00 per day X 4-days = \$11,200.00 per clean)

Item 2: American River Intake 2-Cavi blaster screen cleans = **\$22,400.00**
(\$2,800.00 per day X 4-days = \$11,200.00 per clean)

Item 3: Sac or American River Intake 6-standard brush screen cleans = **\$13,200.00**
(\$2,200.00 per day w/ boat and 3-man crew X 1-day = \$2,200.00 per clean)

Item 4: American River Intake inboard / outboard screens Bay # 4
18-brush screen clean = **\$19,800.00**
(\$1,100.00 ½ rate per day w/ boat and 3-man crew X ½ -day = \$1,100.00 per clean)

Item 5: Remotely Operated Vehicle (ROV) inspections / 4 inspections = **\$7,400.00**
(\$1,450.00 ½ day rate to \$1,850.00 full day rate)

Item 6: Commercial diving rates for 3, 4 & 5 man crews 3 dives = **\$8,400.00**
(\$1,650.00 half day rate 3-man crew to \$2,800.00 5-man crew full day rate)

Item 7: Emergency Contingency = **\$8,000.00**

Total for 1 year contract = \$112,800.00

(Items 1-7 are non prevailing wage rates)

Clean Water for Life...



Above & Below the H₂O Underwater Dive and ROV Services

Project# 14001111(RFP#123351009)

Project name: Underwater Dive Services for the Sediment Removal from the Sacramento River Raw Water Intake Structure

Professional Services Agreement No. 2012-0095-2 / P.O. # 208000

Item 1: Commercial Dive Services (underwater sediment removal)

Description: Estimated 800-cubic yards underwater diving and dredging for the sediment removal from the Sacramento River Raw Water Intake

Duration: 20-days

Costs: 5-man crew at \$3,000.00 per day X 20 days = **\$60,000.00**

Item 2: Pac Machine Equipment Rental (5-pumps and 1 generator)

Description: 1-Flygt submersible dredge pump, 1-Flygt submersible high pressure pump, 1-Flygt submersible suction pump, 2-Godwin booster pumps (diesel), hoses and fittings and 1-Genset diesel 125 KVA generator (powers the 3 electric pumps)

Duration: 1 month rental

Costs: 5 pumps, 1 generator & equipment 1 month rental= **\$30,000.00**

Item 3: Adler Tanks / 12 Tank Rentals (settling containment boxes)

Description: 6-18,000gal open top Weir tanks and 6-18,000gal open top tanks for the sediment separation and water containment (on site sed basins) and disposal of the sediment and the reclaim of the water.

Duration: 22 days

Costs: = Mobilization and Demobilization with rental= **\$25,000.00**

Item 4: Vacuum (Vactor) Truck Services (sediment disposal)

Description: 12-cubic yard Vactor truck to remove the sediment from the weir tanks and transport the sediment to a disposal location (Gardenland Sand & Gravel)

Duration: 20 Days

Costs: 20 days removing sediment and hauling with dumping= **\$40,000.00**

Item 5: HDPE Piping / 6-inch x 1,600-foot w/ fusion machine rental & labor

Description: 1,600-foot of 6-inch HDPE discharge piping to move the sediment and reclaimed water from the pumps to the weir tanks for the sediment separation. Fuse and install the pipe prior to pumping and then removing the pipe upon completion of the project.

Duration: 2-days install, 1-day removal and 20 -days for pumping

Costs: Purchase and transport pipe, fusion machine rental & labor= **\$15,000.00**

Clear Water for Life...



Item 6: Security & Safety (temporary fencing and trailer mounted video monitoring)

Description: 6-foot chain link security fencing to cordon off the intake bridge, the area around the fountain and to secure any equipment or materials used for the project and post *No Trespassing Signs*. In addition a video surveillance mini trailer will be used to monitor the equipment on site.

Duration: monthly rental

Costs: monthly rental w/ install and uninstall= \$2,000.00

Item 7: PG&E Property Site Preparation and Restoration

Description: prepare the area where the weir boxes will be staged and recondition or repair the area when the project is completed

Duration: 2 days preparation, 2 days restoration

Costs: = \$5,000.00

Item 8: All Mobilization & Demobilization of the equipment and materials to and from the site

Description: Coordinate the deliver and set up of the generator and pump installations. Oversee the delivery, placement and connections of the weir boxes. Direct the placement of the security fencing and video surveillance coverage. Coordinate the removal of all equipment and materials from the work site. Clean up and return the site for public access.

Duration: 4 days prior to beginning the underwater work and 2 day upon the completion

Costs: = \$8,000.00

Item 9: Dredging & engineering consulting fees

Description: Site and location visits to assess the conditions, equipment and materials required to remove the sediment from the bottom of the intake structure. Attend the City staff and equipment manufactures meetings. Conduct the product and equipment research and do the design engineering for the pump requirements.

Costs: 20 hours billed at \$125.00 per hour = \$2,500.00

Total for items 1-9=\$187,500.00

(Items 1-9 are non prevailing wage rates)

Clean Water for Life...

Meeting Date: 6/17/2014

Report Type: Staff/Discussion

Report ID: 2014-00426

Title: 2014 Drought Response Update and Vibration Monitoring Equipment Purchase Approval

Location: Citywide

Recommendation: Pass 1) a Resolution declaring that a water shortage continues to exist, and implementing additional water conservation restrictions; and 2) a Motion authorizing the City Manager or the City Manager's designee to sign an emergency contract with Bently Nevada, Inc. for the purchase of vibration monitoring equipment for the City's water intake pumps, for an amount not-to-exceed \$225,000.

Contact: Dave Brent, Director, (916) 808-1400; Terrance Davis, Program Manager, (916) 808-1868, Department of Utilities

Presenter: Terrance Davis, Program Manager, (916) 808-1868, Department of Utilities

Department: Department Of Utilities

Division: Office of the Director Admin

Dept ID: 14001011

Attachments:

1-Description/Analysis

2-Background

3-Resolution

4-SF1049217 City of Sacramento Online Monitoring

City Attorney Review

Approved as to Form

Joe Robinson

6/10/2014 6:32:21 PM

Approvals/Acknowledgements

Department Director or Designee: Dave Brent - 5/29/2014 5:24:16 PM

Description/Analysis

Issue Detail: Calendar year 2013 was the driest year on record for much of Northern and Central California. Water storage in the Folsom Reservoir in May was approximately 57% of capacity and recent precipitation in the late winter and spring of 2014 had minimal impact on overall water storage. On January 14, 2014, the City Council adopted Resolution No. 2014-0018 declaring a water shortage as authorized under City Code section 13.04.910 and implemented Stage 2 of the City of Sacramento Water Shortage Contingency Plan (WSCP). On January 17, 2014, Governor Jerry Brown declared a State of Emergency due to critical drought conditions, and the Governor issued a second drought proclamation on April 25, 2014. This report provides an update of the City's ongoing drought and water shortage response and mitigation efforts, and requests adoption of a second water shortage resolution, and approval to purchase vibration monitoring equipment for the City's surface water intakes affected by low river flows resulting from the ongoing drought conditions.

Policy Considerations: The City's ongoing drought mitigation actions are consistent with the requirements of Section 10632 of the California Water Code, Chapter 5 of the City's 2010 Urban Water Management Plan, and Article XI (Outdoor Water Conservation) of Chapter 13.0 of City Code. City Council approval is required for purchases of \$100,000 or more. On March 4, 2014, the City Council passed Resolution No. 2014-0057, suspending competitive bidding for the purchase or lease of equipment, supplies, and services needed on an emergency basis to mitigate water shortage impacts for a cumulative amount not-to-exceed \$1,000,000.

Resolution No. 2014-0057 applies to the proposed purchase of vibration monitoring equipment for the City's surface water intakes, because the drought has resulted in significantly lower river levels than the City is used to seeing at the intakes, which potentially can cause cavitation that can lead to permanent intake pump damage. The purchase and installation of vibration monitoring equipment will detect potentially harmful vibrations so that operators are notified and the pumps are shut down before damage can occur. Due to the critical time-sensitive nature of this equipment, this purchase was not competitively bid. Given the immediacy of the City's drought response, Bently Nevada was selected as a vendor to provide this equipment for two reasons: 1) the vibration sensors desired contain programmable logic controls (PLC) which provide an immediate interface into existing Utilities pump control technologies; 2) the vendor provides regional support for troubleshooting and future maintenance.

Economic Impacts: Unknown.

Environmental Considerations: The proposed action is exempt from review under the California Environmental Quality Act (CEQA) as part of the City's continuing administrative activities to implement the UWMP (CEQA Guidelines section 15378(b)(2)), and because it can be seen with certainty that the action would have no significant effect on the environment (CEQA Guidelines section 15061(b)(3)). A reduction in water usage will reduce potential environmental effects associated with water use, by reducing surface water diversions, as well as reducing energy consumption and other impacts

associated with water production and distribution and the collection and treatment of this water after it has been used. A reduction in surface water diversions also will increase the availability of surface water for maintenance and protection of natural resources and the environment. Purchase and installation of the vibration monitoring equipment is exempt from CEQA under CEQA Guidelines section 15301(b), as a minor alteration of existing utility facilities with no expansion of existing levels of use.

Sustainability: Continued implementation of the WSCP supports the City's sustainability goals of reducing greenhouse gases and conserving resources.

Commission/Committee Action: Not applicable.

Rationale for Recommendation:

Financial Considerations: Under the current rate structure, continued or expanded implementation of the Water Shortage Contingency Plan will likely decrease the Department of Utilities' water revenues that are generated from its customer base that is billed by volumetric consumption. The Department will continue to closely monitor the cost and revenue impacts of sustained and expanded implementation of the City's water shortage measures.

The proposed purchase of vibration monitoring equipment, for an amount not-to-exceed \$225,000, was not competitively bid because it is a drought-response measure for which the City Council suspended competitive bidding under Resolution No. 2014-0057. The contracting amount presently available without competitive bidding under Resolution No. 2014-0057 is sufficient for the proposed purchase. On April 22, 2014, the City Council authorized the continued lease of submersible pumps at the Fairbairn Water Treatment Plant, without competitive bidding, as an emergency drought-response measure under Resolution No. 2014-0057, for an amount not-to-exceed \$313,500.

This reduced the amount available for emergency drought-response procurement without competitive bidding under Resolution No. 2014-0057 to \$685,500, which is more than the proposed purchase amount of \$225,000. Adequate funds are available in the Department's capital budget Z1414-0505 for this purchase.

Local Business Enterprise (LBE): Due to the emergency nature of the vibration equipment installation, and the City Council's prior suspension of competitive bidding for emergency drought-response actions, staff requested a LBE Participation Waiver.

Background

Drought Conditions and Outlook

Calendar year 2013 was the driest year on record for much of Northern California. This condition was preceded by two consecutive years of below normal precipitation in the Sacramento region and snow pack in the Sierra Nevada Mountains. Water storage at Folsom Reservoir remains very low, at approximately 57% of capacity as of May 2014. No significant precipitation is forecast for the remainder of the spring and summer.

On January 17, 2014 Governor Brown declared a Drought State of Emergency for the State of California. Preceding the State's pronouncement, on January 14, 2014 the Sacramento City Council adopted Resolution No. 2014-0018 declaring a water shortage, pursuant to City Code section 13.04.910, and implementing Stage 2 of the Water Shortage Contingency Plan (WSCP) as outlined in the City's 2010 Urban Water Management Plan (UWMP).

On April 25, 2014, Governor Brown issued an additional proclamation redoubling drought mitigation efforts. Specifically, the Governor's order calls on Californians and California businesses to take specific actions to conserve water, including limiting lawn watering and car washing; recommends that schools, parks and golf courses limit the use of potable water for irrigation; and asks that hotels and restaurants give customers options to conserve water by not washing sheets and towels, and only serving water upon request. The order also prevents homeowner associations from fining residents that limit their lawn watering and take other water conservation measures.

WSCP Stage 2 Activities

The City's UWMP Stage 2 establishes a goal for at least 20% reduction in overall water consumption. The Department of Utilities (DOU) has measured this by comparing monthly 2014 water production to the baseline average of 2012 and 2013 production. To accomplish this reduction the City is employing a 'portfolio' water savings approach, which is inclusive of a range of water shortage measures intended to educate and provide tools to customers to achieve conservation, generally consisting of:

- Customer outreach and education;
- Increased Water Conservation Ordinance enforcement;
- Conservation incentive programs; and
- Operational efficiencies to enhance water production capabilities and minimize distribution water losses.

A Citywide Drought Taskforce has been established to work collaboratively on City communication and operational strategies to achieve Stage 2 water conservation objectives. Through the Task Force, City departments have developed water use reduction plans. Department plans include revised operational practices to reduce irrigation at City parks and medians and programs to recapture and reuse water used for maintenance and construction. Departments will provide ongoing updates of their drought mitigation activities.

Article XI of Chapter 13.04 of the Sacramento City Code establishes the City's outdoor water use requirements and penalties for noncompliance. Under City Code section 13.04.890 (D), when the City Council declares a water shortage, the penalty amounts specified for violations of the City's ordinance are doubled while the water shortage remains in effect.

Effective March 9, 2014, water shortage regulations limited outdoor irrigation during daylight savings time to two days per week. To improve enforcement, the DOU and Community Development Department have collaborated to utilize Code Enforcement staff to assist with outdoor water use patrols. Since April 2014, this strategy has bolstered the number of City staff involved in patrols from approximately 7 to 40, providing a significant augmentation to water conservation enforcement efforts.

The DOU recently completed a survey of customers to determine the most effective strategies to improve drought outreach and communication. Beginning in late February, a variety of media efforts including utility bill inserts began to educate customers on the daylight savings irrigation restrictions and other ways to reduce water consumption. In addition, the City continues ongoing collaborative outreach and planning efforts with regional and State partners, such as the Regional Water Authority (RWA), the Water Forum, and the Association of California Water Agencies (ACWA).

In April 2014, at Council's direction, DOU began implementation of the River Friendly Landscape Program (cash for grass). Participants in this program

will receive 50 cents per square foot in rebates for converting their existing turf grass to drought tolerate and water-wise landscapes. This program augments the existing incentive programs that are available to residential and business customers to upgrade to higher efficiency appliances and fixtures. As of May 2014, there are approximately 700 residents who have expressed interest in the program. Funds have been identified for the pilot Program in the approved Fiscal Year 2013/14 DOU operating budget.

Water losses in the distribution system are estimated to be roughly 10% of total annual water production. To address this, the DOU has expanded acoustic leak detection operations to identify and repair distribution system water losses. Since January 2014 this program has reduced water loss by approximately 1.3M gallons. Leak detection will be an ongoing component of the Department's strategy to recover and maximize existing water resources.

Given the lower flows in the American and Sacramento Rivers, the City has recently taken a number of actions to mitigate potential adverse impacts of the ongoing drought conditions on the City's water production capabilities. These actions include the installation of temporary submersible pumps at the American River Intake, contracting on an emergency basis for the removal of sediment at the Sacramento River intake, and the acceleration of work necessary to restore service at nine groundwater wells.

Recommended Purchase of Vibration Monitoring Equipment

The drought has resulted in significantly lower river levels than the City is used to seeing at its surface water intakes, which can potentially cause cavitation that can lead to permanent pump damage. To prevent this from happening, DOU is recommending the purchase and installation of vibration monitoring equipment that will detect potentially harmful vibrations before damage occurs. This equipment would tie into DOU's SCADA system with an alarm to alert Operations staff, and a subsequent automatic shutdown of the pumps before damage could occur. This equipment provides a twofold benefit with protection of our infrastructure and increased systems reliability. To purchase and implement a fully automated protective system will cost approximately \$225,000.

Conservation Results

Customer outreach has been successful in raising awareness of Stage 2 water restrictions and resulted in a substantial increase in water use violation calls. Between January 1 and May 31, 2014 there were 1720 reports of improper water use, as compared to 60 in the same period in 2013.

Since the Council's water shortage declaration, water production [as measured in millions of gallons per day (MGD)] has begun to decline. Detailed water production results will continue to be provided on a regular basis to monitor progress and will serve as a trigger to determine future actions and recommendations.

Future Drought Mitigation Plans

Both the California Department of Water Resources and U.S. Bureau of Reclamation have significantly reduced upstream reservoir releases to conserve water and are considering reducing flows even lower based on an anticipated dry winter. This has resulted in lower flows in the American and Sacramento Rivers where the City's two surface water intakes are located, although Reclamation's releases into the lower American River currently are higher than previously anticipated, which Reclamation has indicated is occurring to meet salinity requirements in the Delta. The regional purveyors who rely on water from Folsom reservoir have expressed concerns that Reclamation's continued higher-than-expected releases from the reservoir may jeopardize future water availability from the reservoir if another dry year occurs.

During the last week of May, the State Water Resources Control Board (SWRCB) issued notices of curtailment to post-1914 appropriative water right holders in the San Joaquin and Sacramento River watersheds. The SWRCB's curtailment order applies to diversions of natural flow, but not to authorized diversions of water that is released from storage in upstream reservoirs.

The City holds both pre-1914 and post-1914 appropriative water rights. A significant portion of the water the City diverts under its post-1914 rights is water released from upstream reservoirs in the American River basin, which is not subject to the curtailment notice. The DOU anticipates that sufficient water will continue to be released from these upstream reservoirs to meet the City's surface water demands, but it is critical that the City maintain a

steadfast commitment to the ongoing water conservation measures while the drought persists, as well as long term water conservation planning to maintain water supply reliability.

Should the drought conditions persist into the fall and winter of 2014, it may be necessary to implement increased measures as called for in Stages 3 and/or 4 of the City's Water Shortage Contingency Plan. Staff has outlined a series of drought response triggers and actions to guide future decisions that may be necessary to achieve additional conservation and/or enhance water supplies. These actions may warrant immediate implementation if drought conditions persist. Therefore, it is prudent for the City to be proactive in the establishment of the fiscal policies necessary to expedite drought and water shortage mitigation plans and ensure adequate water supply.

RESOLUTION NO. 2014-0209

Adopted by the Sacramento City Council

June 17, 2014

DECLARING CONTINUING WATER SHORTAGE AND IMPLEMENTING ADDITIONAL WATER CONSERVATION RESTRICTIONS

BACKGROUND

- A. The City of Sacramento has three water supply sources: American River water, Sacramento River water, and groundwater. The City diverts surface water for approximately 85% of the City's water supply from the two rivers under its Sacramento and American River water rights and entitlements, with the remaining 15% provided by groundwater wells.
- B. Article XI of Chapter 13.04 of the Sacramento City Code (Outdoor Water Conservation) specifies outdoor water use limitations and restrictions to promote efficient water use and increase water conservation. City Code section 13.04.910 authorizes the City Council, by Resolution, to declare the existence of a water shortage and impose revised or additional limitations and restrictions on outdoor water use while the water shortage remains in effect.
- C. On January 14, 2014, based on critical drought conditions, the Sacramento City Council adopted Resolution No. 2014-0018, declaring a water shortage and implementing Stage 2 of the City's water shortage contingency plan, which enacted water conservation measures and water use restrictions in addition to those already included in the City Code with the goal of reducing water use by 20% or more.
- D. The City's Department of Utilities also activated an emergency drought response team, appointed an Incident Commander, and deployed an Incident Command Structure to effectively address all aspects of the drought including: operational issues, planning and strategy, public outreach and education, funding and financing, and logistics. The drought response team meets weekly.
- E. On January 17, 2014, Governor Jerry Brown signed a proclamation declaring a drought State of Emergency in California.

- F. On January 31, 2014, the State Board approved a Temporary Urgency Change Petition filed by the California Department of Water Resources (DWR) and U.S. Bureau of Reclamation (USBR), lowering Bay-Delta flow requirements to allow the DWR and USBR to reduce releases and maintain more water in State Water Project (SWP) and Central Valley Project (CVP) reservoirs, resulting in further reductions to river flow levels upstream of the City's surface water intakes. Since that time the State Board has approved subsequent revisions to SWP and CVP operations in response to the drought.
- G. On April 25, 2014, Governor Jerry Brown signed a proclamation of a continued drought State of Emergency in California, which included, among other things, the following provisions:
3. *Recognizing the tremendous importance of conserving water during this drought, all California residents should refrain from wasting water:*
 - a. *Avoid using water to clean sidewalks, driveways, parking lots and other hardscapes.*
 - b. *Turn off fountains and other decorative water features unless recycled or grey water is available.*
 - c. *Limit vehicle washing at home by patronizing local carwashes that use recycled water.*
 - d. *Limit outdoor watering of lawns and landscaping to no more than two times a week.*

Recreational facilities, such as city parks and golf courses, and large institutional complexes, such as schools, business parks and campuses, should immediately implement water reduction plans to reduce the use of potable water for outdoor irrigation.

Commercial establishments such as hotel and restaurants should take steps to reduce water usage and increase public awareness of the drought through measures such as offering drinking water only upon request and providing customers with options to avoid daily washing of towels or sheets.

* * *

- H. During the last week of May, 2014, the State Water Resources Control Board (State Board) issued notices of curtailment for post-1914 appropriative water rights in the Sacramento and San Joaquin River watersheds, and indicated that notices of curtailment to some pre-1914 and riparian right holders may be issued in the near future.

- I. The City of Sacramento is implementing numerous measures to implement the City Council's declaration of water shortage and Governor's drought proclamations, promote water conservation, and increase water use efficiency, by:
- Prohibiting the use of City water to wash down sidewalks, driveways, or parking areas.
 - Prohibiting the waste of City water from leaky water lines or fixtures, and prohibiting water runoff due to excessive application of City water for irrigation.
 - Encouraging residents to limit residential car washing by patronizing carwashes that recycle water. The City also prohibits residential car washing with a hose unless the hose is equipped with an automatic shut-off nozzle attachment, and the attachment is being used to shut off the flow of water at all times when the hose is not being used to wash the vehicle.
 - Limiting outdoor irrigation for residential or commercial purposes while daylight savings time is in effect to two days per week, based on the street address, with no watering allowed between 10 a.m. and 7 p.m., and no watering allowed at all on Mondays, Thursdays, and Fridays. Outdoor irrigation is restricted to one day per week when daylight savings time ends.
 - Significantly increasing enforcement of the City's outdoor water use restrictions, with a doubling of violation penalties while the water shortage remains in effect. To enforce these restrictions, the City has trained code enforcement officers to augment City water conservation staff in patrolling the streets. Over 1,800 notices of violation have been issued for irrigation-related violations since the water shortage began.
 - Establishing a multi-departmental task force to assure that the City would lead by example and significantly reduce the City's own water use. Following the City Council's declaration of a water shortage in January, the use of water from February through May by City parks and other City facilities (approximately 1,000 accounts) has been reduced by approximately 57 % from the same time period in 2013.
 - Working with commercial and governmental water service customers to identify ways to reduce water usage, including reductions in outdoor irrigation usage, and encouraging restaurants and hotels to conserve water by offering drinking water on request and providing options to the daily washing of towels or sheets.

- Conducting an extensive and ongoing public information effort throughout the City to inform City residents and businesses of the need for water conservation, the water use limitations and restrictions adopted and enforced by the City, and practical ways to reduce water use.
- Doubling the City’s ongoing leak detection and correction efforts.
- Advancing roll-out of the City’s “River Friendly Landscape Program” (aka “cash for grass”) to encourage residential customers to replace turf with drought tolerant landscaping.
- Expediting the rehabilitation of nine existing groundwater wells on an emergency basis to reduce surface water usage, and entering into agreements with neighboring agencies to receive supplemental groundwater if needed due to drought-related shortages.

J. The only item in the Governor’s proclamation of a continuing drought State of Emergency excerpted in Recital G, above, not already being addressed by the City is the call for residents and businesses to turn off fountains and other decorative water features unless recycled or grey water is used.

K. This Resolution adds a provision addressing the use of water fountains to the City’s Stage 2 water conservation measures, and adds restrictions to the City’s current outdoor water use requirements to improve the enforcement and effectiveness of these requirements while the water shortage continues.

BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:

Section 1. Based on the on-going drought conditions, the Sacramento City Council hereby declares that a water shortage continues to exist, and that each and every provision of Resolution No. 2014-0018 shall remain in full force and effect, as supplemented by the provisions of this Resolution.

Section 2. The water conservation measures and water use restrictions described below are adopted:

- A. The City Manager shall encourage City residents and businesses to turn off fountains and other decorative water features that do not use recycled water or grey water.

- B. No person shall knowingly or willingly cause or allow any city water used on residential property for non-irrigation purposes to flow away as water waste runoff (as defined in City Code section 13.04.840) from property owned or occupied by such person, except for water used to wash a vehicle in compliance with City Code section 13.04.870(B).

- Section 3. The water conservation measures and water use restrictions described in Section 2 of this Resolution are in addition to the provisions of Resolution No. 2014-0018 and the existing provisions of Article XI of Chapter 13.04 of the City Code (Outdoor Water Conservation); in the event of any conflict between any provision of Article XI and this Resolution or Resolution No. 2014-0018, the provisions of this Resolution and Resolution No. 2014-0018 shall govern while these Resolutions remain in effect.
- Section 4. The City Manager is authorized and empowered to delegate the City Manager's authority hereunder to such assistants, deputies, officers, employees, or agents of the City as the City Manager shall designate, and to establish such rules, regulations, and procedures, and to prepare or furnish such forms, as the City Manager deems necessary or appropriate to carry out the provisions of this Resolution.
- Section 5. No person shall use, or cause to be used, City water in violation of any of the provisions of this Resolution, or of Resolution No. 2014-0018, while the water shortage remains in effect, as specified in City Code § 13.04.870(G).
- Section 6. The penalties for violations specified in City Code § 13.04.890 shall continue to be doubled while the water shortage remains in effect, as specified in City Code § 13.04.890(D).
- Section 7. This Resolution shall be effective upon its adoption, and shall remain in effect until rescinded or otherwise modified by subsequent resolution of the City Council.
- Section 8. This Resolution shall be published within ten days after its adoption, pursuant to California Water Code § 376(a).

Adopted by the City of Sacramento City Council on June 17, 2014, by the following vote:

Ayes: Members Ashby, Cohn, Hansen, McCarty, Pannell, Schenirer, Warren, and Mayor Johnson.

Noes: None

Abstain: None

Absent: Member Fong.

Attest:

Shirley A. Concolino

Digitally signed by Shirley A. Concolino
DN: cn=Shirley A. Concolino, o=City of Sacramento, ou=City Clerk,
email=sconcolino@cityofsacramento.org, c=US
Date: 2014.06.23 11:42:59 -07'00'

Shirley Concolino, City Clerk



City of Sacramento

Mike Wasina
Electrician Supervisor
Department of Utilities
301 Water Street
Sacramento, CA 95811
916-798-7579
Mwasina@CityOfSacramento.Org

GE
Energy

Darren Evans

Sales Manager
Bently Nevada Asset Condition
Monitoring

darren1.evans@ge.com
W: (360) 597-3138
F: (360) 368-6067
M: (775) 230-3983

For the attention of: **Mr. Wasina**
Subject: **Bently Nevada online condition monitoring on Intake Pumps**
Reference: Proposal No. 1049217 rev 0 (Budgetary Price Proposal)
Proposal Date: 1-April-2014

GE - Bently Nevada is pleased to submit this Budgetary Price Proposal to provide Bently Nevada Machinery Protection hardware and services for the motor driven intake pumps at the Sacramento and American Rivers. Currently these machines are currently not equipped with vibration monitoring. After a review by our application best practices on these machines, the recommended monitoring includes our 1900/65A monitoring & Protection system, (3) case mounted Velomitor sensors and associated cabling per unit. The sensors will be placed on each of the motor bearings (top & bottom) and one placed perpendicular to the pump discharge piping near the coupling area. A site walk down on the Sacramento facility recorded the following details for the (8) machines. This proposal will focus on budgetary numbers for the Sacramento facility only for now, but price per unit estimates can be carried to the American River facility.

- (6) - 300HP Motor Driven Pumps
- (2) - 150HP Motor Driven Pumps



The 1900/65A monitoring protection systems contain (4) vibration inputs, (4) temperature inputs (not used in this case), 4-20mA outputs, relay outputs, local display and TCP/IP Modbus interface to export the data to the plant PLC/DCS. The 1900/65A is software configurable and all alarm and danger parameters as well as Modbus communications can be configured. The Modbus Gateway allows the monitor to provide static variables, statuses, event list, time and date information directly to any Modbus client, including Distributed Control Systems (DCSs), Supervisory Control and Data Acquisition (SCADA) systems, Programmable Logic Controllers (PLCs). Additionally, the 1900/65A systems will be provided with a NEMA 4X enclosure to be mounted on the unistrut next to the machines



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By installing the Bently Nevada 1900/65A monitoring systems, the City of Sacramento will gain online continuous monitoring of these machines with data trended back and the PLC/DCS. This will allow the City of Sacramento to evaluate the operating conditions and the health of the equipment to make operating decisions. Recently with lower water levels, the machines have experienced cavitation, where the monitoring system can evaluate and determine the severity of the conditions. The scope of this proposal includes the necessary hardware (1900/65A, Velomitors and cables) along with services (Kick of meeting, electrical design drawings, configuration, loop checks, startup technical assistance, DCS integration and a project report).

Budgetary Priced Proposal

| Description | Price |
|--|--|
| <p>Base Project – 1900/65A monitoring systems: GE Energy-Bently Nevada will provide (8) 1900/65A monitoring & protection systems to monitor the intake pumps at the Sacramento River facility. Pricing includes (3) Velomitor sensors per unit and associated cabling. Services include, site kick off meeting, electrical design drawings, configuration, loop checks, Modbus communication (DCS support), startup/commissioning services and project report.</p> | <p>\$ 110,868.00 (Approx. \$13,858 per unit)</p> |

Note 1: The above price does not include taxes or duties.

Scope of Work:

ADDITIONAL ASSUMPTIONS & CLARIFICATIONS:

- All prices are budgetary, +/- 15%
- Purchased and installed in 2014
- Services estimate is based on using local services from the Sacramento, CA area. 6 weeks notice required to ensure local resources can be used, otherwise airfare will need to be priced into the proposal.
- Startup of the machines associated with the 8x 1900/65A systems is expected to occur over 2 days, as quoted.

BUYER RESPONSIBILITIES:

- Appoint a Project Manager as a single point of contact responsible for obligations associated with this project.
- City of Sacramento IT folks available to support integration of systems (Ethernet cable from 1900/65A rack to DCS)
- Installation and wiring of the 1900/65A systems is to be provided by City of Sacramento. Bently Nevada will provide electric drawings showing wiring connections. Connections required before Bently Nevada arriving onsite for testing.



- Provide advanced notification of safety training requirements.
- Supply GE with any site-specific policies and procedures.
- Coordination with plant operations for the implementation of scope of work.
- Plan internal resources as required to implement scope and schedule defined.
- Supply needed work permits prior to start of each workday.
- Buyer to provide a work area to consist of desk and phone access.
- Removal of covers to access transducers, if required.
- Buyer will provide all plant services such as light, heat, water, electric power and disposal of all waste materials.

TERMS AND CONDITIONS:

This proposal is subject to the terms and conditions listed below, and by reference are incorporated herein. To the extent there are conflicts or inconsistencies between this set of Terms and Conditions and the preceding information provided in this document, the preceding information shall prevail.

- GE Oil & Gas ES 104 Terms and Conditions (per below) noted below.

PAYMENT TERMS:

Our Firm Price Quotation is based upon the following invoicing schedule and terms:

- 1.1.1 All Pricing is in United States Dollars (US\$)**
- 1.1.2 All Payments are NET 30 Days from receipt of invoice**
- 1.1.3 Project Invoicing Schedule:**

| <i>Project Payment Milestone</i> | <i>Invoice Amount</i> |
|---|------------------------------|
| Contract Signing/Purchase Order Receipt | 25% |
| Shipment of Equipment (Hardware/Software) | 70% |
| Demobilization from the jobsite | 5% |

PURCHASE ORDER:

Buyer's Purchase order shall provide the following deliverables:

- Purchase Order conforming to this proposal.
- Purchase Order should be made out to **Bently Nevada, Inc.** at the address listed below.

Note: Deviations from the proposal in Scope, Price, payment schedule, Terms and Conditions, Shipment Cycle, or Installation Cycle may cause delays or non-acceptance of Purchase Order.

- The execution period of this contract starts from Sellers Order Acknowledgement date.



LEGAL ENTITY:

Upon the Buyer's decision to submit a purchase order, please address the Purchase order to the following Seller's Legal Entity:

- Upon the Buyer's decision to submit a purchase order, please address the Purchase order to:
Bently Nevada, Inc.
1631 Bently Parkway South
Minden, NV 89423
Attn: Darren Evans

NOTE: Please FAX Purchase Order to (360) 368-6067 or email PDF version to darren1.evans@ge.com.

GENERAL PRICING CONSIDERATIONS:

Pricing Basis and proposal validity

Prices herein are fixed price and valid for 60 days of the proposal date. Bently Nevada Inc. reserves the right to review the pricing assumptions and adjust the project pricing based upon an agreed upon project schedule.

Out of Scope Works

"Out of scope works" shall be defined as "Any additional work required, requested, or recommended not specifically defined in the scope of work proposed herein". Upon receipt of written request, Seller may provide a firm price quotation or perform the work at the rates provided herein. Additional works will not commence until additional pricing and/or changes to schedule have been agreed.

Delays

Delays in the performance of work beyond the reasonable control of Seller, or delays caused by acts of the Buyer or prerequisite work by others, shall entitle Seller to an adjustment of time and price for completion of its work and expenses resulting there from.

All information and pricing contained herein is confidential to GE Energy. Any distribution or use of this document for purposes other than its original intent is expressly forbidden without prior GE Energy written authorization.



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We thank you for the opportunity to provide this fixed priced proposal for this project to help define project scope. Additional information on GE Energy and our products and services can be found on our website at www.ge-energy.com/oc. If you have any questions or concerns regarding this proposal, please do not hesitate to contact my cell phone at (775) 230-3983.

Yours sincerely,
For and On behalf of GE Energy – Measurement & Control Solutions



Darren Evans
Sales Manager
Bently Nevada Asset Condition Monitoring
M: (775) 230-3983

This document, all related and derivative information, whether written or oral is submitted in confidence for evaluation by the Buyer. As such, its contents are proprietary and confidential to Seller. In taking receipt of this document, Buyer agrees not to reveal its contents, to third parties or otherwise, except to those who must evaluate it. Upon written request of Seller, Buyer will return all copies of this document to Seller. The equipment listed in this document is based on preliminary information and is subject to change.

Sales Contact:

Darren Evans, Sales Manager
Bently Nevada, Inc.
1631 Bently Parkway South
Minden, NV 89423
Mobile Phone: (775) 230-3983
Office Phone: (360) 597-3138
Darren1.evans@ge.com



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City of
SACRAMENTO

NOTICE OF EXEMPTION

TO: X County Clerk
County of Sacramento

— Office of Planning and Research
1400 10th Street, Room 121
Sacramento, CA 95814

FROM: City of Sacramento
Community Development Dept.,
Planning Division
300 Richards Boulevard, 3rd Flr.
Sacramento, CA 95811

ACTIVITY/PROJECT TITLE: Sacramento River Intake Vortex Breakers

ACTIVITY/PROJECT LOCATION: Jibboom Street, accessed through Jibboom Street Park located at 450 Jibboom Street (APN: 001-0190-006).

CITY: Sacramento

COUNTY: Sacramento

DESCRIPTION OF ACTIVITY/PROJECT: The project consists of fabricating and installing vortex breakers for the Sacramento River Intake pumps to allow the City to pump at a lower level without cavitating the pumps. The work will allow the City to maintain existing diversion capability when the river flow drops.

NAME OF PUBLIC AGENCY APPROVING ACTIVITY/PROJECT: City of Sacramento

NAME OF PERSON/AGENCY CARRYING OUT ACTIVITY/PROJECT: City of Sacramento, Dept. of Utilities; 1395 35th Avenue; Sacramento, CA 95822; Contact: Dan Sherry (916) 808-1419

THE CITY OF SACRAMENTO FINDS THAT THE ACTIVITY/PROJECT IS EXEMPT.

Exempt Status: (Check One)

- Activity is not a project as defined in Section 15378 [Section 15061(b)(1)]
- Activity has no potential for causing a significant effect on the environment [Section 15061(b)(3)]
- Statutory Exemption [Section 21080(b)(8)]
- Ministerial Exemption [Section 15268]
- Declared Emergency Exemption [Section 15269(a)]
- Emergency Project [Section 15269(b) and (c)]
- Categorical Exemption-State Class 1 and Section Number(s) 15301

REASONS WHY ACTIVITY/PROJECT IS EXEMPT: **15301 Existing Facilities** - The project consists of operation, maintenance and minor alteration of an existing utility facility to maintain existing diversion capability when river flow drops, with no expansion of capacity and no increased use. The vortex breakers are required to maintain the City's access to water for treatment.

CONTACT PERSON: Scott Johnson, Associate Planner

TELEPHONE: (916) 808-5842

SIGNED: _____

Scott Johnson

DATED: _____

6-6-14

Lower American River Pump Station Modifications – City of Sacramento

List of References

- ◆ Supplemental Agreement No. 3 Underwater Dive and ROV Services for Water Facilities, [All pages](#)
- ◆ 2014 Drought Response Update and Vibration Monitoring Equipment Purchase Approval, [All pages](#)

SUPPLEMENTAL AGREEMENT

Project Title and Job Number: Underwater Dive and ROV Services for Water Facilities

Date: 2/21/14

Purchase Order #: 20800

Supplemental Agreement No.: 3

The City of Sacramento ("City") and Above and Below the H20 ("Contractor"), as parties to that certain Professional Services Agreement designated as Agreement Number 2012-0095, 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:

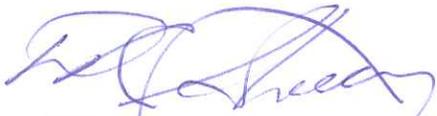
The Contractor shall provide and perform Underwater Dive and ROV Inspection and cleaning services for the City's Sacramento and American River Water intakes through January 2015, and Sediment Removal from the Sacramento River water intake structure, as specified in the Contractor's scope of services attached hereto and incorporated herein by this reference.

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 \$300,300, and the Agreement's maximum not-to-exceed amount is amended as follows:

| | |
|---|-----------|
| Agreement's original not-to-exceed amount: | \$80,000 |
| Net change by previous supplemental agreements: | \$ 19,650 |
| Not-to-exceed amount prior to this supplemental agreement: | \$ 99,650 |
| Increase by this supplemental agreement: | \$300,300 |
| New not-to exceed amount including all supplemental agreements: | \$399,950 |

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:



Project Manager

Approved By:



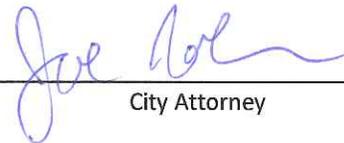
Contractor

Approved By:



City of Sacramento

Approved As To Form By:



City Attorney

Attested To By:



City Clerk

2012-0095-3

Title: Underwater Dive and ROV Services for Water Facilities

Other Party: Above and Below the H20



Above & Below the H₂O Underwater Dive and ROV Services

Project# 14001111(RFP#123351009)

Project name: Underwater Dive & ROV Services for Drinking Water Facilities

Professional Services Agreement No. 2012-0095-2 / P.O. # 208000

February 2014 to January 2015

Item 1: Sacramento River Intake 3-Cavi blaster screen cleans = **\$33,600.00**
(\$2,800.00 per day X 4-days = \$11,200.00 per clean)

Item 2: American River Intake 2-Cavi blaster screen cleans = **\$22,400.00**
(\$2,800.00 per day X 4-days = \$11,200.00 per clean)

Item 3: Sac or American River Intake 6-standard brush screen cleans = **\$13,200.00**
(\$2,200.00 per day w/ boat and 3-man crew X 1-day = \$2,200.00 per clean)

Item 4: American River Intake inboard / outboard screens Bay # 4
18-brush screen clean = **\$19,800.00**
(\$1,100.00 ½ rate per day w/ boat and 3-man crew X ½ -day = \$1,100.00 per clean)

Item 5: Remotely Operated Vehicle (ROV) inspections / 4 inspections = **\$7,400.00**
(\$1,450.00 ½ day rate to \$1,850.00 full day rate)

Item 6: Commercial diving rates for 3, 4 & 5 man crews 3 dives = **\$8,400.00**
(\$1,650.00 half day rate 3-man crew to \$2,800.00 5-man crew full day rate)

Item 7: Emergency Contingency = **\$8,000.00**

Total for 1 year contract = \$112,800.00

(Items 1-7 are non prevailing wage rates)

Clean Water for Life...



Above & Below the H₂O Underwater Dive and ROV Services

Project# 14001111(RFP#123351009)

Project name: Underwater Dive Services for the Sediment Removal from the Sacramento River Raw Water Intake Structure

Professional Services Agreement No. 2012-0095-2 / P.O. # 208000

Item 1: Commercial Dive Services (underwater sediment removal)

Description: Estimated 800-cubic yards underwater diving and dredging for the sediment removal from the Sacramento River Raw Water Intake

Duration: 20-days

Costs: 5-man crew at \$3,000.00 per day X 20 days = **\$60,000.00**

Item 2: Pac Machine Equipment Rental (5-pumps and 1 generator)

Description: 1-Flygt submersible dredge pump, 1-Flygt submersible high pressure pump, 1-Flygt submersible suction pump, 2-Godwin booster pumps (diesel), hoses and fittings and 1-Genset diesel 125 KVA generator (powers the 3 electric pumps)

Duration: 1 month rental

Costs: 5 pumps, 1 generator & equipment 1 month rental= **\$30,000.00**

Item 3: Adler Tanks / 12 Tank Rentals (settling containment boxes)

Description: 6-18,000gal open top Weir tanks and 6-18,000gal open top tanks for the sediment separation and water containment (on site sed basins) and disposal of the sediment and the reclaim of the water.

Duration: 22 days

Costs: = Mobilization and Demobilization with rental= **\$25,000.00**

Item 4: Vacuum (Vactor) Truck Services (sediment disposal)

Description: 12-cubic yard Vactor truck to remove the sediment from the weir tanks and transport the sediment to a disposal location (Gardenland Sand & Gravel)

Duration: 20 Days

Costs: 20 days removing sediment and hauling with dumping= **\$40,000.00**

Item 5: HDPE Piping / 6-inch x 1,600-foot w/ fusion machine rental & labor

Description: 1,600-foot of 6-inch HDPE discharge piping to move the sediment and reclaimed water from the pumps to the weir tanks for the sediment separation. Fuse and install the pipe prior to pumping and then removing the pipe upon completion of the project.

Duration: 2-days install, 1-day removal and 20 –days for pumping

Costs: Purchase and transport pipe, fusion machine rental & labor= **\$15,000.00**

Clear Water for Life...



Item 6: Security & Safety (temporary fencing and trailer mounted video monitoring)

Description: 6-foot chain link security fencing to cordon off the intake bridge, the area around the fountain and to secure any equipment or materials used for the project and post *No Trespassing Signs*. In addition a video surveillance mini trailer will be used to monitor the equipment on site.

Duration: monthly rental

Costs: monthly rental w/ install and uninstall= \$2,000.00

Item 7: PG&E Property Site Preparation and Restoration

Description: prepare the area where the weir boxes will be staged and recondition or repair the area when the project is completed

Duration: 2 days preparation, 2 days restoration

Costs: = \$5,000.00

Item 8: All Mobilization & Demobilization of the equipment and materials to and from the site

Description: Coordinate the deliver and set up of the generator and pump installations. Oversee the delivery, placement and connections of the weir boxes. Direct the placement of the security fencing and video surveillance coverage. Coordinate the removal of all equipment and materials from the work site. Clean up and return the site for public access.

Duration: 4 days prior to beginning the underwater work and 2 day upon the completion

Costs: = \$8,000.00

Item 9: Dredging & engineering consulting fees

Description: Site and location visits to assess the conditions, equipment and materials required to remove the sediment from the bottom of the intake structure. Attend the City staff and equipment manufactures meetings. Conduct the product and equipment research and do the design engineering for the pump requirements.

Costs: 20 hours billed at \$125.00 per hour = \$2,500.00

Total for items 1-9=\$187,500.00

(Items 1-9 are non prevailing wage rates)

Clean Water for Life...

Meeting Date: 6/17/2014

Report Type: Staff/Discussion

Report ID: 2014-00426

Title: 2014 Drought Response Update and Vibration Monitoring Equipment Purchase Approval

Location: Citywide

Recommendation: Pass 1) a Resolution declaring that a water shortage continues to exist, and implementing additional water conservation restrictions; and 2) a Motion authorizing the City Manager or the City Manager's designee to sign an emergency contract with Bently Nevada, Inc. for the purchase of vibration monitoring equipment for the City's water intake pumps, for an amount not-to-exceed \$225,000.

Contact: Dave Brent, Director, (916) 808-1400; Terrance Davis, Program Manager, (916) 808-1868, Department of Utilities

Presenter: Terrance Davis, Program Manager, (916) 808-1868, Department of Utilities

Department: Department Of Utilities

Division: Office of the Director Admin

Dept ID: 14001011

Attachments:

1-Description/Analysis

2-Background

3-Resolution

4-SF1049217 City of Sacramento Online Monitoring

City Attorney Review

Approved as to Form

Joe Robinson

6/10/2014 6:32:21 PM

Approvals/Acknowledgements

Department Director or Designee: Dave Brent - 5/29/2014 5:24:16 PM

Description/Analysis

Issue Detail: Calendar year 2013 was the driest year on record for much of Northern and Central California. Water storage in the Folsom Reservoir in May was approximately 57% of capacity and recent precipitation in the late winter and spring of 2014 had minimal impact on overall water storage. On January 14, 2014, the City Council adopted Resolution No. 2014-0018 declaring a water shortage as authorized under City Code section 13.04.910 and implemented Stage 2 of the City of Sacramento Water Shortage Contingency Plan (WSCP). On January 17, 2014, Governor Jerry Brown declared a State of Emergency due to critical drought conditions, and the Governor issued a second drought proclamation on April 25, 2014. This report provides an update of the City's ongoing drought and water shortage response and mitigation efforts, and requests adoption of a second water shortage resolution, and approval to purchase vibration monitoring equipment for the City's surface water intakes affected by low river flows resulting from the ongoing drought conditions.

Policy Considerations: The City's ongoing drought mitigation actions are consistent with the requirements of Section 10632 of the California Water Code, Chapter 5 of the City's 2010 Urban Water Management Plan, and Article XI (Outdoor Water Conservation) of Chapter 13.0 of City Code. City Council approval is required for purchases of \$100,000 or more. On March 4, 2014, the City Council passed Resolution No. 2014-0057, suspending competitive bidding for the purchase or lease of equipment, supplies, and services needed on an emergency basis to mitigate water shortage impacts for a cumulative amount not-to-exceed \$1,000,000.

Resolution No. 2014-0057 applies to the proposed purchase of vibration monitoring equipment for the City's surface water intakes, because the drought has resulted in significantly lower river levels than the City is used to seeing at the intakes, which potentially can cause cavitation that can lead to permanent intake pump damage. The purchase and installation of vibration monitoring equipment will detect potentially harmful vibrations so that operators are notified and the pumps are shut down before damage can occur. Due to the critical time-sensitive nature of this equipment, this purchase was not competitively bid. Given the immediacy of the City's drought response, Bently Nevada was selected as a vendor to provide this equipment for two reasons: 1) the vibration sensors desired contain programmable logic controls (PLC) which provide an immediate interface into existing Utilities pump control technologies; 2) the vendor provides regional support for troubleshooting and future maintenance.

Economic Impacts: Unknown.

Environmental Considerations: The proposed action is exempt from review under the California Environmental Quality Act (CEQA) as part of the City's continuing administrative activities to implement the UWMP (CEQA Guidelines section 15378(b)(2)), and because it can be seen with certainty that the action would have no significant effect on the environment (CEQA Guidelines section 15061(b)(3)). A reduction in water usage will reduce potential environmental effects associated with water use, by reducing surface water diversions, as well as reducing energy consumption and other impacts

associated with water production and distribution and the collection and treatment of this water after it has been used. A reduction in surface water diversions also will increase the availability of surface water for maintenance and protection of natural resources and the environment. Purchase and installation of the vibration monitoring equipment is exempt from CEQA under CEQA Guidelines section 15301(b), as a minor alteration of existing utility facilities with no expansion of existing levels of use.

Sustainability: Continued implementation of the WSCP supports the City's sustainability goals of reducing greenhouse gases and conserving resources.

Commission/Committee Action: Not applicable.

Rationale for Recommendation:

Financial Considerations: Under the current rate structure, continued or expanded implementation of the Water Shortage Contingency Plan will likely decrease the Department of Utilities' water revenues that are generated from its customer base that is billed by volumetric consumption. The Department will continue to closely monitor the cost and revenue impacts of sustained and expanded implementation of the City's water shortage measures.

The proposed purchase of vibration monitoring equipment, for an amount not-to-exceed \$225,000, was not competitively bid because it is a drought-response measure for which the City Council suspended competitive bidding under Resolution No. 2014-0057. The contracting amount presently available without competitive bidding under Resolution No. 2014-0057 is sufficient for the proposed purchase. On April 22, 2014, the City Council authorized the continued lease of submersible pumps at the Fairbairn Water Treatment Plant, without competitive bidding, as an emergency drought-response measure under Resolution No. 2014-0057, for an amount not-to-exceed \$313,500.

This reduced the amount available for emergency drought-response procurement without competitive bidding under Resolution No. 2014-0057 to \$685,500, which is more than the proposed purchase amount of \$225,000. Adequate funds are available in the Department's capital budget Z1414-0505 for this purchase.

Local Business Enterprise (LBE): Due to the emergency nature of the vibration equipment installation, and the City Council's prior suspension of competitive bidding for emergency drought-response actions, staff requested a LBE Participation Waiver.

Background

Drought Conditions and Outlook

Calendar year 2013 was the driest year on record for much of Northern California. This condition was preceded by two consecutive years of below normal precipitation in the Sacramento region and snow pack in the Sierra Nevada Mountains. Water storage at Folsom Reservoir remains very low, at approximately 57% of capacity as of May 2014. No significant precipitation is forecast for the remainder of the spring and summer.

On January 17, 2014 Governor Brown declared a Drought State of Emergency for the State of California. Preceding the State's pronouncement, on January 14, 2014 the Sacramento City Council adopted Resolution No. 2014-0018 declaring a water shortage, pursuant to City Code section 13.04.910, and implementing Stage 2 of the Water Shortage Contingency Plan (WSCP) as outlined in the City's 2010 Urban Water Management Plan (UWMP).

On April 25, 2014, Governor Brown issued an additional proclamation redoubling drought mitigation efforts. Specifically, the Governor's order calls on Californians and California businesses to take specific actions to conserve water, including limiting lawn watering and car washing; recommends that schools, parks and golf courses limit the use of potable water for irrigation; and asks that hotels and restaurants give customers options to conserve water by not washing sheets and towels, and only serving water upon request. The order also prevents homeowner associations from fining residents that limit their lawn watering and take other water conservation measures.

WSCP Stage 2 Activities

The City's UWMP Stage 2 establishes a goal for at least 20% reduction in overall water consumption. The Department of Utilities (DOU) has measured this by comparing monthly 2014 water production to the baseline average of 2012 and 2013 production. To accomplish this reduction the City is employing a 'portfolio' water savings approach, which is inclusive of a range of water shortage measures intended to educate and provide tools to customers to achieve conservation, generally consisting of:

- Customer outreach and education;
- Increased Water Conservation Ordinance enforcement;
- Conservation incentive programs; and
- Operational efficiencies to enhance water production capabilities and minimize distribution water losses.

A Citywide Drought Taskforce has been established to work collaboratively on City communication and operational strategies to achieve Stage 2 water conservation objectives. Through the Task Force, City departments have developed water use reduction plans. Department plans include revised operational practices to reduce irrigation at City parks and medians and programs to recapture and reuse water used for maintenance and construction. Departments will provide ongoing updates of their drought mitigation activities.

Article XI of Chapter 13.04 of the Sacramento City Code establishes the City's outdoor water use requirements and penalties for noncompliance. Under City Code section 13.04.890 (D), when the City Council declares a water shortage, the penalty amounts specified for violations of the City's ordinance are doubled while the water shortage remains in effect.

Effective March 9, 2014, water shortage regulations limited outdoor irrigation during daylight savings time to two days per week. To improve enforcement, the DOU and Community Development Department have collaborated to utilize Code Enforcement staff to assist with outdoor water use patrols. Since April 2014, this strategy has bolstered the number of City staff involved in patrols from approximately 7 to 40, providing a significant augmentation to water conservation enforcement efforts.

The DOU recently completed a survey of customers to determine the most effective strategies to improve drought outreach and communication. Beginning in late February, a variety of media efforts including utility bill inserts began to educate customers on the daylight savings irrigation restrictions and other ways to reduce water consumption. In addition, the City continues ongoing collaborative outreach and planning efforts with regional and State partners, such as the Regional Water Authority (RWA), the Water Forum, and the Association of California Water Agencies (ACWA).

In April 2014, at Council's direction, DOU began implementation of the River Friendly Landscape Program (cash for grass). Participants in this program

will receive 50 cents per square foot in rebates for converting their existing turf grass to drought tolerate and water-wise landscapes. This program augments the existing incentive programs that are available to residential and business customers to upgrade to higher efficiency appliances and fixtures. As of May 2014, there are approximately 700 residents who have expressed interest in the program. Funds have been identified for the pilot Program in the approved Fiscal Year 2013/14 DOU operating budget.

Water losses in the distribution system are estimated to be roughly 10% of total annual water production. To address this, the DOU has expanded acoustic leak detection operations to identify and repair distribution system water losses. Since January 2014 this program has reduced water loss by approximately 1.3M gallons. Leak detection will be an ongoing component of the Department's strategy to recover and maximize existing water resources.

Given the lower flows in the American and Sacramento Rivers, the City has recently taken a number of actions to mitigate potential adverse impacts of the ongoing drought conditions on the City's water production capabilities. These actions include the installation of temporary submersible pumps at the American River Intake, contracting on an emergency basis for the removal of sediment at the Sacramento River intake, and the acceleration of work necessary to restore service at nine groundwater wells.

Recommended Purchase of Vibration Monitoring Equipment

The drought has resulted in significantly lower river levels than the City is used to seeing at its surface water intakes, which can potentially cause cavitation that can lead to permanent pump damage. To prevent this from happening, DOU is recommending the purchase and installation of vibration monitoring equipment that will detect potentially harmful vibrations before damage occurs. This equipment would tie into DOU's SCADA system with an alarm to alert Operations staff, and a subsequent automatic shutdown of the pumps before damage could occur. This equipment provides a twofold benefit with protection of our infrastructure and increased systems reliability. To purchase and implement a fully automated protective system will cost approximately \$225,000.

Conservation Results

Customer outreach has been successful in raising awareness of Stage 2 water restrictions and resulted in a substantial increase in water use violation calls. Between January 1 and May 31, 2014 there were 1720 reports of improper water use, as compared to 60 in the same period in 2013.

Since the Council's water shortage declaration, water production [as measured in millions of gallons per day (MGD)] has begun to decline. Detailed water production results will continue to be provided on a regular basis to monitor progress and will serve as a trigger to determine future actions and recommendations.

Future Drought Mitigation Plans

Both the California Department of Water Resources and U.S. Bureau of Reclamation have significantly reduced upstream reservoir releases to conserve water and are considering reducing flows even lower based on an anticipated dry winter. This has resulted in lower flows in the American and Sacramento Rivers where the City's two surface water intakes are located, although Reclamation's releases into the lower American River currently are higher than previously anticipated, which Reclamation has indicated is occurring to meet salinity requirements in the Delta. The regional purveyors who rely on water from Folsom reservoir have expressed concerns that Reclamation's continued higher-than-expected releases from the reservoir may jeopardize future water availability from the reservoir if another dry year occurs.

During the last week of May, the State Water Resources Control Board (SWRCB) issued notices of curtailment to post-1914 appropriative water right holders in the San Joaquin and Sacramento River watersheds. The SWRCB's curtailment order applies to diversions of natural flow, but not to authorized diversions of water that is released from storage in upstream reservoirs.

The City holds both pre-1914 and post-1914 appropriative water rights. A significant portion of the water the City diverts under its post-1914 rights is water released from upstream reservoirs in the American River basin, which is not subject to the curtailment notice. The DOU anticipates that sufficient water will continue to be released from these upstream reservoirs to meet the City's surface water demands, but it is critical that the City maintain a

steadfast commitment to the ongoing water conservation measures while the drought persists, as well as long term water conservation planning to maintain water supply reliability.

Should the drought conditions persist into the fall and winter of 2014, it may be necessary to implement increased measures as called for in Stages 3 and/or 4 of the City's Water Shortage Contingency Plan. Staff has outlined a series of drought response triggers and actions to guide future decisions that may be necessary to achieve additional conservation and/or enhance water supplies. These actions may warrant immediate implementation if drought conditions persist. Therefore, it is prudent for the City to be proactive in the establishment of the fiscal policies necessary to expedite drought and water shortage mitigation plans and ensure adequate water supply.

RESOLUTION NO. 2014-0209

Adopted by the Sacramento City Council

June 17, 2014

DECLARING CONTINUING WATER SHORTAGE AND IMPLEMENTING ADDITIONAL WATER CONSERVATION RESTRICTIONS

BACKGROUND

- A. The City of Sacramento has three water supply sources: American River water, Sacramento River water, and groundwater. The City diverts surface water for approximately 85% of the City's water supply from the two rivers under its Sacramento and American River water rights and entitlements, with the remaining 15% provided by groundwater wells.
- B. Article XI of Chapter 13.04 of the Sacramento City Code (Outdoor Water Conservation) specifies outdoor water use limitations and restrictions to promote efficient water use and increase water conservation. City Code section 13.04.910 authorizes the City Council, by Resolution, to declare the existence of a water shortage and impose revised or additional limitations and restrictions on outdoor water use while the water shortage remains in effect.
- C. On January 14, 2014, based on critical drought conditions, the Sacramento City Council adopted Resolution No. 2014-0018, declaring a water shortage and implementing Stage 2 of the City's water shortage contingency plan, which enacted water conservation measures and water use restrictions in addition to those already included in the City Code with the goal of reducing water use by 20% or more.
- D. The City's Department of Utilities also activated an emergency drought response team, appointed an Incident Commander, and deployed an Incident Command Structure to effectively address all aspects of the drought including: operational issues, planning and strategy, public outreach and education, funding and financing, and logistics. The drought response team meets weekly.
- E. On January 17, 2014, Governor Jerry Brown signed a proclamation declaring a drought State of Emergency in California.

- F. On January 31, 2014, the State Board approved a Temporary Urgency Change Petition filed by the California Department of Water Resources (DWR) and U.S. Bureau of Reclamation (USBR), lowering Bay-Delta flow requirements to allow the DWR and USBR to reduce releases and maintain more water in State Water Project (SWP) and Central Valley Project (CVP) reservoirs, resulting in further reductions to river flow levels upstream of the City's surface water intakes. Since that time the State Board has approved subsequent revisions to SWP and CVP operations in response to the drought.
- G. On April 25, 2014, Governor Jerry Brown signed a proclamation of a continued drought State of Emergency in California, which included, among other things, the following provisions:
3. *Recognizing the tremendous importance of conserving water during this drought, all California residents should refrain from wasting water:*
 - a. *Avoid using water to clean sidewalks, driveways, parking lots and other hardscapes.*
 - b. *Turn off fountains and other decorative water features unless recycled or grey water is available.*
 - c. *Limit vehicle washing at home by patronizing local carwashes that use recycled water.*
 - d. *Limit outdoor watering of lawns and landscaping to no more than two times a week.*

Recreational facilities, such as city parks and golf courses, and large institutional complexes, such as schools, business parks and campuses, should immediately implement water reduction plans to reduce the use of potable water for outdoor irrigation.

Commercial establishments such as hotel and restaurants should take steps to reduce water usage and increase public awareness of the drought through measures such as offering drinking water only upon request and providing customers with options to avoid daily washing of towels or sheets.

* * *

- H. During the last week of May, 2014, the State Water Resources Control Board (State Board) issued notices of curtailment for post-1914 appropriative water rights in the Sacramento and San Joaquin River watersheds, and indicated that notices of curtailment to some pre-1914 and riparian right holders may be issued in the near future.

- I. The City of Sacramento is implementing numerous measures to implement the City Council's declaration of water shortage and Governor's drought proclamations, promote water conservation, and increase water use efficiency, by:
- Prohibiting the use of City water to wash down sidewalks, driveways, or parking areas.
 - Prohibiting the waste of City water from leaky water lines or fixtures, and prohibiting water runoff due to excessive application of City water for irrigation.
 - Encouraging residents to limit residential car washing by patronizing carwashes that recycle water. The City also prohibits residential car washing with a hose unless the hose is equipped with an automatic shut-off nozzle attachment, and the attachment is being used to shut off the flow of water at all times when the hose is not being used to wash the vehicle.
 - Limiting outdoor irrigation for residential or commercial purposes while daylight savings time is in effect to two days per week, based on the street address, with no watering allowed between 10 a.m. and 7 p.m., and no watering allowed at all on Mondays, Thursdays, and Fridays. Outdoor irrigation is restricted to one day per week when daylight savings time ends.
 - Significantly increasing enforcement of the City's outdoor water use restrictions, with a doubling of violation penalties while the water shortage remains in effect. To enforce these restrictions, the City has trained code enforcement officers to augment City water conservation staff in patrolling the streets. Over 1,800 notices of violation have been issued for irrigation-related violations since the water shortage began.
 - Establishing a multi-departmental task force to assure that the City would lead by example and significantly reduce the City's own water use. Following the City Council's declaration of a water shortage in January, the use of water from February through May by City parks and other City facilities (approximately 1,000 accounts) has been reduced by approximately 57 % from the same time period in 2013.
 - Working with commercial and governmental water service customers to identify ways to reduce water usage, including reductions in outdoor irrigation usage, and encouraging restaurants and hotels to conserve water by offering drinking water on request and providing options to the daily washing of towels or sheets.

- Conducting an extensive and ongoing public information effort throughout the City to inform City residents and businesses of the need for water conservation, the water use limitations and restrictions adopted and enforced by the City, and practical ways to reduce water use.
- Doubling the City's ongoing leak detection and correction efforts.
- Advancing roll-out of the City's "River Friendly Landscape Program" (aka "cash for grass") to encourage residential customers to replace turf with drought tolerant landscaping.
- Expediting the rehabilitation of nine existing groundwater wells on an emergency basis to reduce surface water usage, and entering into agreements with neighboring agencies to receive supplemental groundwater if needed due to drought-related shortages.

J. The only item in the Governor's proclamation of a continuing drought State of Emergency excerpted in Recital G, above, not already being addressed by the City is the call for residents and businesses to turn off fountains and other decorative water features unless recycled or grey water is used.

K. This Resolution adds a provision addressing the use of water fountains to the City's Stage 2 water conservation measures, and adds restrictions to the City's current outdoor water use requirements to improve the enforcement and effectiveness of these requirements while the water shortage continues.

BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:

Section 1. Based on the on-going drought conditions, the Sacramento City Council hereby declares that a water shortage continues to exist, and that each and every provision of Resolution No. 2014-0018 shall remain in full force and effect, as supplemented by the provisions of this Resolution.

Section 2. The water conservation measures and water use restrictions described below are adopted:

- A. The City Manager shall encourage City residents and businesses to turn off fountains and other decorative water features that do not use recycled water or grey water.

- B. No person shall knowingly or willingly cause or allow any city water used on residential property for non-irrigation purposes to flow away as water waste runoff (as defined in City Code section 13.04.840) from property owned or occupied by such person, except for water used to wash a vehicle in compliance with City Code section 13.04.870(B).

- Section 3. The water conservation measures and water use restrictions described in Section 2 of this Resolution are in addition to the provisions of Resolution No. 2014-0018 and the existing provisions of Article XI of Chapter 13.04 of the City Code (Outdoor Water Conservation); in the event of any conflict between any provision of Article XI and this Resolution or Resolution No. 2014-0018, the provisions of this Resolution and Resolution No. 2014-0018 shall govern while these Resolutions remain in effect.
- Section 4. The City Manager is authorized and empowered to delegate the City Manager's authority hereunder to such assistants, deputies, officers, employees, or agents of the City as the City Manager shall designate, and to establish such rules, regulations, and procedures, and to prepare or furnish such forms, as the City Manager deems necessary or appropriate to carry out the provisions of this Resolution.
- Section 5. No person shall use, or cause to be used, City water in violation of any of the provisions of this Resolution, or of Resolution No. 2014-0018, while the water shortage remains in effect, as specified in City Code § 13.04.870(G).
- Section 6. The penalties for violations specified in City Code § 13.04.890 shall continue to be doubled while the water shortage remains in effect, as specified in City Code § 13.04.890(D).
- Section 7. This Resolution shall be effective upon its adoption, and shall remain in effect until rescinded or otherwise modified by subsequent resolution of the City Council.
- Section 8. This Resolution shall be published within ten days after its adoption, pursuant to California Water Code § 376(a).

Adopted by the City of Sacramento City Council on June 17, 2014, by the following vote:

Ayes: Members Ashby, Cohn, Hansen, McCarty, Pannell, Schenirer, Warren, and Mayor Johnson.

Noes: None

Abstain: None

Absent: Member Fong.

Attest:

Shirley A. Concolino

Digitally signed by Shirley A. Concolino
DN: cn=Shirley A. Concolino, o=City of Sacramento, ou=City Clerk,
email=sconcolino@cityofsacramento.org, c=US
Date: 2014.06.23 11:42:59 -07'00'

Shirley Concolino, City Clerk



City of Sacramento

Mike Wasina
Electrician Supervisor
Department of Utilities
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GE
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Darren Evans

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For the attention of: **Mr. Wasina**
Subject: **Bently Nevada online condition monitoring on Intake Pumps**
Reference: Proposal No. 1049217 rev 0 (Budgetary Price Proposal)
Proposal Date: 1-April-2014

GE - Bently Nevada is pleased to submit this Budgetary Price Proposal to provide Bently Nevada Machinery Protection hardware and services for the motor driven intake pumps at the Sacramento and American Rivers. Currently these machines are currently not equipped with vibration monitoring. After a review by our application best practices on these machines, the recommended monitoring includes our 1900/65A monitoring & Protection system, (3) case mounted Velomitor sensors and associated cabling per unit. The sensors will be placed on each of the motor bearings (top & bottom) and one placed perpendicular to the pump discharge piping near the coupling area. A site walk down on the Sacramento facility recorded the following details for the (8) machines. This proposal will focus on budgetary numbers for the Sacramento facility only for now, but price per unit estimates can be carried to the American River facility.

- (6) - 300HP Motor Driven Pumps
- (2) - 150HP Motor Driven Pumps



The 1900/65A monitoring protection systems contain (4) vibration inputs, (4) temperature inputs (not used in this case), 4-20mA outputs, relay outputs, local display and TCP/IP Modbus interface to export the data to the plant PLC/DCS. The 1900/65A is software configurable and all alarm and danger parameters as well as Modbus communications can be configured. The Modbus Gateway allows the monitor to provide static variables, statuses, event list, time and date information directly to any Modbus client, including Distributed Control Systems (DCSs), Supervisory Control and Data Acquisition (SCADA) systems, Programmable Logic Controllers (PLCs). Additionally, the 1900/65A systems will be provided with a NEMA 4X enclosure to be mounted on the unistrut next to the machines



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By installing the Bently Nevada 1900/65A monitoring systems, the City of Sacramento will gain online continuous monitoring of these machines with data trended back and the PLC/DCS. This will allow the City of Sacramento to evaluate the operating conditions and the health of the equipment to make operating decisions. Recently with lower water levels, the machines have experienced cavitation, where the monitoring system can evaluate and determine the severity of the conditions. The scope of this proposal includes the necessary hardware (1900/65A, Velomitors and cables) along with services (Kick of meeting, electrical design drawings, configuration, loop checks, startup technical assistance, DCS integration and a project report).

Budgetary Priced Proposal

| Description | Price |
|--|--|
| <p>Base Project – 1900/65A monitoring systems: GE Energy-Bently Nevada will provide (8) 1900/65A monitoring & protection systems to monitor the intake pumps at the Sacramento River facility. Pricing includes (3) Velomitor sensors per unit and associated cabling. Services include, site kick off meeting, electrical design drawings, configuration, loop checks, Modbus communication (DCS support), startup/commissioning services and project report.</p> | <p>\$ 110,868.00 (Approx. \$13,858 per unit)</p> |

Note 1: The above price does not include taxes or duties.

Scope of Work:

ADDITIONAL ASSUMPTIONS & CLARIFICATIONS:

- All prices are budgetary, +/- 15%
- Purchased and installed in 2014
- Services estimate is based on using local services from the Sacramento, CA area. 6 weeks notice required to ensure local resources can be used, otherwise airfare will need to be priced into the proposal.
- Startup of the machines associated with the 8x 1900/65A systems is expected to occur over 2 days, as quoted.

BUYER RESPONSIBILITIES:

- Appoint a Project Manager as a single point of contact responsible for obligations associated with this project.
- City of Sacramento IT folks available to support integration of systems (Ethernet cable from 1900/65A rack to DCS)
- Installation and wiring of the 1900/65A systems is to be provided by City of Sacramento. Bently Nevada will provide electric drawings showing wiring connections. Connections required before Bently Nevada arriving onsite for testing.



- Provide advanced notification of safety training requirements.
- Supply GE with any site-specific policies and procedures.
- Coordination with plant operations for the implementation of scope of work.
- Plan internal resources as required to implement scope and schedule defined.
- Supply needed work permits prior to start of each workday.
- Buyer to provide a work area to consist of desk and phone access.
- Removal of covers to access transducers, if required.
- Buyer will provide all plant services such as light, heat, water, electric power and disposal of all waste materials.

TERMS AND CONDITIONS:

This proposal is subject to the terms and conditions listed below, and by reference are incorporated herein. To the extent there are conflicts or inconsistencies between this set of Terms and Conditions and the preceding information provided in this document, the preceding information shall prevail.

- GE Oil & Gas ES 104 Terms and Conditions (per below) noted below.

PAYMENT TERMS:

Our Firm Price Quotation is based upon the following invoicing schedule and terms:

- 1.1.1 All Pricing is in United States Dollars (US\$)**
- 1.1.2 All Payments are NET 30 Days from receipt of invoice**
- 1.1.3 Project Invoicing Schedule:**

| <i>Project Payment Milestone</i> | <i>Invoice Amount</i> |
|---|------------------------------|
| Contract Signing/Purchase Order Receipt | 25% |
| Shipment of Equipment (Hardware/Software) | 70% |
| Demobilization from the jobsite | 5% |

PURCHASE ORDER:

Buyer's Purchase order shall provide the following deliverables:

- Purchase Order conforming to this proposal.
- Purchase Order should be made out to **Bently Nevada, Inc.** at the address listed below.

Note: Deviations from the proposal in Scope, Price, payment schedule, Terms and Conditions, Shipment Cycle, or Installation Cycle may cause delays or non-acceptance of Purchase Order.

- The execution period of this contract starts from Sellers Order Acknowledgement date.



LEGAL ENTITY:

Upon the Buyer's decision to submit a purchase order, please address the Purchase order to the following Seller's Legal Entity:

- Upon the Buyer's decision to submit a purchase order, please address the Purchase order to:
Bently Nevada, Inc.
1631 Bently Parkway South
Minden, NV 89423
Attn: Darren Evans

NOTE: Please FAX Purchase Order to (360) 368-6067 or email PDF version to darren1.evans@ge.com.

GENERAL PRICING CONSIDERATIONS:

Pricing Basis and proposal validity

Prices herein are fixed price and valid for 60 days of the proposal date. Bently Nevada Inc. reserves the right to review the pricing assumptions and adjust the project pricing based upon an agreed upon project schedule.

Out of Scope Works

"Out of scope works" shall be defined as "Any additional work required, requested, or recommended not specifically defined in the scope of work proposed herein". Upon receipt of written request, Seller may provide a firm price quotation or perform the work at the rates provided herein. Additional works will not commence until additional pricing and/or changes to schedule have been agreed.

Delays

Delays in the performance of work beyond the reasonable control of Seller, or delays caused by acts of the Buyer or prerequisite work by others, shall entitle Seller to an adjustment of time and price for completion of its work and expenses resulting there from.

All information and pricing contained herein is confidential to GE Energy. Any distribution or use of this document for purposes other than its original intent is expressly forbidden without prior GE Energy written authorization.



We thank you for the opportunity to provide this fixed priced proposal for this project to help define project scope. Additional information on GE Energy and our products and services can be found on our website at www.ge-energy.com/oc. If you have any questions or concerns regarding this proposal, please do not hesitate to contact my cell phone at (775) 230-3983.

Yours sincerely,
For and On behalf of GE Energy – Measurement & Control Solutions



Darren Evans
Sales Manager
Bently Nevada Asset Condition Monitoring
M: (775) 230-3983

This document, all related and derivative information, whether written or oral is submitted in confidence for evaluation by the Buyer. As such, its contents are proprietary and confidential to Seller. In taking receipt of this document, Buyer agrees not to reveal its contents, to third parties or otherwise, except to those who must evaluate it. Upon written request of Seller, Buyer will return all copies of this document to Seller. The equipment listed in this document is based on preliminary information and is subject to change.

Sales Contact:

Darren Evans, Sales Manager
Bently Nevada, Inc.
1631 Bently Parkway South
Minden, NV 89423
Mobile Phone: (775) 230-3983
Office Phone: (360) 597-3138
Darren1.evans@ge.com



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Main Ditch Piping – El Dorado Irrigation District

List of References

- ◆ Draft Basis of Design Report, 2014, [page 42](#)
- ◆ Draft Basis of Design Report, Appendix F Opinion of Probable Construction Costs, [All pages](#)

DRAFT UPPER MAIN DITCH PIPING BASIS OF DESIGN REPORT

PREPARED FOR:



Prepared By:



DOMENICELLI & ASSOCIATES

CIVIL ENGINEERING

1101 Investment Blvd., Suite 115

El Dorado Hills, CA 95762

July 11, 2014

SECTION 6 - PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COST

The following Opinion of Probable Construction Cost (OPCC) developed for the 10% BODR is based on the use of PVC pipe. A complete topographic survey and geological investigations will be necessary including precise pipe length, backfill volumes, and number/size of trees impacted, during the design phase to refine these costs.

The total cost presented in the OPCC includes an allowance for design/engineering/surveying of 7 percent, Construction Administration/Overhead of 8 percent, general conditions, taxes, and miscellaneous items of 15 percent, a contractor overhead and profit of 12 percent, and a 25 percent contingency.

Right-of-way costs of approximately \$40,000 to \$150,000 per acre are estimated for easements through the residential portions of the alignment. Temporary construction easements are estimated to average \$5,000 per acre.

Total estimated construction cost for the preferred alignment of the 36" and 42" diameter pipeline and appurtenances is approximately \$4.5 million. Other related costs to the District for this project will add another \$1.5 million. A breakdown of the costs for each of the alignment alternatives can be found in Tables F1, F2, and F3 in Appendix F, and are summarized in Table 21 below.

Table 21. Summary of Preliminary Opinion of Probable Cost Estimate

| Alignment Number | Construction Costs ⁽¹⁾ | Other Costs ⁽²⁾ | Total Cost |
|------------------|-----------------------------------|----------------------------|-------------|
| 1 | \$4,517,600 | \$1,494,000 | \$6,012,000 |
| 2 | \$4,349,644 | \$1,646,500 | \$5,997,000 |
| 3 | \$5,037,800 | \$1,637,500 | \$6,676,000 |

(1) Construction Costs include costs associated with Main Ditch Piping, such as connections at Forebay and Reservoir 1 WTP, pipe material and appurtenances, tree removal, earthwork, contractor overhead and profit and construction contingency.

(2) Other costs include Temporary and Permanent Easement Acquisition; Title Search Service; Design, Engineering, and Surveying; Construction Administration and Overhead; General Conditions, Taxes, and Miscellaneous Items.

Appendix F

Opinion of Probable Construction Costs

El Dorado Irrigation District
Main Ditch Basis of Design Report
Engineer's 10% Opinion of Probable Costs
Table F1 Alignment #1 - Preferred Alignment
July 2014

| Element Description | Estimated Quantity | Units | Unit Price | Estimated Amount |
|---|--------------------|-------|------------|---------------------|
| Mobilization/Demolition | 1 | LS | \$ 62,890 | \$ 62,890 |
| Erosion Control & Sediment Plan Compliance (SWPPP) | 1 | LS | \$ 43,000 | \$ 43,000 |
| Project Safety, Trench Safety, and Traffic Control | 1 | LS | \$ 47,168 | \$ 47,168 |
| Mainline Construction | | | | |
| Connection to Valve House at Forebay Reservoir | 1 | LS | \$ 21,000 | \$ 21,000 |
| 36" PVC (DR51) | 8,400 | LF | \$ 90 | \$ 756,000 |
| 42" PVC (DR51) | 7,000 | LF | \$ 116 | \$ 812,000 |
| Air Vacuum Release Valve | 16 | EA | \$ 5,000 | \$ 80,000 |
| Blow-off Valves | 7 | EA | \$ 3,500 | \$ 24,500 |
| Trench Cut Off Wall | 16 | EA | \$ 750 | \$ 12,000 |
| Earthwork - Cut | 1,900 | CY | \$ 10 | \$ 19,000 |
| Earthwork - Fill | 36,000 | CY | \$ 20 | \$ 720,000 |
| Pipe Trench Class 2 AB Backfill | 9,700 | CY | \$ 45 | \$ 436,500 |
| Tree Removal | 1 | LS | \$ 67,500 | \$ 67,500 |
| Gunite Removal (Crush and placed in fill) | 1 | LS | \$ 2,000 | \$ 2,000 |
| Outlet Structure (Concrete Vault, 1 BFV, 1 BOV, screen) | 1 | LS | \$ 71,000 | \$ 71,000 |
| Raw Water Service (36" saddle, meter strainer, box, etc.) | 3 | EA | \$ 2,500 | \$ 7,500 |
| Site Restoration | 1 | LS | \$ 115,500 | \$ 115,500 |
| Contractor Overhead and Profit | 12% | LS | | \$ 396,000 |
| Construction Contingency | 25% | LS | | \$ 824,000 |
| <i>Construction Subtotal =</i> | | | | \$ 4,517,600 |
| Non-Construction Costs | | | | |
| Temporary Easement Acquisition | 3.8 | AC | \$ 5,000 | \$ 19,000 |
| Permenant Easement Acquisition | 0.5 | AC | \$ 40,000 | \$ 20,000 |
| Title Search Service | 1 | LS | \$ 100,000 | \$ 100,000 |
| Design/Engineering/Surveying | 7% | LS | | \$ 316,000 |
| Construction Administration/Overhead | 8% | LS | | \$ 361,000 |
| General Conditions, Taxes, Miscellaneous Items | 15% | LS | | \$ 678,000 |
| <i>Other Costs Subtotal =</i> | | | | \$ 1,494,000 |
| TOTAL COST = | | | | \$ 6,012,000 |

El Dorado Irrigation District
Main Ditch Basis of Design Report
Engineer's 10% Opinion of Probable Costs
Table F2 Alignment #2 - Cross Country Alignment
July 2014

| Element Description | Estimated Quantity | Units | Unit Price | Estimated Amount |
|---|--------------------|-------|------------|---------------------|
| Mobilization/Demolition | 1 | LS | \$ 60,225 | \$ 60,225 |
| Erosion Control & Sediment Plan Compliance (SWPPP) | 1 | LS | \$ 58,000 | \$ 58,000 |
| Project Safety, Trench Safety, and Traffic Control | 1 | LS | \$ 45,169 | \$ 45,169 |
| Mainline Construction | | | | |
| Connection to Valve House at Forebay Reservoir | 1 | LS | \$ 21,000 | \$ 21,000 |
| 36" PVC (DR51) | 5,900 | LF | \$ 90 | \$ 531,000 |
| 36" PVC (DR41) | 400 | LF | \$ 105 | \$ 42,000 |
| 42" PVC (DR51) | 7,000 | LF | \$ 116 | \$ 812,000 |
| Creek Crossing | 50 | LF | \$ 250 | \$ 12,500 |
| Air Vaccum Release Valve | 13 | EA | \$ 5,000 | \$ 65,000 |
| Blow-off Valves | 7 | EA | \$ 3,500 | \$ 24,500 |
| Trench Cut Off Wall | 13 | EA | \$ 750 | \$ 9,750 |
| Earthwork - Cut | 4,500 | CY | \$ 10 | \$ 45,000 |
| Earthwork - Fill | 37,500 | CY | \$ 20 | \$ 750,000 |
| Trench Class 2 AB Backfill | 8,700 | CY | \$ 45 | \$ 391,500 |
| Tree Removal | 1 | LS | \$ 97,500 | \$ 97,500 |
| Gunite Removal (Crush and placed in fill) | 1 | LS | \$ 2,000 | \$ 2,000 |
| Outlet Structure (Concrete Vault, 1 BFV, 1 BOV, screen) | 1 | LS | \$ 71,000 | \$ 71,000 |
| Raw Water Service (36" saddle, meter strainer, box, etc.) | 3 | EA | \$ 2,500 | \$ 7,500 |
| Site Restoration | 1 | LS | \$ 129,000 | \$ 129,000 |
| Contractor Overhead and Profit | 12% | LS | | \$ 381,000 |
| Construction Contingency | 25% | LS | | \$ 794,000 |
| <i>Construction Subtotal =</i> | | | | \$ 4,349,644 |
| Non-Construction Costs | | | | |
| Temporary Easement Acquisition | 3.5 | AC | \$ 5,000 | \$ 17,500 |
| Permenant Easement Acquisition | 1.5 | AC | \$ 150,000 | \$ 225,000 |
| Title Search Service | 1 | LS | \$ 100,000 | \$ 100,000 |
| Design/Engineering/Surveying | 7% | LS | | \$ 304,000 |
| Construction Administration/Overhead | 8% | LS | | \$ 348,000 |
| General Conditions, Taxes, Miscellaneous Items | 15% | LS | | \$ 652,000 |
| <i>Other Costs Subtotal =</i> | | | | \$ 1,646,500 |
| TOTAL COST = | | | | \$ 5,997,000 |

El Dorado Irrigation District
Main Ditch Basis of Design Report
Engineer's 10% Opinion of Probable Costs
Table F3 Alignment #3 - Blair Road Alignment
July 2014

| Element Description | Estimated Quantity | Units | Unit Price | Estimated Amount |
|---|--------------------|-------|------------|---------------------|
| Mobilization/Demolition | 1 | LS | \$ 69,899 | \$ 69,899 |
| Erosion Control & Sediment Plan Compliance (SWPPP) | 1 | LS | \$ 43,000 | \$ 43,000 |
| Project Safety, Trench Safety, and Traffic Control | 1 | LS | \$ 69,899 | \$ 69,899 |
| Mainline Construction | | | | |
| Connection to Valve House at Forebay Reservoir | 1 | LS | \$ 21,000 | \$ 21,000 |
| 36" PVC (DR51) | 4,400 | LF | \$ 90 | \$ 396,000 |
| 36" PVC (DR41) | 1,500 | LF | \$ 105 | \$ 157,500 |
| 42" PVC (DR51) | 7,000 | LF | \$ 116 | \$ 812,000 |
| Air Vacuum Release Valve | 13 | EA | \$ 5,000 | \$ 65,000 |
| Blow-off Valves | 6 | EA | \$ 3,500 | \$ 21,000 |
| Trench Cut Off Wall | 13 | EA | \$ 750 | \$ 9,750 |
| Earthwork - Cut | 11,300 | CY | \$ 10 | \$ 113,000 |
| Earthwork - Fill | 34,900 | CY | \$ 20 | \$ 698,000 |
| Trench Class 2 AB Backfill | 10,900 | CY | \$ 45 | \$ 490,500 |
| Tree Removal | 1 | LS | \$ 67,500 | \$ 67,500 |
| Gunite Removal (Crush and placed in fill) | 1 | LS | \$ 2,000 | \$ 2,000 |
| Outlet Structure (Concrete Vault, 1 BFV, 1 BOV, screen) | 1 | LS | \$ 71,000 | \$ 71,000 |
| Raw Water Service (36" saddle, meter strainer, box, etc.) | 3 | EA | \$ 2,500 | \$ 7,500 |
| Site Restoration | 1 | LS | \$ 122,300 | \$ 122,300 |
| Type II Slurry Seal (12' 1/2 Road Width) | 81,600 | SF | \$ 1.50 | \$ 122,400 |
| 3"AC/8"Class 2 AB Replacement | 49,000 | SF | \$ 6.50 | \$ 318,500 |
| Contractor Overhead and Profit | 12% | LS | | \$ 441,000 |
| Construction Contingency | 25% | LS | | \$ 919,000 |
| <i>Construction Subtotal =</i> | | | | \$ 5,037,800 |
| Non-Construction Costs | | | | |
| Temporary Easement Acquisition | 2.7 | AC | \$ 5,000 | \$ 13,500 |
| Permenant Easement Acquisition | 0.3 | AC | \$ 40,000 | \$ 12,000 |
| Title Search Service | 1 | LS | \$ 100,000 | \$ 100,000 |
| Design/Engineering/Surveying | 7% | LS | | \$ 353,000 |
| Construction Administration/Overhead | 8% | LS | | \$ 403,000 |
| General Conditions, Taxes, Miscellaneous Items | 15% | LS | | \$ 756,000 |
| <i>Other Costs Subtotal =</i> | | | | \$ 1,637,500 |
| TOTAL COST = | | | | \$ 6,676,000 |

American River Pump Station Improvements – Placer County Water Agency

List of References

- ◆ 90% Cost Estimate, [All pages](#)

Project: American River Pump Station Improvements
 Client: Placer County Water Agency
 W.O.No.: 408-00-14-20

The purpose of this spreadsheet is to present the construction costs of the pump station improvements

| | | Bid Level | | | | | |
|-----------------|---|------------------|-------------|------------------|--------------------|-------------|----------------|
| | | Quantity | Unit | Unit Cost | Instaln Adj | Cost | |
| Div 1 | GENERAL | | | | | | |
| | Mobilization/Demobilization | 8 | PCT | \$ 1,293,000 | 1.00 | \$ | 103,440 |
| Subtotal | Division 1 General | | | | | \$ | 103,440 |
| Div 2 | SITWORK | | | | | | |
| | Demolition of existing pavement | 3,754 | SF | \$ 1 | 1.00 | \$ | 3,754 |
| | Grading of area towards storm drain | 2,699 | SF | \$ 1 | 1.00 | \$ | 2,699 |
| | Common Excavation | 8 | CY | \$ 15 | 1.00 | \$ | 124 |
| | Rock Excavation | 8 | CY | \$ 200 | 1.00 | \$ | 1,659 |
| | Dewatering during Construction | 1 | LS | \$ 5,000 | 1.00 | \$ | 5,000 |
| | AC Paving (3" thick) with AB (8" thick) | 2,699 | SF | \$ 8 | 1.00 | \$ | 21,592 |
| | Relocation of Storage Container | 1 | LS | \$ 1,000 | 1.00 | \$ | 1,000 |
| | Bollards around Power Pole | 4 | EA | \$ 500 | 1.00 | \$ | 2,000 |
| | Fish Screen Rotation | 1 | LS | \$ 34,323 | 1.00 | \$ | 34,323 |
| | HVAC Cooling Water Supply, 4" | 75 | LF | \$ 100 | 1.00 | \$ | 7,500 |
| | HVAC Cooling Water Return, 6" | 75 | LF | \$ 150 | 1.00 | \$ | 11,250 |
| Subtotal | Division 2 Sitework | | | | | \$ | 90,902 |
| Div 3 | CONCRETE | | | | | | |
| | Cast-In-Place Concrete (pipe supports) | 0.5 | CY | \$ 1,200 | 1.00 | \$ | 556 |
| | Cast-In-Place Concrete (building) | 30 | CY | \$ 1,200 | 1.00 | \$ | 36,267 |
| | Housekeeping Pad around VFD | 1 | CY | \$ 1,200 | 1.00 | \$ | 1,333 |
| Subtotal | Division 3 Concrete | | | | | \$ | 38,156 |
| Div 4 | Masonry | | | | | | |
| | Concrete Masonry Units | 1720 | SF | \$ 15 | 1.00 | \$ | 25,800 |
| Subtotal | Division 4 - Masonry | | | | | \$ | 25,800 |
| Div 5 | Metals | | | | | | |
| | Ridge Beam (W12x30) | 720 | LB | \$ 10 | 1.00 | \$ | 7,200 |
| | Roof Purlins (W8x10) | 960 | LB | \$ 10 | 1.00 | \$ | 9,600 |
| | Pipe Supports | 500 | LB | \$ 10 | 1.00 | \$ | 5,000 |
| Subtotal | Division 5 Metals | | | | | \$ | 21,800 |

| | | | | | | | | |
|-----------------|---|-----|----|----|--------|------|-----------|----------------|
| Div 6 | Wood and plastics - Not Used | | | | | | | |
| Subtotal | Division 6 Wood and Plastics | | | | | | \$ | - |
| Div 7 | Thermal and Moisture Protection | | | | | | | |
| | Metal Roof Panels | 816 | SF | \$ | 100 | 1.00 | \$ | 81,600 |
| Subtotal | Division 7 Thermal and Moisture Protection | | | | | | \$ | 81,600 |
| Div 8 | Doors and Windows | | | | | | | |
| | 3'x7'-2" Steel Door | 2 | EA | \$ | 750 | 1.50 | \$ | 2,250 |
| | 6'-8" x 12' Coiled roll up door | 1 | EA | \$ | 7,500 | 1.50 | \$ | 11,250 |
| | 2'-6" x 2'-6" window | 4 | EA | \$ | 500 | 1.50 | \$ | 3,000 |
| | 2'-6" x 6'-8" window | 2 | EA | \$ | 1,000 | 1.50 | \$ | 3,000 |
| Subtotal | Division 8 Doors and Windows | | | | | | \$ | 19,500 |
| Div 9 | Finishes - | | | | | | | |
| | Painting and High Performance Coatings | 1 | LS | \$ | 5,000 | 1.00 | \$ | 5,000 |
| Subtotal | Division 9 - Finishes | | | | | | \$ | 5,000 |
| Div 10 | Specialties - Not Used | | | | | | | |
| Subtotal | Division 10 Specialties | | | | | | \$ | - |
| Div 11 | Equipment | | | | | | | |
| | Pump Installation | 1 | LS | \$ | 39,690 | 1.00 | \$ | 39,690 |
| | Spreading Beam and 2- 5-foot Slings | 1 | LS | \$ | 2,832 | 1.00 | \$ | 2,832 |
| | Amiad Filters | 2 | ea | \$ | 21,000 | 1.68 | \$ | 70,560 |
| Subtotal | Division 11 Equipment | | | | | | \$ | 113,082 |

| | | | | | | |
|-----------------|--|------|----|----------|-----------|----------------|
| Div 12 | Furnishings - Not used | | | | | |
| Subtotal | Division 12 Furnishings | | | | \$ | - |
| Div 13 | Special Construction - Not Used | | | | | |
| Subtotal | Division 13 Special Construction | | | | \$ | - |
| Div 14 | Conveying Systems - Not used | | | | | |
| Subtotal | Division 14 Conveying Systems | | | | \$ | - |
| Div 15 | Mechanical | | | | | |
| | 1 1/2" galvanized steel pipe | 1256 | LF | \$12 | 1.50 | \$ 22,420 |
| | 2" galvanized steel pipe | 21 | LF | \$15 | 1.50 | \$ 482 |
| | 4" PVC pipe | 10 | LF | \$5 | 1.50 | \$ 77 |
| | 30" steel pipe | 4 | LF | \$720 | 1.50 | \$ 4,320 |
| | Pressure gage assembly | 2 | EA | \$07 | 1.50 | \$ 1,522 |
| | 1 1/2" ball valve | 9 | EA | \$28 | 1.50 | \$ 374 |
| | 1 1/2" check valve | 7 | EA | \$50 | 1.50 | \$ 525 |
| | 1 1/2" union | 7 | EA | \$62 | 1.50 | \$ 655 |
| | 1 1/2" 90-deg bend | 8 | EA | \$35 | 1.50 | \$ 420 |
| | 1" ball valve | 8 | EA | \$24 | 1.50 | \$ 288 |
| | 1 1/2" x 1 1/2" x 1" Tee | 8 | EA | \$15 | 1.50 | \$ 186 |
| | 1" pressure reducing valve | 1 | EA | \$1,000 | 1.50 | \$ 1,500 |
| | 1" solenoid valve | 1 | EA | \$577 | 1.50 | \$ 866 |
| | 2" pressure reducing valve | 1 | EA | \$1,277 | 1.50 | \$ 1,916 |
| | 2" tee with 1/2" bushing | 1 | EA | \$57 | 1.50 | \$ 86 |
| | 2" union | 1 | EA | \$84 | 1.50 | \$ 125 |
| | 2" 90-deg bend | 3 | EA | \$43 | 1.50 | \$ 192 |
| | 4" check valve | 1 | EA | \$582 | 1.50 | \$ 873 |
| | 4" True Union ball valve | 1 | EA | \$150 | 1.50 | \$ 225 |
| | 6" air vacuum valve | 1 | EA | \$9,000 | 1.50 | \$ 13,500 |
| | 6" plug valve | 1 | EA | \$942 | 1.50 | \$ 1,413 |
| | 30" dismantling joint | 1 | EA | \$6,481 | 1.50 | \$ 9,722 |
| | 30" tilting disc check valve | 1 | EA | \$63,000 | 1.50 | \$ 94,500 |
| | 30" butterfly valve | 1 | EA | \$22,550 | 1.50 | \$ 33,825 |
| | 30" double bellow expansion coupling | 1 | EA | \$5,000 | 1.50 | \$ 7,500 |
| | Water Cooled Air Handling Unit | 1 | LS | \$25,000 | 1.00 | \$ 25,000 |
| | Existing piping modifciation for cooling water | 1 | LS | \$10,000 | 1.00 | \$ 10,000 |
| Subtotal | Division 15 - Mechanical | | | | \$ | 232,511 |

| | | | | | | | |
|-----------------|---------------------------------|---|----|----|---------|------|---------------------|
| Div 16 | Electrical | | | | | | |
| | MCC | 1 | LS | \$ | 78,690 | 1.00 | \$ 78,690 |
| | Control Panel | 1 | LS | \$ | 1,541 | 1.00 | \$ 1,541 |
| | VFD | 1 | LS | \$ | 423,759 | 1.00 | \$ 423,759 |
| | PS Conduits & Wires | 1 | LS | \$ | 61,638 | 1.00 | \$ 61,638 |
| | PS Panelboard Modifications | 1 | LS | \$ | 925 | 1.00 | \$ 925 |
| | PS Miscellaneous Material | 1 | LS | \$ | 12,328 | 1.00 | \$ 12,328 |
| | VFD Bldg Lighting & Receptacles | 1 | LS | \$ | 3,637 | 1.00 | \$ 3,637 |
| | VFD Bldg Conduits and Wires | 1 | LS | \$ | 30,819 | 1.00 | \$ 30,819 |
| | VFD Bldg Grounding System | 1 | LS | \$ | 5,393 | 1.00 | \$ 5,393 |
| | VFD Miscellaneous Material | 1 | LS | \$ | 6,164 | 1.00 | \$ 6,164 |
| | Site Conduits and Wires | 1 | LS | \$ | 30,819 | 1.00 | \$ 30,819 |
| | Site Trenching | 1 | LS | \$ | 2,311 | 1.00 | \$ 2,311 |
| | Site Miscellaneous Material | 1 | LS | \$ | 6,164 | 1.00 | \$ 6,164 |
| | Pressure Instruments | 1 | LS | \$ | 462 | 1.00 | \$ 462 |
| | Flow Instruments | 1 | LS | \$ | 385 | 1.00 | \$ 385 |
| Subtotal | Division 16 - Electrical | | | | | | \$ 665,033 |
| Subtotal | Subtotal | | | | | | \$ 1,397,000 |

| | | | | | | |
|--|---------------|----------------|---------------|----------------------|-----------------|-----------------------|
| Contractor Overhead and Profit | 15 | PCT | \$ | 1,397,000 | 1.00 | 209,550.00 |
| Estimating Contingency | 15 | PCT | \$ | 1,397,000 | 1.00 | 209,550.00 |

| | | | | |
|---|-------|------|----|-------------|
| Estimated Construction Project Cost, June 2014 (rounded) 20 Cities Ave | ENR = | 9800 | \$ | + 1,816,100 |
|---|-------|------|----|-------------|

| | | | | |
|-------------------------------|--|--|----|---------|
| Construction Contingency, 10% | | | \$ | 181,610 |
|-------------------------------|--|--|----|---------|

*\$1,606,550
w/o
conting*

Enterprise Intertie – Sacramento Suburban Water District

List of References

- ◆ Arbors PRV Station Bid Results, 2012, [page 1](#)

Sacramento Suburban Water District - Arbors PRV Station

Results from Bid Opening - 8/13/12 @ 2:00pm

| Item # | Description | Qty | Units | Engineer's Estimate | | GM Construction | | Performance Piping | | Dolver Company | | Wunschel & Sons Inc | | Rawles Engineering | | Flowline Contractors | |
|-------------------|---|-----|-------|---------------------|--------------------|-----------------|--------------------|--------------------|--------------------|----------------|--------------------|---------------------|---------------------|--------------------|---------------------|------------------------|--------|
| | | | | Unit Cost | Amount | Unit Cost | Amount | Unit Cost | Amount | Unit Cost | Amount | Unit Cost | Amount | Unit Cost | Amount | Unit Cost | Amount |
| 1 | Mobilization/Demoblization | 1 | LS | \$9,000.00 | \$9,000.00 | \$2,500.00 | \$2,500.00 | \$2,460.00 | \$2,460.00 | \$3,800.00 | \$3,800.00 | \$6,854.40 | \$6,854.40 | \$8,000.00 | \$8,000.00 | | |
| 2 | Pothole Existing Facilities | 1 | LS | \$1,650.00 | \$1,650.00 | \$200.00 | \$200.00 | \$290.00 | \$290.00 | \$1,500.00 | \$1,500.00 | \$1,068.48 | \$1,068.48 | \$2,500.00 | \$2,500.00 | | |
| 3 | Preservation and Cleanup | 1 | LS | \$1,650.00 | \$1,650.00 | \$200.00 | \$200.00 | \$280.00 | \$280.00 | \$100.00 | \$100.00 | \$1,424.64 | \$1,424.64 | \$3,000.00 | \$3,000.00 | | |
| 4 | Construction Photos | 1 | LS | \$650.00 | \$650.00 | \$50.00 | \$50.00 | \$130.00 | \$130.00 | \$100.00 | \$100.00 | \$250.00 | \$250.00 | \$1,000.00 | \$1,000.00 | | |
| 5 | Project Record and Submittals | 1 | LS | \$650.00 | \$650.00 | \$50.00 | \$50.00 | \$145.00 | \$145.00 | \$100.00 | \$100.00 | \$200.00 | \$200.00 | \$1,000.00 | \$1,000.00 | | |
| 6 | Demolition/disposal of existing 16-inch water line and appurtenances. | 1 | LS | \$6,000.00 | \$6,000.00 | \$2,500.00 | \$2,500.00 | \$411.00 | \$411.00 | \$10,855.00 | \$10,855.00 | \$750.00 | \$750.00 | \$9,500.00 | \$9,500.00 | | |
| 7 | Pre-cast concrete vault including steel adjustable torsion spring assisted cover and sub-grade preparation. | 1 | LS | \$18,000.00 | \$18,000.00 | \$16,500.00 | \$16,500.00 | \$16,830.00 | \$16,830.00 | \$15,000.00 | \$15,000.00 | \$21,109.76 | \$21,109.76 | \$19,800.00 | \$19,800.00 | | |
| 8 | 16-inch pipeline, bypass and pressure reducing valve assembly including compacted backfill. | 1 | LS | \$30,000.00 | \$30,000.00 | \$20,420.00 | \$20,420.00 | \$24,685.00 | \$24,685.00 | \$26,500.00 | \$26,500.00 | \$46,729.76 | \$46,729.76 | \$49,500.00 | \$49,500.00 | | |
| 9 | Miscellaneous Concrete Work | 1 | LS | \$6,000.00 | \$6,000.00 | \$3,100.00 | \$3,100.00 | \$2,214.00 | \$2,214.00 | \$500.00 | \$500.00 | \$3,747.00 | \$3,747.00 | \$8,900.00 | \$8,900.00 | | |
| 10 | Sub-grade preparation and Paving | 1 | LS | \$4,000.00 | \$4,000.00 | \$1,200.00 | \$1,200.00 | \$4,316.00 | \$4,316.00 | \$5,600.00 | \$5,600.00 | \$4,551.68 | \$4,551.68 | \$9,800.00 | \$9,800.00 | | |
| 11 | Basic Electrical Materials & Methods | 1 | LS | \$3,000.00 | \$3,000.00 | \$1,800.00 | \$1,800.00 | \$3,491.00 | \$3,491.00 | \$3,900.00 | \$3,900.00 | \$18,094.28 | \$18,094.28 | \$2,950.00 | \$2,950.00 | | |
| *12 | RTU Installation | ± | LS | | | | | | | | | | | | | | |
| *13 | Security Enclosure Installation | ± | LS | | | | | | | | | | | | | | |
| 14 | Pressure Testing / Disinfection | 1 | LS | \$2,000.00 | \$2,000.00 | \$250.00 | \$250.00 | \$620.00 | \$620.00 | \$1,700.00 | \$1,700.00 | \$1,000.00 | \$1,000.00 | \$2,900.00 | \$2,900.00 | | |
| Total Cost | | | | | \$82,600.00 | | \$48,770.00 | | \$55,872.00 | | \$69,655.00 | | \$105,780.00 | | \$118,850.00 | No Bid Received | |

Barton Road Intertie – San Juan Water District

List of References

- ◆ 2014 Wholesale Drought Response Planning – Response Improvement Projects and Operational Narratives, [page 5](#)



March 25, 2014

To: Eric Lamoureux
Cal Office of Emergency Services
3650 Schriever Ave.
Mather, CA 95655

From: Tony Barela, P.E.
Operations Manager
San Juan Water District
9935 Auburn Folsom Road
Granite Bay, CA 95746

Subject: 2014 Wholesale Drought Response Planning – Response Improvement Projects and Operational Narratives

Directors
Edward J. "Ted" Costa
Kenneth H. Miller
Dave Peterson
Pamela Tobin
Bob Walters
General Manager
Shauna Lorange

INTRODUCTION

Under normal operations, San Juan Water District (SJWD or District) receives its water supply from Folsom Lake through U.S. Bureau of Reclamation's (USBR) facilities at Folsom Dam. In response to declining Folsom Lake levels and the potential for no supply, or greatly reduced supplies from USBR facilities this summer, District has reviewed multiple scenarios for providing a minimum service level of water supply to the District's wholesale (SJWD-W) customers. SJWD-W customers include Citrus Heights Water District (CHWD), Fair Oaks Water District (FOWD), Orange Vale Water Company (OVWC), City of Folsom (Ashland Area) and the SJWD Retail (SJWD-R) service area (See Figure 1).

All SJWD-W customers, except for the northern portion of SJWD-R and a small section of CHWD, are located in Sacramento County. SJWD-R population includes 10,260 in Sacramento County and 20,613 in Placer County; CHWD has approximately 1,090 in Placer County. The total population served by all agencies is approximately 138,400.

Figure 2 is a projection by USBR showing the Folsom Lake level declining to 127,000 AF by end of September and then rising in October through January. This is a 90% exceedance projection based on minimum downstream releases to meet regulatory requirements. Considering USBR is unable to deliver water supply through the existing intake at a storage of approximately 95,000 AF as illustrated on Figure 3, if there isn't significant rain in October through January, the District's intake may become unusable sometime in that timeframe. For this reason, the District is moving forward with the design and construction of the proposed drought response project in preparation of this occurrence.

Table 3 – Emergency Water Supply Improvement Projects

| Project Name | Description | Project Benefit | Cost Estimate | Schedule |
|--|--|---|----------------------|--|
| SSWD-SJWD Groundwater Supply Pump Station | Pumps, interconnecting piping, valves, VFD controls, and related work to pump groundwater from SSWD’s Antelope PRV Station to SJWD’s Hinkle Reservoir at SJWD WTP. | Provides 14.4 MGD groundwater supply to SJWD to replace reduced surface water deliveries from Folsom Reservoir and maintain health and safety water supply to SJWD wholesale service area (includes SJWD –R). | \$2,600,000 | Design underway. Could be ready for construction in September 2014. |
| PCWA-SJWD Barton Road Intertie | 1,500 lf of 12-inch diameter pipeline, pressure control valve, metering facility, and associated work constructed within Barton Road. Connects existing 12-inch PCWA piping to existing 8-inch SJWD distribution system piping. | Provides immediate supply of 1 MGD from PCWA to SJWD’s Granite Bay service area to help support delivery of health and safety water supply. If Folsom Lake level declines below M&I intake, Granite Bay has no other access to water. Provides an emergency two-way agency intertie for future events. | \$620,000 | Design underway. Could be ready for construction in May 2014. |
| PCWA-SJWD Barton Road Intertie Extension | Extends intertie noted above an additional 1,500 lf to tie into existing 12-inch diameter SJWD distribution grid. | Increases intertie capacity to 2 MGD. | \$400,000 | Design underway. Could be ready for construction in May 2014. |
| SJWD Wholesale Interties and Control Facilities | Improvements to 4 existing interties between CHWD, FOWD, OVWC, and SJWD-R (the wholesale agencies) to allow distribution of available surface water supply and additional groundwater supplies from wells and interties throughout the SJWD wholesale service area. Improvements include pressure reducing/pressure sustaining valves, check valves to control flow direction, and related improvements. | Because of elevation and system pressures differences between the wholesale agencies, and between the neighboring agencies of PCWA and SSWD, these improvements are necessary to move surplus supplies from where they are available to where they are needed. Also ensures water deliveries can be maintained under fire flow or emergency conditions in any given area. | \$670,000 | Can be constructed to coincide with SSWD-SJWD GW Supply Pump Station |
| PCWA-SJWD Kokila Reservoir Intertie | Approximately 900 lf of temporary above ground 12-inch diameter piping including valves, meter, and associated work to connect PCWA piping to existing SJWD Kokila Reservoir. | Provides immediate supply of 1 MGD from PCWA to SJWD’s Bacon Pressure Zone to help support delivery of health and safety water supply. If Folsom Lake level declines below M&I intake, Bacon Zone has no other access to water. | \$164,000 | Design underway. Could be ready for construction in May 2014. |