



November 3, 2009  
Project No. 06-0025

Monterey Peninsula Water Management District  
Post Office Box 85  
Monterey, California 93942

Attention: Mr. Joe Oliver, Water Resources Manager

Subject: Proposal for Contract Amendment for Professional Hydrogeologic and Engineering Services Assistance; Phase 1 and 2 ASR Projects, Fiscal Year 2009-2010

Dear Joe:

In accordance with your request, Pueblo Water Resources, Inc. (PWR) is pleased to present this proposal for hydrogeologic and engineering services assistance for the District's Aquifer Storage and Recovery (ASR) Project. Presented in this proposal is a detailed scope of work, schedule, and estimated costs to assist the District with various ASR-related tasks during the remaining period of Fiscal Year 2009-2010 (FY 2009-10).

### **BACKGROUND**

The water supply for the Monterey Peninsula is derived from the Carmel River and Seaside Groundwater Basin (SGB) systems. These two sources of supply have been constrained by recent regulatory decrees resulting from environmental considerations. ASR has been pursued by the District since 1996 as means to augment water supplies on the Peninsula. The overall objective of the ASR project is to further enhance the conjunctive use of water supplies in the Carmel River and SGB systems, to the benefit of both systems.

ASR on the Monterey Peninsula involves the diversion of excess flows from the Carmel River System for recharge, storage and subsequent recovery in the SGB. The excess water is captured by California American Water Company (CAW) wells in the Carmel Valley during periods when flows in the Carmel River exceed fisheries bypass flow requirements, treated to potable drinking water standards, and then conveyed through CAW's distribution system to Seaside. Recharge is accomplished via injection of the excess flows into specially designed ASR wells in the SGB. The injected water is stored in the SGB aquifer system until dry/high demand periods when it is recovered by the ASR wells and/or CAW production wells in the SGB. ASR benefits the resources of both systems by raising water levels in the SGB during the recharge and storage periods and reducing extractions from the Carmel River System during dry periods



The Phase 1 ASR Project consists of expanding the successful Santa Margarita Test Injection Well (SMTIW) project to include the addition of a second well and associated facilities in an expanded site area contiguous to the existing SMTIW site. As designed, the Phase 1 ASR Project will be capable of diverting and storing (on average) approximately 920 acre-feet per year (AFY).

As you are aware, a number of planning and logistical complications have delayed the construction of these facilities, however, construction can commence quickly once budgetary and operational coordination issues with California American Water (CAW) are resolved. The remaining Phase 1 ASR Project site facilities as well as the initial well and site improvements at the Phase 2 Fitch School site are anticipated to be completed in 2010 in order to be ready for full scale injection operations at both ASR wells during the Water Year 2011 recharge season.

### **PURPOSE AND SCOPE**

The intent of this proposal to provide hydrogeologic and engineering services related to the following aspects of the District's ASR program during FY 2009-10:

1. Water Year 2010 (WY2010) Phase 1 ASR operations;
2. Development of Phase 2 Basis of Design memoranda based on the successful Fitch School monitoring well installation in October 2009;
3. Project permitting support for the Phase 2 Fitch School site;
4. Design and bid document preparation for the Phase 2 ASR wells;
5. Design and bid document preparation for the Phase 2 ASR site facilities (including civil, mechanical, and electrical equipment);
6. Completion of the remaining Phase 1 ASR site facilities; and,
7. Continued coordination with CAW for Phase 1 and Phase 2 facilities and operations.

We understand that the District anticipates that it will be able to obtain water for recharge operations from the CAW system during WY2010, beginning as soon as excess Carmel River system water is available, as per State Water Resources Control Board (SWRCB) permit allowance. Based on our understanding of the District's needs, and our experience with this and similar ASR projects, we have prepared the following scope of services to assist the District with these aspects of the ASR project during the remainder of FY 2009-10.

### **Scope of Services**

#### **Task 1 – Water Year 2010 Operations Support**

Task 1.1 – Project Management and Meetings This task includes the development of the WY2010 ASR operations program, attendance at various



meetings during the course of the project, and overall project management assistance.

It is our understanding that the District intends to work with CAW staff to transition all aspects of ASR operations (including winter injection operations) to CAW operators during this upcoming season. Accordingly, PWR will review existing conditions at the site and meet with District and CAW staff at a kick-off meeting to discuss WY2010 program goals and scheduling. In addition, it is anticipated that on-going "ASR Coordination" meetings between the District and CAW will continue during the FY 2009-10 period. Consistent with past practice, it is assumed that meetings will be held on an approximate monthly basis and will be attended by a PWR Principal Engineer and/or Hydrogeologist, depending on meeting agenda and project needs at the time. To the extent feasible, PWR attendance at meetings will be coordinated with other project tasks. For budgetary purposes, it is assumed that PWR participation in about 30 percent of these meetings will be via conference call.

Task 1.2 - ASR Program Implementation and Field Assistance This task includes providing as-needed assistance to District and CAW staff with on-going ASR operations, data collection, and water sampling during the WY2010 program. It is noted that our scope and budget for this task has been reduced relative to previous injection seasons for the project, reflecting the intent to transition ASR operations to District and CAW personnel.

This will include assistance with the startup of WY2010 ASR operational phases and periodic downloading and maintenance of project dataloggers. This task also includes the provision of field assistance on an as-needed/requested basis to address critical project needs as they arise. For budgetary purposes, we have assumed this task will involve one initial two-day field visit and two periodic follow-up visits during the injection season by a Senior and/or Project Hydrogeologist.

Task 1.3 - Water Quality Program This task consists of implementation of the on-going water quality data collection program at the Phase 1 ASR Project site, which now includes monitoring at the new ASR-2 and MW-1 wells, as well as the existing ASR-1 (SMTIW No. 1) well. The WY2009 Sampling and Analysis Plan (SAP) will be revised for WY2010 to reflect experience gained during WY2009 in various sampling protocols, as well as the inclusion of the new 'off-site' monitoring well at Fitch School, and additional sampling / analysis requests made by the Regional Water Quality Control Board (RWQCB).

Specific water quality testing and analyses to be performed by District and/or CAW staff as part of the WY2010 water quality program include the following:

- Weekly monitoring and tracking of field water quality parameters during recharge, and monthly monitoring during recovery phases;



- Bi-Weekly sampling during the recharge and recovery phases for analysis of disinfection by-products (DBPs) and chloride ion to assess DBP formation/degradation and mixing of the injectate and native groundwater in the subsurface (recovery phase sampling may decrease if recharge phase volumes are small);
- Monthly sampling for analysis of the full suite of general mineral, general physical, organic carbon, and other constituents necessary for characterization and geochemical interaction assessment of injectate and stored/backflushed waters to supplement field water quality and DBP data.

It is our understanding that the District and/or CAW will be responsible for the field parameter monitoring, collection and delivery of samples to a State Certified Analytical Laboratory for grab sample analyses (e.g., Monterey Bay Analytical Services, located near the District's office in Ryan Ranch). Accordingly, PWR will assist with these efforts on an as-needed/requested basis.

Task 1.4 – ASR-2 Temporary Power This task consists of provision of a temporary power supply to support operation of the ASR-2 well motor during routine backflushing operations during this upcoming injection season. This is needed due to the fact that permanent electrical facilities are not yet available and will ultimately be located inside the Chemical/Electrical building, which has not yet been constructed. The temporary power supply is anticipated to be similar to that which was employed during the WY2009 injection season, consisting of a generator and temporary electrical control panel, to be operated manually. This equipment will be secured and onsite to be capable of conducting well backflushing operations by December 1, 2009.

## **Task 2 – Phase 2 ASR Project Planning/CEQA Support**

Task 2.1 - Assist with EIR Preparation PWR will provide technical engineering and hydrogeologic assistance to District staff in the preparation of an Environmental Impact Report (EIR) for the Phase 2 ASR project. We understand that District staff will be the 'lead' in preparing the EIR documents, with PWR providing technical support on the engineering and hydrogeologic aspects. We envision that PWR will provide technical assistance regarding the following elements of the EIR process:

- Assist with finalization of any changes needed to the Project Description being developed under PWR's current contact amendment for FY2008-09 assistance. The final Project Description will include: diversion facilities in the Carmel River System (e.g., wells and/or Carmel Valley Filter Plant); conveyance infrastructure (e.g., pipelines, pump stations, etc.) necessary to convey diverted flows from the Carmel Valley to ASR facilities in the Seaside Basin and recovery flows from the ASR wells into the CAW system, and; ASR well facilities in the



Seaside Basin necessary for the injection and recovery of the desired project yields.

- Support for Administrative Draft EIR, including review of Administrative Draft EIR and addressing District comments on engineering aspects and hydrologic impacts assessment.
- Support for Draft EIR, including: review of Draft EIR; provide responses to comments on Draft EIR, and; provide additional technical information, as needed.

Task 2.2 - Prepare Hydrologic Impacts Assessment PWR will prepare an analysis of hydrologic impacts (water level and quality) of combined Phase 1 and 2 ASR project operations in the Seaside Basin for the EIR. Based on our discussions, we understand the District envisions that the EIR for the Phase 2 ASR Project will tier off and/or be a supplemental to the certified EIR/EA for the Phase 1 ASR Project. As such, we envision that the technical approach (e.g., analytical groundwater modeling of water level impacts) taken to the hydrologic impacts assessment of the Phase 2 project will be similar to that taken for the Phase 1 project.

### **Task 3 – Phase 2 ASR Project Permitting Support**

Task 3.1 – Site Facilities Permitting As discussed above, the District desires to expedite the implementation of the Phase 2 Fitch School facilities in 2010. This task includes permitting support for these facilities including the acquisition of a City of Seaside Conditional Use Permit (CUP) and building permits for the Phase 2 ASR Project. PWR will assist the District in submitting an application to the City's Board of Architectural Review (BAR) for design approval of the site's perimeter fencing, landscaping, and buildings. It is our understanding that the BAR application will require the following:

1. Site Plan
2. Landscape and Irrigation Plan
3. Fencing Plan
4. Well Enclosure Plan
5. Elevations of an Electrical Building (if necessary).

In addition to the above, PWR will provide the required color and materials samples/presentation boards, as well as general assistance with the BAR application and permitting process.

Task 3.2 – RWQCB Permitting Assistance PWR has been assisting the District with RWQCB permitting assistance for the Phase 1 ASR Project. This task includes assisting the District in obtaining permits and/or cooperation with the



Central Coast Regional Water Quality Control Board (RWQCB) regarding the planned Phase 2 ASR Project. The District received authorization from RWQCB to continue ASR operations at the SMTIW site at least until the year 2013 under the provisions of Section 13267 of the California Water Code, which is a general waiver of discharges outlined in RWQCB Resolution R3-2008-0010. Acquisition of this general waiver was a milestone for the MPWMD's ASR project; however, at this time it only applies to ASR 1 & 2, and will need to be re-negotiated to include the anticipated Fitch School wells.

It is therefore anticipated that the District will need additional assistance from PWR in further dealing with the RWQCB on the Phase 2 ASR Project. This will likely include attendance at various meetings, preparation of technical memoranda, modifications to the SAP, etc., in support of these efforts. For budgetary purposes, we have included 120 and 80 hours of Principal and Senior Professional time, respectively, for this task.

#### **Task 4 - Phase 2 ASR Well Design and Bid Document Preparation**

Task 4.1 – Basis of Design Report PWR will prepare a brief and focused Basis-of-Design report. The purpose of the Basis-of-Design report is to confirm the planned design features of the Phase 2 ASR wells, based on the hydrostratigraphic data developed from the recent Fitch School Monitor Well drilling and anticipated hydrogeologic conditions at the Fitch School site. District staff and other interested parties (e.g., California-American Water Co.) will then have the opportunity to review and comment on the design. With concurrence of the District on the proposed well design, preparation of the technical specifications and bid documents would follow immediately. An opinion of constructed cost will also be completed prior to bidding.

Task 4.2 - Technical Specifications and Bid Documents. Following District review and consideration of the Basis-of-Design report, and selection of the final well design features, technical specifications for the drilling and construction of the two ASR wells will be prepared. The technical specifications are intended to provide adequate detail for bidding and well construction by competent, licensed (C-57) well drilling contractors. One of the key factors in the successful completion of ASR well construction projects is efficient, delay-free field operations; therefore, the contract documents will place special emphasis on timely initiation and completion of the work. The design and specifications documents will include the following minimum items:

- Minimum Contractor Qualifications
- Well Casing - diameter, material, depth, etc.
- Well Screen - perforation interval(s), screen type, slot aperture size, etc.
- Gravel Pack – gradation, uniformity coefficient, etc.



- Drilling Methods and Equipment
- Drilling Fluid Properties and Control
- Geophysical Logging, Velocity Logging, Water Quality Logging
- Fluid and Cuttings Containment and Disposal
- Noise Control
- Work Site Lighting Control
- Construction Debris Management
- Well Development
- Test Pumping
- Discharge Water Control
- Utility Water Supply (intertie for construction water)
- Well Disinfection and Testing
- NPDES Compliance and Limitations
- Site Restoration

As part of the Contractor's scope of work for well construction, the Specifications and Bid Documents will also include provisions for Contractor compliance with the Phase 2 ASR Project EIR/EA mitigations and the conditions included in the City of Seaside Conditional Use Permit for the project.

PWR will incorporate the well design and specifications for the well into a bid package using existing standard District format. The package will include the following:

- Invitation to Bid
- Bid Documents and Bidding Forms
- License and Bonding Requirements
- District Standard General Conditions
- Technical Specifications
- Special Conditions
- References and Contractor Qualification Forms

PWR will issue two draft copies of the completed contract documents for District review and comment. PWR will incorporate District comments and provide copies of the final contract package. It is assumed that the District will provide PWR with the District's "boiler plate", including general conditions and special insurance requirements, for incorporation into the final contract package. It is also assumed that the District will duplicate and distribute the bid packages and serve as the primary contact for response to questions from bidders.



Task 4.3 – Bidding Assistance. PWR will be available to assist the District throughout the bidding process. This will include responding to questions Contractors may have during the preparation of bids, preparing and distributing requisite addenda, and communicating to potential bidders other pertinent information.

Construction observation services are not included in this proposal, as construction is not envisioned until Summer 2010. These services are anticipated to be included in subsequent FY 2010-11 contract work.

### **Task 5 – Phase 2 ASR Engineering**

Task 5.1 – PG&E Upgrade Coordination This task includes engineering and PG&E coordination assistance to obtain PG&E service at the Fitch School site for the new ASR wells. The objective of this task is to have all parties ready to implement the PG&E upgrade no later than July 2010.

Task 5.2 – Engineering for Preliminary Site Facilities As mentioned previously, preliminary site grading (including a backflush pit) and installation of underground facilities for the Phase 2 ASR Project site facility will need to be completed by Fall 2010. The design of both underground and above ground facilities, including electrical switchgear, instrumentation, electrical building, and above ground piping will be developed to mimic the facilities at ASR-1 & 2, with the exception that no chemical dispensing facilities will be provided.

Specific task items in support of the scope of work for this task are as follows:

1. Topographic Base Survey of existing site conditions
2. Geotechnical soils investigation for foundations
3. Structural & Architectural design for electrical building
4. Civil / final grading-paving- drainage for site
5. Utilities engineering
6. Site electrical and instrumentation
7. Landscaping & Fencing design
8. Mechanical / Process piping
9. Specifications and Bid Document Preparation
10. Assist District with bidding and contract award process.

To expedite the work and complete the design engineering in an efficient and cost-effective manner, various sub consultants will be used to complete some of the above tasks.



During the development of project design, progress meetings will be held with District staff and various stakeholders to ensure project goals and community and regulatory standards are maintained. The City of Seaside, State Department of Public Health, and CAW will be regularly kept abreast of the project design and polled for preliminary approval and input as needed.

The plan set for construction drawings is envisioned to include approximately 35 sheets, in the following general areas:

- General information – 3 sheets
- Civil, grading, paving drainage – 3 sheets
- Structural / Architectural – 7 sheets
- Mechanical / piping - 5 sheets
- Electrical – 8 sheets
- Instrumentation – 4 sheets
- Landscape / Irrigation – 3 sheets
- Fencing – 2 sheets

Specifications will be prepared in CSI general format, and will be incorporated into the District's standard 'boilerplate' construction contract provisions.

Although facility design will be closely coordinated with CAW, the facility will be capable of operating as a "stand-alone" ASR plant, independent of potential future CAW and/or Coastal Water Project facilities. Where feasible, the facility will utilize CAW-compatible components, including piping, valving, controls, and instrumentation. Direct SCADA intertie to CAW operating systems is not included in our scope of work, however.

Construction observation services are not included in this proposal, as construction is not envisioned until Fall 2010. These services can be included in subsequent contract work if desired.

Task 5.3 – Engineering Coordination with CAW, CWP, and MCWD  
Implementation of Phase 2 ASR facilities at the Fitch School site will require extensive coordination with involved agencies to avoid duplication (or conflict) with utilities and system infrastructure currently being contemplated by CAW, Coastal Water Project (CWP) and Marina Coast Water District (MCWD), and FORA in the proximate area, particularly within the GJM Blvd corridor. It is anticipated that at least 6 meetings will be convened with the various agencies and stakeholders to evaluate and resolve issues related to concurrent projects coordination. For budgetary purposes, we have estimated 6 one-day meetings in Monterey and 24 hours of preparatory time for this task.



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## Services Not Included

Completion of the FY 2009-10 ASR program may require the services of other entities as well as additional costs or fees, which are not included in our scope of services. These items are assumed to be provided by District staff, contractors retained by the District, CAW, or others. Items that are not a part of our services include the following:

- Data-loggers and transducers for the Phase 1 ASR Project wells and other existing SGB monitoring wells (assumed District provided);
- PG&E application or processing fees for initiation of electrical service for the Fitch School site;
- Water quality sampling and analysis of any offsite wells (assumed CAW provided);
- Construction of Phase 1 site facilities;
- Permit fees;
- Cost of water, electricity, or other utilities;
- Any others items not specifically included in PWR's scope of services.

## SCHEDULE

Our proposed scope of services addresses the anticipated project needs during the remainder of FY 2009-10. The anticipated schedule for key project milestones is presented below:

- WY2010 ASR Operations - It is anticipated that the WY2010 recharge season will begin as early as December 2009 and extend through May 2010 (i.e., 6 months).
- Phase 2 ASR Preliminary Site Facilities Completion – Actual construction of the preliminary Phase 2 project site facilities is estimated to take three months; therefore, in order to complete the project by December 2010, the following schedule is anticipated:
  1. Preliminary Engineering, Design, and Permitting: Beginning in December 2009 and completed by March 2010.
  2. Preparation of Final Designs, Plans, Specifications and Bidding Documents: Completed by June 2010.
  3. Contractor Solicitation and Bidding Period: July / August 2010.
  4. Facilities Construction: September through November 2010.



**ESTIMATE OF COSTS**

Our estimated costs for services related to the FY 2009-10 ASR program were developed based on the proposed scope of work and our 2010 Fee Schedule (attached). Our services are provided on a time plus expense basis. The estimated labor costs for the major tasks, and the costs for the equipment, outside services, and other direct costs that will be required for completion of the project are fully itemized in the attached spreadsheet, with overall task budget subtotals summarized in the table below:

**Phase 1 ASR Project, FY 2009-10 Program  
 Estimated Costs**

<b>Task</b>	<b>Estimated Cost</b>
1 – WY2010 ASR Operations Support	\$40,695
2 – Phase 2 ASR Project Planning/CEQA Support	\$34,290
3 – Phase 2 ASR Project Permitting Support	\$69,480
4 – Phase 2 ASR Well Design and Bidding	\$18,840
5 – Phase 2 Preliminary Site Facilities Engineering and Bid Documents	\$84,915
Other Direct Costs	\$5,325
Outside Services	\$186,823
<b>Subtotal</b>	<b>\$440,368</b>
Project Contingency (10%)	\$44,037
<b>TOTAL ESTIMATED COST</b>	<b>\$484,405</b>

As shown in the above table, the estimated labor, other direct costs and outside services for FY 2009-10 totals \$440,037, not including project contingency. The total cost estimate for PWR’s services shown in the table above is \$484,405, which includes a ten percent contingency should unanticipated project needs arise. In accordance with previous District projects, we recommend that the project contingency be held for authorization by District staff upon written notice and justification by PWR.



We understand that in order to authorize this work, your Board must first approve a formal contract amendment. Based on our current workload, we believe that we can commence work within 14 days of your authorization.

We appreciate the opportunity to provide continued assistance to the District on this important project, and look forward to a timely and successful completion of the work. As always, please do not hesitate to contact us if you have any questions or require any additional information.

Sincerely,  
Pueblo Water Resources, Inc.

Robert C. Marks, P.G., C.Hg.  
Principal Hydrogeologist

Stephen P. Tanner, P.E.  
Principal Engineer

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Attachments: 2010 Fee Schedule  
Cost Estimation Spreadsheet



**PUEBLO WATER RESOURCES, INC  
2010 FEE SCHEDULE**

***Professional Services***

Principal Professional.....	\$165/hr
Senior Professional.....	\$150/hr
Project Professional.....	\$140/hr
Staff Professional.....	\$ 105/hr
Technician.....	\$ 95/hr
Drafting.....	\$ 80/hr
Word Processing.....	\$ 60/hr

***Other Direct Charges***

Subcontracted Services.....	Cost Plus 15%
Outside Reproduction.....	Cost Plus 15%
Per Diem.....	\$ 150/day
Vehicle.....	\$ 75/day