

**TO:** City Council  
**FROM:** Doug Monn, Public Works Director  
**SUBJECT:** Water Treatment Plant - Construction & Startup Engineering Services  
**DATE:** April 1, 2014

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**NEEDS:** For the City Council to consider amending an existing contract with AECOM to provide engineering services during construction and startup of the Nacimiento Water Treatment Plant.

**FACTS:**

1. City Council identified the design and construction of a 2.4 million-gallon-per-day (MGD) water treatment plant as the single highest priority for the water division.
2. Construction Plans and specifications were completed in December 2013.
3. In August 2013 the City pre-qualified ten (10) general contractors and three (3) control system integrators (subcontractors) for bidding to ensure the construction firms competing for the work have the experience, good performance, financial capacity, and safety record necessary to deliver a project of this size and complexity.
4. Construction bids were solicited from pre-qualified contractors. The City received a total of six (6) construction bids. Cushman Contracting Corp. submitted the low bid.
5. On February 18, 2014 City Council awarded a contract to Cushman Contracting for the Construction of the water treatment plant. The construction contract is currently being executed and a notice to proceed is expected to be issued by the end of the month.
6. WTP construction and startup will require AECOM's engineering services. The City requested AECOM to prepare a scope of work that includes:
  - ❖ Weekly progress meetings
  - ❖ Telephone conferences
  - ❖ Review contractor shop drawings, operation and maintenance manuals and technical submittals and provide comment as to their conformance with the plans and specifications.
  - ❖ Review and evaluation of Contractor's requests for information
  - ❖ Preparation of design changes
  - ❖ Construction site visits and special inspections

- ❖ Conformed construction record drawings
- ❖ AECOM Instrumentation and Controls Engineer witness factory acceptance testing of the process control and instrumentation system.
- ❖ Continuous Start-up support
- ❖ Plant operations and training
- ❖ Preparation of an operation and maintenance plan to be used by City staff during plant start-up and operations.
- ❖ Support the City in obtaining approvals from California Department of Public Health to operate the Water Treatment Plant

7. AECOM's scope of work is attached. The work will require approximately 2,100 man-hours throughout the 15-month (450 days) project duration.

#### **ANALYSIS &**

**CONCLUSION:** The American Society of Civil Engineers recommends one design entity provide services through all phases of a major public works project. A single design professional provides continuity, consistency and efficiency, enhances coordination, and establishes and maintains clearer lines of professional accountability to the project owner, which improves overall project quality.

AECOM's fee for the scope of work is \$432,646. This is 3.94% of estimated construction value, which is normal for a project of this magnitude. For comparative purposes, a very similar scope of work was awarded on the wastewater treatment plant construction project that was 4.4% of the overall construction value.

The Construction Manager and Design Engineer will have subtle but important differences in their roles during construction and startup of the WTP upgrade. The Construction Manager will be the City's on site representative in nearly all dealings with the Contractor, whereas the Design Engineer will serve a technical support role. The Construction Manager specializes in construction methods and will be primarily responsible for keeping the Contractor on schedule and within budget, whereas the Design Engineer specializes in treatment plant design and will be primarily responsible for providing the Contractor with technical information needed to build the project according to the plans and specifications.

For example, at the beginning of construction, the Contractor will be responsible for submitting shop drawings and other submittals for the various equipment and materials that will be incorporated into the project. The Construction Manager is responsible for receiving, logging, and tracking the status of all these submittals. The Design Engineer's responsibility is to review these submittals for conformance with the construction drawings and technical specifications. Although the Construction Manager has an engineering background, the Construction Manager is not the engineer-of-record and is not authorized to approve submittals or any deviations from the construction drawings or specifications.

**POLICY**

**REFERENCE:** Economic Strategy; Integrated Water Resource Plan, Urban Water Management Plan.

**FISCAL**

**IMPACT:** This construction contract is a planned Project cost that will be paid for from Water Fund cash reserves. The available Water fund Balance is \$6,370,090 and award of this contract will reduce this amount to \$ 5,894,180.

Contract Amount: \$432,646

10% Contingency: \$ 43,264

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Total Amount: \$ 475,910

**OPTIONS:**

- a. Adopt Resolution No. 14-XXX, to amend contract with AECOM and authorize the City Manager to sign the contract amendment for engineering services during the construction of the Nacimiento Water Treatment Plant for \$432,646 and approve a 10% contingency budget of \$43,264.
- b. Amend, modify or reject the above option.

**ATTACHMENTS:**

- AECOM's scope of work and fee
- Resolution No. 14-XXX

**AMENDMENT NO. 6  
TO PROFESSIONAL SERVICES AGREEMENT**

This Amendment, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2014 amends that Agreement made and entered into on April 18, 2012 (original agreement), by and between the City of El Paso de Robles (City) and AECOM Technical Services, Inc. (AECOM). Said Agreement is amended to include additional services associated with engineering work in accordance with Exhibit "A" attached hereto.

IN WITNESS WHEREOF, the parties hereto have accepted, made, and executed this amendment upon the terms, conditions, and provisions above stated the day and year first above written.

AECOM TECHNICAL SERVICES, INC.

City of El Paso de Robles

\_\_\_\_\_  
Ben Horn, PE  
Central California Area Manager

\_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**AMENDMENT NO. 6 TO THE  
SCOPE OF WORK**

**FOR**

**DESIGN OF 2-MGD NACIMIENTO WATER TREATMENT PLANT  
FOR THE CITY OF PASO ROBLES**

**SECTION 1. INTRODUCTION**

Since the original Agreement (base contract/original agreement) dated April 18, 2012, between the CITY OF EL PASO DE ROBLES (Paso Robles/City) and AECOM TECHNICAL SERVICES, INC. (Consultant/AECOM), the City has requested Consultant to perform additional engineering services associated with providing design engineer's services during construction of the 2-MGD Nacimiento Water Treatment Plant (Project). The existing scope of work to be modified under this Amendment shall be as set forth herein.

Various assumptions have been made in preparing this Scope of Services based on currently available information. To the extent they are known at this time, they are stated herein and are reflected in the task costs included in this Scope of Services. However, due to the nature and complexity of this type of project, if the actual total engineering effort required is different from the assumptions presented herein as agreed by both parties, City agrees to revise the Scope and Budget accordingly.

Construction management (CM) services, resident engineer services, construction inspection, materials testing, and construction surveying / staking services are not included in this Scope of Services. It is understood that the City has already contracted with AECOM to provide a full-time construction manager (CM) under a separate contract. Work tasks do not include services associated with other off-site improvements not specifically identified herein.

**SECTION 2. SCOPE OF SERVICES**

AECOM's design engineer shall perform the following tasks for the Construction Phase of this Project:

**Task 1 - Office Engineering Services During Construction**

AECOM will perform the following office engineering services during the course of the anticipated 15-month construction period:

- **Preconstruction Conference.** AECOM will participate in a preconstruction conference with the selected contractor.
- **Project Management/Administration.** AECOM will assign a Project Manager and Assistant Project Manager to act as AECOM's points of contact for the City and the CM during construction. These individuals will be available a combined total of 4 hours per week over the 15-month construction period (up to 240 hours) to handle project management and accounting tasks, attend the weekly construction meetings by phone, coordinate with the City and the CM, support periodic construction progress meetings organized by the CM, and assist the City with coordinating with the outside agencies that will be involved during construction (e.g. California Department of Public Health [CDPH], City of Paso Robles Building Department, Regional Water Quality Control Board).

- **General Design Engineer Services During Construction.** AECOM will provide up to 1,100 hours of general design engineer's services during construction. Services include:
  - AECOM will respond to contractors' requests for information (RFIs) during construction. RFIs will be submitted to AECOM in writing by the City or the CM, and AECOM will return a written response to the City or the CM.
  - AECOM will review shop drawings, O&M manuals, and submittals submitted by the contractor through the City or the CM and provide comments relative to their general conformance with the contract documents.
  - AECOM will issue design clarifications, if needed, to address contractor's questions.
- **Change Order and Pay Estimate Review.** AECOM will assist the City with review of potential change orders and preparation of change orders (up to five). Each proposed contract change order will be referred to the City and the CM for initial review, price checking, scheduling impacts, and approval prior to preparation of contract change order documents.

### **Task 2 – Site Visits for Limited Construction Observation Services**

AECOM will perform the following site visit services during the course of the anticipated 15-month construction period:

- **Site Visits.** AECOM design engineers will perform regular site visits to the site during construction to observe if the contractor's work is in general conformance with the plans and specifications. Observations shall conform to the standard of care for such activities. Construction observation is intended to supplement the daily activities of the CM and Inspectors retained separately by the City. A member of the AECOM design team will visit the Project site at least once or twice monthly over the anticipated 15-month duration (20 visits total) of construction. An additional 10 site visits will be made during periods of increased construction activity or complexity. Engineers specializing in specific disciplines (e.g. electrical, structural, mechanical, architectural, I&C) will perform the observations during construction phases more intensive to their discipline.

Construction observers will report site observations in a site visit log with photographs including:

- Work completed
- Discussions with the contractor or other visitors to the site
- Working conditions
- Any other significant events

Site visit logs will be submitted to the City or the CM for each visit.

- **I & C Factory Acceptance Testing.** AECOM's instrumentation and control engineer will witness the factory acceptance testing of the process control and instrumentation system (PCIS). Up to 3 days of factory witness testing is included in this scope of services.

### **Task 3 – Start-up Support Services and Operations Plan**

AECOM will perform the following start-up support services during the course of the anticipated 15-month construction period:

- **Continuous Start-Up Support (On-Site, Office, and I&C Support).** AECOM will provide continuous start-up support services during the scheduled 3-week facility startup period. AECOM engineers and its subconsultants responsible for designing the facility will be dedicated to support startup activities 8 hours per day, 5 days per week over the 3-week period (120 hours total). An additional 40 hours are included for office staff to support the engineer on-site during the start-up period and 24 hours for AECOM's instrumentation and control engineer to assist during system integration activities. It is anticipated that most of the support activities will occur at the Project site; however, a portion of the startup support may occur from AECOM's offices.
- **Operations Plan.** AECOM will also develop an operations plan for the WTP that will include general plant overview and operations information. The plan is expected to include the following sections:
  - Overview
  - Raw water supply system
  - Dissolved air flotation (DAF) clarification system
  - Membrane filtration system
  - Filtrate storage and booster pumping station
  - Activated carbon treatment system
  - Clearwell and ct compliance
  - High service pumping station
  - Chemical feed systems
  - Equalization basin and pumping station
  - Reliability, monitoring, and reporting
  - Operations staff and outside contacts

Five copies of the draft report will be submitted to the City for review and comment. Comments will be incorporated into a draft-final version to be submitted to CDPH. Comments from CDPH will be incorporated into a final Operations Plan, and five copies of the final report will be submitted to the City. Electronic .pdf copies will also be provided to the City.

#### **Task 4 – Project Closeout Services**

AECOM will perform the following closeout services:

- **Walk-Throughs and Punchlists.** AECOM will participate in pre-final and final Project walk-throughs with the City, the CM, and representatives from the City and will assist with the development of a Project closeout punchlist.
- **Record Drawings.** AECOM will prepare record drawings for the Project following completion of construction and acceptance of the facility by the City. Record drawings will be based on a single set of red-lined plans prepared by the Contractor, checked by the CM, and submitted to AECOM by the City. No independent field inspections or surveys will be performed to confirm the accuracy of the City-furnished job-site record drawings.

Changes noted on the job-site record drawings will be incorporated in the Project CAD files and final record drawings delivered to the City in .DWG, .PDF, and full-size reproducible drawing (one copy) formats.

The Contractor shall be responsible for performing the surveying and for direct submission of as-graded plans to the CM and to City. The as-graded information will be added to the record drawing by AECOM.

### **Additional Engineering Services**

The following additional services may be provided by AECOM upon written request of the City and execution by both parties of an amendment to this Scope of Services setting forth applicable scope, fee, and schedule provisions:

1. Construction inspection, special inspection, and materials testing.
2. Geotechnical and materials testing services.
3. In-plant inspections of specialty equipment at the site of manufacture.
4. Construction surveying services including construction staking.
5. Pothole existing underground utilities.
6. Furnishing a trailer, supplies, or other job site facilities.
7. Off-site improvements except as specifically defined herein.
8. Organize and oversee pilot studies.
9. Operation and control of Project facilities.
10. Specialized detailed studies associated with noise or noise attenuation.
11. Services resulting from significant changes in extent of the Project or its design including, but not limited to, changes in size, complexity (such as design of buildings), the City's schedule, or character of construction or method of financing. Revising previously accepted studies, reports, and design documents when such revisions are due to causes beyond AECOM's control.
12. Investigations involving detailed consideration of operations, maintenance, and overhead expenses; providing separate formal value process engineering during the course of design; the preparation of cash flow, and economic evaluations and rate schedules. Assistance in obtaining financing for the Project.
13. Services over the scheduled construction period of 15 months beyond the control of AECOM.
14. Services in connection with change orders to reflect changes requested by the City if the resulting change in compensation for services is not commensurate with the additional services rendered and in making revisions to drawings and specifications occasioned thereby, and services resulting from significant delays, changes, or price increases occurring as a direct or indirect result of material, equipment, or energy shortages.
15. Services made necessary by changes in construction contractor or default of construction contractor.
16. Services after completion of the construction phase such as inspections during any guarantee period and reporting observed discrepancies under guarantees called for in any contract for the Project.
17. Any other specific services requested by the City or AECOM not identified in this Scope of Services.



18. Provide or acquire water rights as needed for the Project.

### **City's Duties and Responsibilities**

The following work items will be the responsibility of the City:

1. Apply for and pay for all environmental clearances and permits.
2. Provide all previous reports and studies related to the work.
3. Provide or acquire easements as needed for the Project.
4. Examine all studies, reports, sketches, drawings, specifications, proposals, and other documents presented by AECOM, obtain advice of an attorney, insurance counselor, and other engineers as the City deems appropriate for such examination and render, in writing, decisions pertaining thereto within a reasonable time so as not to delay the performance of services by AECOM.
5. Apply for and secure approvals and permits from all governmental authorities having jurisdiction of the Project and such approvals from other entities or agencies as may be necessary for the Project, with the assistance of AECOM or as additionally authorized. The City shall pay all fees and charges associated with securing permits and approvals.
6. Provide financial consulting and legal services required for the Project.
7. Provide drawings and other data relating to layout and design of existing facilities, easements, road right-of-ways, etc., that may relate to the Project.
8. Uncover by excavation or otherwise expose and determine the depth of cover on all underground utilities or facilities for which drawings are not available showing the elevation and size of said facilities where such facilities may be in conflict with proposed Project facilities.
9. Provide a copy of current dated Title Report for review relative to easements and other property encumbrances.

### **Contractor Indemnification & Insurance**

The City shall include in the general conditions of any construction contract, language which states that the construction contractor is required to hold harmless and defend the City, AECOM and their agents, employees, and consultants, from all suits and actions, including attorneys' fees, and all costs of litigation and judgments of any nature and description arising out of or incidental to the performance of the construction contract or work performed thereunder. The City, AECOM, their agents, employees, and consultants shall also be named as additional insureds in any construction contractor's insurance policies.

### **Job Site Safety**

In accordance with generally accepted construction practices, the Contractor(s) will be required to assume sole and complete responsibility for job site conditions during the course of construction of the Project, including safety of all persons and property, and that this requirement shall be made to apply continuously and not be limited to normal working hours. Neither AECOM nor any member of the AECOM team shall have control over or charge of, and shall not be responsible for, construction means, methods, techniques, sequences or procedures, as these are solely the responsibility of the construction contractor. Neither AECOM nor any member of the AECOM team shall have the authority to stop or reject the work of the construction contractor. The authority to stop the work of the construction contractor is the sole responsibility of the City.

### **Asbestos & Other Hazardous Materials**

In providing its services hereunder, AECOM shall not be responsible for identification, handling, containment, abatement, or in any other respect, for any asbestos or hazardous material if such is present in connection with the Project. In the event that the City becomes aware of the presence of asbestos or hazardous material at the jobsite, the City shall be responsible for complying with all applicable federal and state rules and regulations, and shall immediately notify AECOM, who shall then be entitled to cease any of its services that may be affected by such presence, without any liability to AECOM arising therefrom.

### **Estimates of Probable Construction Cost**

Any estimate of the construction cost prepared by AECOM represents a judgment as design professionals and is supplied for the general guidance of the City. Since AECOM has no control over the cost of labor and material or over competitive bidding or market conditions, AECOM does not guarantee the accuracy of such estimates or opinions as compared to contractor bids of actual cost to the City.

### **Electronic Data**

CADD/system disk files delivered to the City shall not include the professional stamp or signature of an engineer. The City agrees that AECOM shall not be liable for claims, liabilities, or losses arising out of, or connected with (a) the modification or misuse by the City, or anyone authorized by the City, of CADD files; (b) the decline of accuracy or readability of CADD files due to inappropriate storage conditions or duration; or (c) any use by the City, or anyone authorized by the City, of CADD files for additions to this Project, for the completion of this Project by others, or for any other project, excepting only such use as is authorized, in writing, by AECOM.

### **Schedule**

AECOM shall promptly pursue work tasks upon receipt of this signed Agreement and Notice to Proceed from the City. It is anticipated that Construction Phase Services will be concurrent with the construction work, which is scheduled to begin in April 2014 to June 2015. Changes in the timing or duration of this schedule may result in changes to the corresponding scope and fee for services.

### **Compensation**

The work contained in this Scope of Services will be provided on a time and materials basis to be invoiced monthly in accordance with Exhibit C – Standard Billing Rates of the original agreement. The initial estimated maximum total fee to be invoiced under this Amendment is \$432,646, and this fee shall not be exceeded without written authorization from the City. The estimated detailed fee breakdown is attached. The City's fee for basic services as set forth in Section 6 of the original agreement is hereby revised to \$1,401,076.

END EXHIBIT A

**Attachment 1 - Detailed Fee Breakdown**

**Paso Robles Water Treatment Plant  
Design Engineer Services During Construction**

City of Paso Robles

Task Description	Personnel Hours						Budget				Total	
	Principal	Senior II	Senior I	Associate	CADD Operator	Technical Typist	Total Hours	Labor	General Project Exp	Subconsultants		Total Non-Labor
<b>Task 1 - Office Engineering Services During Construction</b>												
Pre-Construction Conference		6	6			2	14	\$ 2,200	\$ 176		\$ 176	\$ 2,376
Project Management/Administration (4 hrs/week over 15 months)		120	120			8	248	\$ 41,440	\$ 3,315		\$ 3,315	\$ 44,755
General Design Engineer Services During Construction (RFIs, Shop Drawings)	140	280	280	210	120	70	1,100	\$ 170,700	\$ 13,656	\$ 40,250	\$ 53,906	\$ 224,606
Change Order and Pay Estimate Review (up to 5)		56				14	70	\$ 11,480	\$ 918		\$ 918	\$ 12,398
<b>Subtotal</b>	<b>140</b>	<b>462</b>	<b>406</b>	<b>210</b>	<b>120</b>	<b>94</b>	<b>1,432</b>	<b>\$ 225,820</b>	<b>\$ 18,066</b>	<b>\$ 40,250</b>	<b>\$ 58,316</b>	<b>\$ 284,136</b>
<b>Task 2 - Site Visits for Limited Construction Observation Services</b>												
General Site Visits (up to 20)		60	60				120	\$ 20,400	\$ 9,632	\$ 5,750	\$ 15,382	\$ 35,782
Site Visits by Discipline Leads (Up to 10)	44	16					60	\$ 12,200	\$ 3,976	\$ 2,300	\$ 6,276	\$ 18,476
I&C Factory Acceptance Testing (3 Days)		24					24	\$ 4,440	\$ 1,555		\$ 1,555	\$ 5,995
<b>Subtotal</b>	<b>44</b>	<b>100</b>	<b>60</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>204</b>	<b>\$ 37,040</b>	<b>\$ 15,163</b>	<b>\$ 8,050</b>	<b>\$ 23,213</b>	<b>\$ 60,253</b>
<b>Task 3 - Start-up Support Services and Operations Plan</b>												
Continuous Start-Up Support Services		100	40				140	\$ 24,700	\$ 1,976	\$ 4,968	\$ 6,944	\$ 31,644
Office Support		20	20	12		8	40	\$ 5,300	\$ 424		\$ 424	\$ 5,724
I&C Start-Up Support		24					24	\$ 4,440	\$ 355		\$ 355	\$ 4,795
Operations Plan	2	6	88	40		16	152	\$ 21,650	\$ 1,732	\$ 2,300	\$ 4,032	\$ 25,682
<b>Subtotal</b>	<b>2</b>	<b>130</b>	<b>148</b>	<b>52</b>	<b>-</b>	<b>24</b>	<b>356</b>	<b>\$ 56,090</b>	<b>\$ 4,487</b>	<b>\$ 7,268</b>	<b>\$ 11,755</b>	<b>\$ 67,845</b>
<b>Task 3 - Project Close-Out</b>												
Walk-Throughs and Prepare Punchlists	2	12	12			8	34	\$ 5,140	\$ 411		\$ 411	\$ 5,551
Prepare Record Drawings	2	6	4	4	80	2	98	\$ 11,630	\$ 930	\$ 2,300	\$ 3,230	\$ 14,860
<b>Subtotal</b>	<b>4</b>	<b>18</b>	<b>16</b>	<b>4</b>	<b>80</b>	<b>10</b>	<b>132</b>	<b>\$ 16,770</b>	<b>\$ 1,342</b>	<b>\$ 2,300</b>	<b>\$ 3,642</b>	<b>\$ 20,412</b>
<b>Total</b>	<b>190</b>	<b>710</b>	<b>630</b>	<b>266</b>	<b>200</b>	<b>128</b>	<b>2,124</b>	<b>\$ 335,720</b>	<b>\$ 39,058</b>	<b>\$ 57,868</b>	<b>\$ 96,926</b>	<b>\$ 432,646</b>

Personnel Category	\$/HR
Principal	\$210.00
Senior II	\$185.00
Senior I	\$155.00
Associate	\$130.00
CADD Operator	\$110.00
Technical Typist	\$80.00

**RESOLUTION NO. 14-XXX**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES  
AMENDING A CONTRACT WITH AECOM  
TO PROVIDE ENGINEERING SERVICES DURING CONSTRUCTION AND  
STARTUP OF THE CITY'S WATER TREATMENT PLANT**

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WHEREAS, in December 2013 AECOM completed construction-ready plans and specifications for a new water treatment plant.

WHEREAS, On February 18, 2014 City Council awarded a contract to Cushman Contracting for the Construction of the water treatment plant.

WHEREAS, AECOM demonstrated good performance and cost control during the planning and design phases of the water treatment plant.

WHEREAS, construction, startup, and CDPH approval of the water treatment plant will require AECOM's engineering services.

THEREFORE, BE IT RESOLVED AS FOLLOWS:

SECTION 1. The City Council does hereby amend a contract to AECOM for engineering services during construction and startup of the Paso Robles Water Treatment Plant for \$432,646 plus a 10% contingency budget of \$43,264 and authorizes the City Manager to execute the contract amendment.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 18th day of March 2014, by the following votes:

AYES:  
NOES:  
ABSENT:  
ABSTAIN:

ATTEST:

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Duane Picanco, Mayor

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Caryn Jackson, Deputy City Clerk