

NEW MEXICO INTERSTATE STREAM COMMISSION

COMMISSION MEMBERS

PHELPS ANDERSON, Chairman, Roswell
TOM BLAINE, P.E. Secretary
CALEB CHANDLER, Clovis
JIM DUNLAP, Farmington
BUFORD HARRIS, Mesilla
BLANE SANCHEZ, Isleta
MARK SANCHEZ, Albuquerque
JAMES WILCOX, Carlsbad
TOPPER THORPE, Cliff



BATAAN MEMORIAL BUILDING, ROOM 101
POST OFFICE BOX 25102
SANTA FE, NEW MEXICO 87504-5102
(505) 827-6160
FAX: (505) 827-6188

November 7, 2016

Mr. Ed Toms
11251 Northwest FWY. #400
Fort Collins, CO 80524

RE: Contract # 19776 Amendment #1

Dear Mr. Toms:

This letter shall serve as official notice of the approval of the amendment for contract # 19776. I have enclosed a photocopy of the approved amendment for your files.

Please make sure that all invoices that are submitted under this contract reference the appropriate contract number 19776. All deliverables under this contract shall not exceed June 30, 2017.

If you have concerns or questions relating to this contract, please contact Ali Effati at (505) 827-5801.

Sincerely,


Kim Abeyta-Martinez
Administrative Manager
Interstate Stream Commission

Attachment

Copy to:
Ali Effati
Marcos Mendiola

**AMENDMENT NO. 1
PROFESSIONAL WATER RESOURCE SERVICES
BETWEEN THE NEW MEXICO INTERSTATE STREAM COMMISSION AND
AECOM TECHNICAL SERVICES, INC.**

This Amendment to the Price Agreement #19776, ("Amendment No. 1") is entered into by and between the Office of the State Engineer, Interstate Stream Commission, an agency of the State of New Mexico ("Agency"), and AECOM Technical Services, Inc. ("Contractor"), collectively the "Parties", effective as of the date shown below that is approved by the New Mexico Department of Finance and Administration.

RECITALS

THE PARTIES HERETO enter into this Amendment No. 1 on the basis of the following facts, understandings, and intentions:

A. The parties previously entered into that certain Professional Services Agreement dated May 9, 2016, (the "Original Contract"); and,

B. Article 22, of the Original Contract allows for amendment of the contract in writing executed by both Parties and all other required signatories; and,

C. The Contractor has been providing services to the Agency, and the Agency is satisfied with those services and is hereby requesting Article 2(a) – Scope of Work and Article 3(a) – Compensation and Payment be amended to increase the Cost Limitation from \$535,875 to \$1,371,875 to reflect the agreement term.

AGREEMENT

THEREFORE, in consideration of the foregoing recitals and the covenants and promises contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereto agree as follows:

Article 2(a) – Scope of Work, is hereby amended to read as follows:

“(a) *Generally*. The Contractor shall perform the following work:

- (1) The Contractor, having completed the tasks and provided the deliverables listed in Exhibit A to the Original Contract, will now perform the tasks outline in Exhibit B, which is attached hereto and made a part hereof.
- (2) The Contractor shall provide professional engineering services required to complete the tasks and provide the deliverables listed in Exhibit B Phase II Services, which is attached hereto and made a part hereof. This work is required in light of Objective No. 1 in Exhibit A to the Original Contract.

The Contractor shall advise the Agency promptly of any problems encountered in performing its duties associated with this Agreement.”

Article 3(a) – Compensation and Payment, is hereby amended to read as follows:


“(a) *Cost Limitation*. The total amount payable by the Agency under this Agreement shall not exceed One Million Three Hundred and Seventy One Thousand Eight Hundred and Seventy Five Dollars (\$1,371,875) inclusive of applicable gross receipt tax (“Cost Limitation Amount”). The Cost Limitation Amount is a maximum and not a guarantee that the Contract Manager will assign the Contractor any tasks, or that the work to be performed will equal the Cost Limitation Amount. The Contractor shall be paid based upon the Cost Schedule listed in Exhibit B attached hereto and made part hereof.

The Agency will encumber specific sums of money during fiscal years as necessary to pay for the work to be performed pursuant to this Agreement (“Encumbered Amount”). The Contractor is responsible for not billing in excess of the lesser of the Cost Limitation Amount or the presently Encumbered Amount, and for verifying the Encumbered Amount with the Contract Manager. The Contractor will not be compensated or reimbursed for work performed, or expenses incurred, in excess of the lesser of the Cost Limitation Amount or the Encumbered Amount.”

All terms, covenants, and conditions contained in the Original Contract, and not modified herein shall remain in full force and effect. This Amendment shall not become effective unless and until approved by the New Mexico Department of Finance and Administration.

IN WITNESS WHEREOF, the parties have entered into this Amendment No. 1 to the Price Agreement effective as of the date of execution by the State Contracts Officer below.

CONTRACTOR:

By: 
Name: Ed A. Toms
Title: Vice President

Date: September 26, 2016

AGENCY:

By: 
Tom Blaine, P.E., State Engineer

Date: 10/13/16

Approved as to budget sufficiency:

By: 
Jeff Rimm, Director
Administrative Services Division

Date: 9/29/16

Approved by Agency CFO:

By: 
Monica Trujillo, CFO

Date: 9/28/16

Approved as to legal form and sufficiency:

By: *Dominique Ud*
for Amy Haas, ISC General Counsel

Date: Sept 27, 2016

TAXATION AND REVENUE DEPARTMENT

The records of the Taxation and Revenue Department of the State of New Mexico reflect that Contractor is registered with the Taxation and Revenue Department to pay gross receipts and compensating taxes.

ID Number: 02450666004

By: *Raymond Jones*
DEPARTMENT OF FINANCE AND ADMINISTRATION

Date: 9/30/16

By: *Barbara*
State Contracts Officer

Date: 11/1/14

**Exhibit B
Phase II Services**

Phase II – Refinement of concepts selected by the NM CAP Entity following Phase I

Tasks are not necessarily presented in order. No task will begin until direction from ISC staff is received.

Task	Description	Deliverables	Cost	Due Date
6	Project Management		\$88,728	20 weeks after directed by ISC
6.1	<p><u>Kick Off Meeting:</u></p> <ul style="list-style-type: none"> The Project Manager and key team members will prepare for and attend kickoff meeting prior to commencing work on the project. The objective of the kick-off meeting will be to establish a cooperative working relationship with ISC and NM CAP Entity representatives upfront. 	<ul style="list-style-type: none"> AECOM will prepare meeting minutes that summarize discussion items, decisions, and action items. 		
6.2	<p><u>Communication Protocols:</u></p> <ul style="list-style-type: none"> Decisions made during the kick-off meeting will be incorporated into a Project Management Plan (Plan) that will include a schedule, costs, health and safety measures, and quality assurance/quality control. Specific requests from the ISC Project Manager, such as the inclusion of specific communication protocols, will be incorporated in the Plan. The AECOM Project Manager will distribute the communication protocols to the Team and update the document when required. 	<ul style="list-style-type: none"> AECOM will prepare a comprehensive Project Management Plan and will share it with ISC/NM CAP electronically, as requested. The PM will maintain the document and provide updates as required during the duration of the project. The document will be reviewed at the beginning of each monthly meeting to ensure it is up to date and relative. 		
6.3	<p><u>Monthly Meetings:</u></p> <ul style="list-style-type: none"> The Project Manager will conduct monthly or more frequent meetings with the ISC and the NM CAP entity Technical Representative. During the meeting, AECOM will provide a summary of technical work accomplished; work anticipated, schedule update, and areas of concern, if any. Internet video conferencing and/or net meetings will be used as much as possible to help reduce project costs. 	<ul style="list-style-type: none"> Agendas will be provided prior to each meeting AECOM will prepare meeting minutes. 		

<p>6.4</p>	<p>Prepare Monthly Status Reports:</p> <ul style="list-style-type: none"> • AECOM will provide monthly status reports, in combination with the monthly invoices presenting costs incurred in the prior month by task. The monthly status reports will address the following: <ul style="list-style-type: none"> - Key performance indicators (KPI) - Percent of work accomplished in the previous month by task - Earned Value tracking will be used to present the monthly summary which will include burndown chart, Cost Performance Index (CPI), and Schedule Performance Index (SPI) charts. - Meetings held and relevant action items - Problems encountered and solutions implemented or recommended - Cost and schedule status - Work scheduled for the next month 	<ul style="list-style-type: none"> • AECOM will prepare monthly status reports for inclusion in the submittal of monthly invoices. 		
<p>7</p>	<p>Diversion and Diversion Locations</p> <ul style="list-style-type: none"> • Site visit to Cliff-Gila, Redrock and Virden Valleys. Evaluate riparian biological impacts at diversion locations. • Develop engineering concepts (supported by appropriate engineering studies) for diversions and diversion locations near the Gila River Gage. • Develop site access roads for operation and maintenance activities. • Develop required hydraulic models to evaluate flow and sediment transport. • The main purpose for this scope item is to establish the diversion elevation and location for the Gila diversions. The diversion locations aid in evaluating the gravity, pump and locations for ASR. • Provide GIS and GPS support to team. <p>Assumptions: Up to 4 GIS based figures will be created for the memo.</p>	<ul style="list-style-type: none"> • Summary memo evaluating the site conditions, bed materials, vertical and lateral stability of potential diversion locations based on available data. • Conceptual engineering drawings of diversion structures, topographical maps of diversion locations showing associated infrastructure with water elevations. • Concept design will be based on existing ISC LiDAR. 	<p>\$130,450</p>	<p>2 weeks after directed by ISC</p>

8	TNC/NMCAP Coordination and Agency Meetings		\$22,880	As directed by the ISC
	<ul style="list-style-type: none"> • The AECOM team will prepare for and attend a meeting with the TNC/NMCAP/ISC as required. • AECOM will coordinate with TNC and the NMCAP as expressly directed by the ISC. • Provide GIS support to team. 	<ul style="list-style-type: none"> • AECOM will prepare meeting minutes that summarize discussion items, decisions and action items. • Oversized maps will be developed for use at the meeting. • Other information will be developed/obtained as required for the meeting. 		
9	ASR Ground Water Numerical Model		\$221,753	15 weeks after directed by ISC
9.1	<ul style="list-style-type: none"> • Desktop evaluation of existing data and development of a linked groundwater-surface water conceptual model (including model domain with model layers, model boundaries, potential major stream discharge/stage groupings, and calibration targets). • Where available, previous models, data, and parameters will be used. • Site visit by the AECOM Principal Hydrogeologist. 	<ul style="list-style-type: none"> • Assumes the MODFLOW numerical model for Reach 1 of the June 2014 SSPA report is available for AECOM to utilize as a starting base. The existing model will be evaluated and adapted to incorporate new information and simulation of the Phase 2 ASR elements. 		
9.2	<ul style="list-style-type: none"> • Refine aquifer conceptual model. Construct/update numerical model within defined ranges of input parameter values and boundary conditions. Includes additional work needed to develop model input for delineation of land use (irrigated vs. non-irrigated). 	<ul style="list-style-type: none"> • Includes GIS support to prepare LiDAR and other regional data sets for incorporation to the numerical model 		
9.3	<ul style="list-style-type: none"> • Refine model with AECOM data and calibration targets from field hydrogeologic investigations/testing. 	<ul style="list-style-type: none"> • Assumes field investigation data is available and evaluated prior to performing steady-state model calibration. • Assumes geologic data confirms absence of significant clay layers/lenses in infiltration area and high permeability of alluvial aquifer material. • Calibration targets will include transient water level data from new wells installed during Phase 2 investigation, and injection/pumping tests. 		
9.4	<ul style="list-style-type: none"> • Model calibration to steady-state conditions. Adjustment of model parameters within reasonable ranges of values to obtain fit to calibration data. 	<ul style="list-style-type: none"> • Assumes calibration targets will include water levels obtained from new monitoring well/piezometer installations. If new well data is not available, calibration will include 		

		<p>water levels from older piezometers installed in “transects”, which were subsequently decommissioned. “Steady-state” is an over-simplification due to the reportedly rapid aquifer response to changes in stream discharge and seasonal discharge variations. Steady-state calibration will consist of comparing modeled water levels in monitoring well locations during a relatively steady seasonal period of stream discharge.</p>		
<p>9.5</p>	<ul style="list-style-type: none"> Model calibration to transient conditions for several stream discharge stress periods, and also for the Phase 2 ASR pumping and infiltration tests. Adjustment of model parameters within reasonable ranges of values to obtain reasonable fit to calibration data. 	<ul style="list-style-type: none"> Calibration targets will include transient water level data from new wells installed during Phase 2 investigation, and injection/pumping tests. Model water levels will be compared to water levels in monitoring wells during pumping/infiltration tests, and also several stream discharge stress periods. 		
<p>9.6</p>	<ul style="list-style-type: none"> Predictive simulations of ASR scenarios at two potential sites. An ASR transient model scenario consists of one or more infiltration event(s) at one infiltration area, tracking groundwater flow of stored settlement water down-valley and in-stream, and subsequent groundwater or stream recovery. 	<ul style="list-style-type: none"> Assumes simulation of 5 transient ASR scenarios at two sites, one up valley and one down valley, and tracking (timing) of AWSA stored water to south end of model and/or return flow to Gila River. Recovery of stored settlement water simulations at two locations for each site, one near and one far from each infiltration area. Infiltration sites and groundwater recovery sites will be located based on land access availability as described in Task 6.3.0. If no agreed upon sites are available during ASR modeling task, locations shown in AECOM feasibility report will be used in the model. 		
<p>9.7</p>	<ul style="list-style-type: none"> Sensitivity analysis of model simulations by varying calibrated parameters. 	<ul style="list-style-type: none"> AECOM will evaluate the effects of changes in model parameters on model calibration. The most “sensitive” parameters for the steady-state and transient models will be identified and three 		

		parameters will be quantified.		
9.8	<ul style="list-style-type: none"> • A Groundwater Modeling Report to Support ASR Alternatives will be prepared upon completion of model calibration and predictive simulations for infiltration and recovery scenarios. The report will include maps and cross sections showing the model domain and grid, model layers, model boundary conditions, values for input parameters, stream stage discretization, model comparison to calibration targets, predictive model results for an ASR transient model scenario, and results of sensitivity analysis to illustrate effects on calibration and simulation results and comparison to design basis. • Differentiate AWSA water from other water rights and duration of water availability for use. • Support coordination with OSE related to ASR concepts. 	<ul style="list-style-type: none"> • AECOM will document progress on development of the numerical groundwater flow model through scheduled routine teleconference calls supplemented with distribution of brief narrative descriptions and/or maps, cross-sections, and/or charts as appropriate. • For the report, AECOM will submit one version of the draft report for NM ISC review and comment. The final version of the report will address comments received from NM ISC. • AECOM will address differentiation of AWSA water in ASR model simulations, and "track" travel time of infiltrated AWSA settlement stored water across model domain and/or into Gila River as return flow. • AECOM model team lead will be available to discuss ASR concepts with OSE personnel via teleconference as needed. Scope assumes maximum of four, one-hour teleconference calls over 6-month project duration. 		
10	Geology and Geotechnical Investigations for ASR Sites		\$200,507	6 weeks
10.1	Current Gage Site			after directed by ISC
	<ul style="list-style-type: none"> • Perform a desktop study including review of previous investigations, available documents, published maps, and property ownership/boundaries. Perform geologic reconnaissance and mapping of the site with focus on geologic and hydrogeologic features that may impact the project (deep gullies, thick vegetation, existing ponds, presence of clay units, and steep slopes) and on identifying locations of the proposed test holes and test pits and potential access constraints. • Drill ~15 test holes in the Gila River valley alluvium up to a depth of ~50 feet. The purpose of the test holes is 	<ul style="list-style-type: none"> • A Geotechnical Data report will be written to present the results of the geologic reconnaissance and geotechnical investigations of the ASR sites. The report will include regional and site/local geology, results of geologic mapping, geotechnical investigation summary, test hole and test pit logs, field test results, laboratory test results and a summary of the site conditions. • AECOM will obtain required permits for drilling and completion holes. • AECOM will prepare a drilling and testing plan to gain approval from 		

	<p>to evaluate the subsurface conditions and material types in the river valley and in areas of proposed infiltration basins and existing principal hydrologic features, and to measure static water levels. Test holes will be drilled with hollow stem augers and/or Odex drilling methods. Collect samples for laboratory testing and to install vibrating wire piezometer and/or open standpipe groundwater monitoring wells. Three piezometers will be installed in a transect located between the irrigation ditch and the stream.</p> <ul style="list-style-type: none"> • Excavate up to ~10 test pits in the infiltration area. The purpose of the test pits will be to evaluate the subsurface conditions (depth and type of alluvium, depth to groundwater, etc.), collect bulk samples for testing, and verify presence or absence of significant clay layers above water table. Two test pits will be used for infiltration test sites. • Conduct falling head or rising head permeability tests in the monitoring wells. • Perform an aquifer pumping test in area with several monitoring wells to evaluate hydraulic conductivity, storage, and transmissivity. • Conduct short-term, small scale infiltration tests in three test pits. • Install vibrating wire piezometers or pressure transducers and obtain water level data on 15-minute intervals for duration of ASR model task. • Perform surface geophysics using methods such as ERI, EM, seismic reflection/refraction, magnetotelluric and/or magnetic resonance during irrigation season to evaluate variability of groundwater elevation and depth of aquifer. • A Geotechnical Data report will be written to present the results of the geologic reconnaissance and geotechnical investigations of the ASR sites. The report will include regional 	<p>appropriate agencies.</p> <ul style="list-style-type: none"> • AECOM with assistance from the ISC will obtain permission to gain access from landowners to perform the drilling, sampling, and testing. • AECOM will sub contract with NM licensed drillers to perform the work. • Assumes completion of drilling and well installation will require 7 field days plus mobilization and demobilization. One AECOM geologist will be present in an oversight role, and will log cuttings and core recovered from each borehole. • Includes costs for laboratory analysis for gradation and hydrometer tests of 40 soil/sediment samples (two samples per well location; one above water table and one below water table, one sample per test pit). • Completion of 15 monitoring wells or vibrating wire piezometers to depths of up to 50 feet below ground surface, with surface completion. • Assumes completion of field permeability and injection testing will require 7 field days plus mobilize and demobilize. Two AECOM field personnel will conduct the aquifer testing and data collection. • Includes GIS support and GPS support and equipment rental. • Slug tests (2 slug-in and 2 slug-out tests) will be conducted in each monitoring well installed. • Aquifer pumping and recovery test durations assumed to be 6 hours each. Extracted water to be discharged to ground surface downslope of pumping test area, outside estimated radius of influence. • Assumes dedicated pressure transducers will be placed in 15 		
--	--	---	--	--

	<p>and site/local geology, results of geologic mapping, geotechnical investigation summary, test hole and test pit logs, field test results, laboratory test results and a summary of the site conditions.</p> <ul style="list-style-type: none"> • Provide GIS support to team. <p>Assumptions:</p> <ul style="list-style-type: none"> • Up to 4 GIS-based figures will be created for the current gage site. 	<p>wells or use of vibrating wire piezometers.</p> <ul style="list-style-type: none"> • Infiltration tests will be conducted in two areas using test pits excavated earlier. Volume of water will not exceed XXX gallons in each test. Water levels will be measured using transducers in nearby wells. • Surface geophysical survey to be completed by a subcontractor to AECOM. Includes geophysical testing, data acquisition, evaluation, and a brief technical report describing test methods, evaluation, and findings. 		
11	ASR Additional Sites Down Valley		\$39,227	4 weeks after directed by ISC
	<ul style="list-style-type: none"> • Perform field visits(s) to identify two additional down valley ASR sites, including hydrogeologic reconnaissance and evaluation of site access. • Provide GIS and GPS support to team. <p>Assumptions:</p> <ul style="list-style-type: none"> • Rent one sub-meter accuracy GPS unit. • Up to 4 GIS-based figures will be created for the memo. • No geotechnical investigations are included with this task. If required geotechnical investigations will be authorized under Task 8. 	<ul style="list-style-type: none"> • AECOM will prepare a Task Memorandum to document observations during the site visit and hydrogeologic reconnaissance. Recommendations for a subsequent hydrogeologic field investigation may be included if appropriate, and depending upon geologic observations and results of hydraulic testing described in Task 6. • Includes costs for a site visit by the AECOM Principal Hydrogeologist and field partner with associated field equipment 		
12	Agency Requirements		\$25,160	As directed by the ISC
	<ul style="list-style-type: none"> • Identification of the anticipated permits and regulatory approvals needed for construction of the preferred alternative based on the 30% design. • A permitting summary will be developed that will track the anticipated permits and approvals (e.g. lead times, fees, etc.) as well as the responsible party (e.g. Owner or contractor) for obtaining the permits. • Initial agency coordination will be conducted in order to verify permitting requirements and timeframes for scheduling purposes. Federal and state 	<ul style="list-style-type: none"> • Permitting summary memo. • Meeting minutes and phone call logs from agency discussions via the face-to-face meetings and phone calls 		

	<p>agencies that may need to be coordinated with include the Bureau of Reclamation, U.S. Army Corps of Engineers, U.S. Forest Service, U.S. Fish and Wildlife Service, the State Historic Preservation Officer, New Mexico Department of Game and Fish, New Mexico Department of the Environment and the OSE. Agency coordination conducted under this task is not intended to interfere with the agency-to-agency consultation that will be led by the Bureau of Reclamation as part of the NEPA process.</p> <ul style="list-style-type: none"> • Development of a permitting strategy will be an iterative process involving multiple Team members to assure that the strategy accurately captures the potential permitting triggers and maintains consistency with the overall project objectives. • Provide GIS support to team. <p>Assumptions:</p> <ul style="list-style-type: none"> • One (1) face-to-face meeting will be held between September 2016-March 2017 with the ISC/CAP, the Bureau of Reclamation, and other select federal and state agencies in Albuquerque. An engineer and environmental scientist from AECOM will attend the meetings in person. Up to 3 other technical staff may attend the meetings via conference call. • Two (2) group conference calls with the ISC/CAP, the Bureau of Reclamation and other select federal and state agencies will be held • Up to 2 GIS-based poster-sized maps will be created for the in person meeting. • Up to 2 GIS-based figures will be created for the report. 			
13	Additional Work as Directed		\$50,000	As directed by ISC
	<ul style="list-style-type: none"> • AECOM will perform additional work as required to support the program. 			

	Subtotal	\$778,705
	NMGRT	\$56,943
	Total	\$835,647



State of New Mexico Purchase Order

PO Number to be on all Invoices and Correspondence

DUPLICATE

Dispatch via Print

Office of State Engineer

P.O. Box 25102
Santa Fe NM 87504-5102
United States

Vendor: 0000074387
AECOM TECHNICAL SERVICES, INC.
11251 NORTHWEST FWY #400
FORT COLLINS CO 80524-0000

Purchase Order 55000-0000016326	Date 10/26/2016	Revision	Page 1
Payment Terms Pay Now	Freight Terms FOB Destination	Ship Via Best Way	
Buyer STEVEN BAROS	Phone		

Ship To: P.O. Box 25102
Santa Fe NM 87504-5102
United States

Bill To: P O Box 25102
Santa Fe NM 87504-5102
United States

Origin: EXC **Exc\Excl #:** 13-1-99A

Line-Sch	Item/Description	Mfg ID	Quantity	UOM	PO Price	Extended Amt	Due Date
1- 1	FY17, Professional Services Agreement for Engineering Design Services for the NM Unit of the Central Arizona Project	55000-30810-Z80126-535200- - - - -91448-30000	1.00	EA	702,650.00	702,650.00	10/26/2016
Schedule Total						<u>702,650.00</u>	
Contract ID: 00000000000000000019776 01		Contract Line: 0		Release: 1			
Item Total						<u>702,650.00</u>	
2- 1	FY17, Professional Services Agreement for Engineering Design Services for the NM Unit of the Central Arizona Project	55000-30810-A150100-535200- - - - -91648-50000	1.00	EA	133,350.00	133,350.00	10/26/2016
Schedule Total						<u>133,350.00</u>	
Contract ID: 00000000000000000019776 01		Contract Line: 0		Release: 2			
Item Total						<u>133,350.00</u>	
Total PO Amount						<u>836,000.00</u>	

Agency Approval - I certify that the proposed purchase represented by this document is authorized by and is made in accordance with all State (and if applicable Federal) legislation rules and regulation. I further certify that adequate unencumbered cash and budget expenditure authority exists for this proposed purchase and all other outstanding purchase commitments and accounts payable.

Authorized Signature