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Meeting Date: December 2, 2015  
Staff Contact: John M. Stomp III, P.E., Chief Operating Officer

**TITLE: C-15-29 – Approving Supplemental Agreement for INTERA to Continue Work on Water Budget Model and Support for Update to Water Resources Management Strategy**

**ACTION: Recommend Approval**

**SUMMARY:**

The Water Authority is in the midst of performing the decade (2017) update to the Water Resources Management Strategy (WRMS). The update is based on principles first articulated in the 1997 WRMS, and subsequently brought forward and augmented by the 2007 WRMS update. The current update builds upon and adds to previous WRMS strategies by focusing on ongoing replenishment of the aquifer coupled with a long-term plan for ensuring groundwater sustainability. In addition, the 2017 WRMS update seeks to extend the planning horizon 100 years into the future, while at the same time contemplating the potential effects of climate change to water resources in the region.

An extensive amount of work has been completed over the last five years in support of the 2017 WRMS update by the Project Team, which consists of senior Water Authority staff, INTERA, and several other consultants. The Water Authority is in the process of developing a water budget model for simulation and planning of various supply and demand scenarios, in support of future water planning.

The Water Authority convened a Scientific Task Force (Task Force) to review and evaluate the development of the model. The Task Force consisted of representatives from the Corps of Engineers, the US Bureau of Reclamation, the New Mexico Interstate Stream Commission, the US Fish and Wildlife Service, and active and retired academic experts from the University of New Mexico. The Task Force included technical experts from a variety of fields including climate change, systems modeling, surface-water modeling, groundwater modeling, habitat management, river management, and economics. The Task Force provided feedback and comments in updating the model. The updates requested have been completed and the Project Team continues to update the water budget model on a regular basis.

The Project Team continues to engage the Water Authority's Technical Customer Advisory Committee (TCAC) in its process on a regular basis. To date, the TCAC has provided input, advice, and guidance on demand projections, supply projections, an initial list of possible future water supply alternatives, and the decision analysis criteria that will be used by the Project Team to perform an initial ranking of the alternatives. The

Project Team has and will continue to engage the TCAC in all aspects of the work throughout the life of the project.

This contract will allow INTERA to continue supporting the Water Authority and its consultants with the ongoing development, design, evaluation, and communication of the 2017 WRMS.

**FISCAL IMPACT:**

Budgeted.

**SIXTH SUPPLEMENTAL AGREEMENT  
ALBUQUERQUE BERNALILLO COUNTY  
WATER UTILITY AUTHORITY  
AND  
INTERA, INC.**

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THIS SIXTH SUPPLEMENTAL AGREEMENT is made and entered into on the date of the last signature entered below by and between the Albuquerque Bernalillo County Water Utility Authority, a New Mexico political subdivision, P.O. Box 568, Albuquerque, NM 87103-0568 (hereinafter referred to as the "Water Authority"), and Intera, Inc., a Texas corporation, with an office at 6000 Uptown Blvd NE, Suite 100, Albuquerque, NM 87110 (hereinafter referred to as the "Contractor" or "INTERA").

**RECITALS**

WHEREAS, the Water Authority and the Contractor entered into an Agreement, dated May 19, 2010, pursuant to the Water Authority's Request for Proposals, RFP2009-027-TC titled "Water Resources Management Strategy", referenced as Exhibit A and Contractor's response to RFP2009-027-TC, dated April 9, 2009, referenced as Exhibit B, as amended by a First Supplemental Agreement, dated July 10, 2012, a Second Supplemental Agreement, dated May 29, 2013, a Third Supplemental Agreement, dated July 1, 2013, a Fourth Supplemental Agreement, dated April 24, 2014, and a Fifth Supplemental Agreement, dated April 3, 2015, hereinafter referred to as the "Original Agreement", whereby the Contractor agreed to render certain professional services to the Water Authority; and

WHEREAS, the Water Authority wishes to add the 2017 Water Resources Management Strategy (WRMS), in support of future water planning; and

WHEREAS, the Contractor developed the Scope of Services required to complete the 2017 WRMS project update; and

WHEREAS, the Water Authority wishes to expand the Scope of Services to include the 2017 WRMS project update; and

WHEREAS, the Water Authority has determined that services are needed for an additional one (1) year period; and

WHEREAS, the Water Authority wishes to increase the compensation amount to pay for the additional Scope of Services required to complete the 2017 WRMS project update; and

WHEREAS, the Contractor is agreeable to the additional one (1) year extension to the Original Agreement, the extension of Services and the increase in compensation.

NOW, THEREFORE, in consideration of the premises and mutual obligations herein, the parties hereto do mutually agree as follows:

1. Section 1 of the Original Agreement is hereby amended to include the following additional tasks set forth in Exhibit G, Scope of Services, which is attached hereto and incorporated herein as part of the Original Agreement.

2. Section 2 of the Original Agreement is hereby amended to read as follows:

**Time of Performance.** Services of the Contractor shall commence on May 17, 2010, and shall be undertaken and completed in such sequence as to assure their expeditious completion in light of the purposes of this Agreement; provided, however, that in any event, all of the Services required hereunder shall be completed by June 30, 2017.

3. Section 3.A. of the Original Agreement is hereby amended to read as follows:

**Compensation.** For performing the Services specified in Section 1 hereof, the Water Authority agrees to pay the Contractor up to the amount of **One Million Four Hundred One Thousand Six Hundred Eighteen and 00/100 Dollars (\$1,401,618.00)**, which amount includes any applicable gross receipts taxes and which amount shall constitute full and complete compensation for the Contractor's Services under this Agreement, including all expenditures made and expenses incurred by the Contractor in performing such Services.

4. Exhibit C, Project Budget, of the Original Agreement is hereby amended to include the amount of **Three Hundred Fifty-Two Thousand Four Hundred Sixty-Four and 00/100 Dollars (\$352,464.00)**, to be paid in accordance with Exhibit G – Cost Summary which is attached hereto and incorporated herein as part of the Original Agreement.

5. Except as herein expressly amended, the terms and conditions of the Original Agreement shall remain unchanged and shall continue in full force and effect unless there is a conflict between the terms and conditions of the Original Agreement and this Sixth Supplemental Agreement, in which event, the terms and conditions of this Sixth Supplemental Agreement shall control.

6. This Agreement shall not become effective or binding until approved by the Water Authority's Executive Director.

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IN WITNESS WHEREOF, the Water Authority and the Contractor have executed this Sixth Supplemental Agreement as of the date of the last signature entered below.

**ALBUQUERQUE BERNALILLO COUNTY      CONTRACTOR: INTERA, INC.**  
**WATER UTILITY AUTHORITY**

Approved By:

\_\_\_\_\_  
Mark S. Sanchez, Executive Director

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

\_\_\_\_\_  
John M. Stomp III, P.E.  
Chief Operating Officer

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

Reviewed by:

\_\_\_\_\_  
Charles W. Kolberg, General Counsel

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

By: \_\_\_\_\_

Print: \_\_\_\_\_

Title: \_\_\_\_\_

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

State Taxation and Revenue Department  
Taxpayer Identification No.:  
02-480923-00-3

Federal Taxpayer Identification No.  
743010638

## **EXHIBIT G**

### **Scope of Services**

#### **Introduction**

The Water Authority is in the midst of performing the decadal (2017) update to its Water Resources Management Strategy (WRMS). The update is based on principles first articulated in the 1997 WRMS, and subsequently brought forward and augmented by the 2007 WRMS update. The current update builds upon and adds to previous WRMS strategies by focusing on ongoing replenishment of the aquifer coupled with a long-term plan for ensuring groundwater sustainability. In addition, the 2017 WRMS update seeks to extend the planning horizon 100 years into the future, while at the same time contemplating the potential effects of climate change to water resources in the region.

An extensive amount of work has been completed over the last five years in support of the 2017 WRMS update by the Project Team, which consists of senior Water Authority staff, INTERA, and several other consultants. The Water Authority has developed a water budget model for simulation and planning of various supply and demand scenarios, in support of future water planning.

The Water Authority convened a Scientific Task Force (Task Force) to review and evaluate the development of the model. The Task Force consisted of representatives from the Corps of Engineers, the US Bureau of Reclamation, the New Mexico Interstate Stream Commission, the US Fish and Wildlife Service, and active and retired academic experts from the University of New Mexico. The Task Force included technical experts from a variety of fields including climate change, systems modeling, surface-water modeling, groundwater modeling, habitat management, river management, and economics. Feedback and comments from the Task Force gave rise to numerous improvements and enhancements needed to address issues raised by the Task Force. The updates requested have been completed and the Project Team continues to update the water budget model on a regular basis.

The Project Team continues to engage the Water Authority's Technical Customer Advisory Committee (TCAC) in its process on a regular basis. To date, the TCAC has provided input, advice, and guidance on demand projections, supply projections, an initial list of possible future water supply alternatives, and the decision analysis criteria that will be used by the Project Team to perform an initial ranking of the alternatives. The Project Team has and will continue to engage the TCAC in all aspects of the work throughout the life of the project.

A first draft of the major components of the water budget have been developed in the form of demand and supply projections. Supply projections include potential effects of climate change using data from the U.S. Bureau of Reclamation's West-Wide Climate Risk Assessment. An initial list of potential future water-supply alternatives has also been developed and is currently being evaluated based on ranking criteria developed by the Project Team in conjunction with the TCAC.

In addition, INTERA has been working on an economic module that will be used to evaluate relative costs of potential future water supply portfolios. The economic analysis will include developing a distinct series of annual costs for each of the supply portfolios and scenarios in the water budget model. The distinct series of costs will allow for an economic analysis of the relative costs for each of the alternative supply scenarios and current practice.

The following Tasks represent INTERA's proposed approach to continue supporting the Water Authority and its consultants with the ongoing development, design, evaluation, and communication of the 2017 WRMS.

### **Task 1. Scenario Development and Gap Analysis Evaluation**

Scenario Development describes the process of combining demand and supply projections into a set of scenarios, developing metrics for evaluation, and then predicting potential future supply gaps using the water budget model. While much of this work is expected to happen during calendar year 2015, a portion of it will extend into calendar 2016, including development of a summary white paper. Demand and supply projections were updated in calendar 2015 and will form the basis of the initial simulations using the water budget model to identify potential future water-supply gaps or ranges of gaps.

In addition during this Task, INTERA will work with the Project Team to develop methods to describe and quantify the nature and duration of potential supply gaps. This process will then inform Task 2 as we develop options and strategies to mitigate potential future supply gaps.

A third component of this task will be development of metrics with which to evaluate water-supply portfolios (to be developed under Task 2). These metrics will be used to evaluate the performance (including cost versus benefit) of various water supply portfolios with respect to meeting potential future supply gaps.

#### **Deliverables**

- 1. Facilitation of Project Team meetings, including agenda, meeting space, and presentation materials**
- 2. Presentation of technical content to the TCAC and facilitation of implementation of comments from the TCAC**
- 3. Draft White Paper on Scenario Development, Gap Analysis Evaluation, and Metrics**
- 4. Address one round of comments from the Project Team**
- 5. Address one round of comments from the TCAC**
- 6. Final White paper**

### **Task 2. Development of Options and Strategies**

Development of options and strategies to mitigate potential future water supply gaps will consist of the following steps:

- Development of rules and guidelines for building different types of water supply portfolios from alternatives using a variety of preferences (i.e. lowest carbon footprint, least cost, etc.)
- Development and analysis of relative costs for various alternatives and portfolios using the economic module that INTERA has developed

INTERA will facilitate development of rules and guidelines for building different types of water supply portfolios with the Project Team. This process will include development of specific and quantitative metrics with which to evaluate water-supply portfolio performance and allow

cost/benefit analysis of each water-supply portfolio. A key aspect of this process will be for INTERA to apply its economic module to both the alternatives and the resulting portfolios. The economic module continues to be improved and revised with the acquisition of additional cost data, as well revision of the regression relationships used to represent potential water-supply costs in the future.

#### **Deliverables**

- 1. Facilitation of Project Team meetings, including agenda, meeting space, and presentation materials**
- 2. Presentation of preliminary and final results to the TCAC and facilitation of implementation of comments from the TCAC**
- 3. Economic analyses of alternatives**
- 4. Economic analyses of portfolios**

#### **Task 3. Policy Development**

The WRMS policies from 2007 will be updated. Revised policies for 2017 will be driven by specific needs as identified by the scenarios and proposed water supply portfolios. Each policy will be developed to address a specific need that has been identified during the scenario development process. For example, if a specific source of supply is not currently available because of present-day administrative or legal constraints, then a policy will be developed that will provide a roadmap for the Water Authority to facilitate the necessary changes to access that source of supply. In addition, revised policies may be updated based on identified economic advantages of a specific alternative supply scenario. The water budget and economic analyses may also identify a particular long-term water supply acquisition plan that can be developed into a new policy and corresponding recommendations for the Water Authority to implement. In this manner, the policies that will be developed will provide a strategy for the Water Authority to meet its goal of providing a sustainable and resilient supply to its stakeholders.

#### **Deliverables**

- 1. Facilitation of Project Team meetings, including agenda, meeting space, and presentation materials**
- 2. Presentation of policy content to the TCAC and facilitation of implementation of comments from the TCAC**
- 3. Draft White Paper on Policy Development and Proposed Policies**
- 4. Address one round of comments from the Project Team**
- 5. Address one round of comments from the TCAC**
- 6. Final White paper**

#### **Task 4. Public Outreach**

A series of public meetings will be held beginning in June 2016 and continuing through August 2016. INTERA will provide support for public outreach including working with Water



Authority technical staff, public affairs staff, and public relations consultants to develop materials appropriate for public communication of all aspects of the WRMS 2017 update process, analyses, findings, and policies.

### **Deliverables**

- 1. Develop presentation materials for up to four (4) public meetings, based on technical analyses and content developed by the Project Team**

### **Task 5. TCAC and Board Meeting Support**

In addition to TCAC support as described in Tasks 1 – 3, additional TCAC support may be required. This may include preparation of additional written and presentation materials for the TCAC, focused meetings with individual TCAC members and/or the TCAC as a whole to facilitate understanding of particular WRMS issues, and/or additional time spent with the TCAC to help facilitate their understanding of the WRMS 2017 update process.

The 2016 work plan for the WRMS 2017 update calls for the Project Team to provide an update to the Water Authority Board four (4) times during 2016 (approximately quarterly). INTERA will work with the Project Team to develop these key Board presentations. The purpose of the first three (3) Board presentations will be status updates to the Board on Project Team progress with the WRMS 2017 Update, culminating in a final presentation of the WRMS 2017 update itself to the Board in the fall of 2016 for Board approval.

### **Deliverables**

- 1. TCAC support as needed including written and presentation materials**
- 2. Presentation material for three (3) update presentations to the Board, as well as one (1) final presentation of the final WRMS 2017 and its associated policies**

### **Task 6. Public-Domain Model**

Based on public comment and feedback, there has been a desire for an easy-to-use, read-only, public-domain version of the model to be developed and made available to the public. The development of the water budget model is currently ongoing, and developing a user-friendly, public-domain version of the model will be a significant effort. The public-domain version of the model will need to be carefully designed and built to ensure that it contains viable and realistic scenarios that are being considered by the Water Authority, and most importantly that proper error-trapping functions are in place to ensure that a user is not able to construct a scenario that is not physically and/or legally possible.

### **Deliverables**

- 1. A simplified public-domain version of the water budget model**

## **Task 7. Final Reporting**

A final report will be developed which includes material developed in a series of white papers which will cover each major topic of the WRMS. The final report will also include a synopsis of the public outreach process and feedback received as part of that process.

### **Deliverables**

- 1. Draft final report**
- 2. Address one round of comments from Water Authority staff**
- 3. Final report**

### **Schedule**

These activities will occur during calendar year 2016.

**EXHIBIT G**  
**Cost Summary**

<b>Task</b>	<b>Cost</b>
Task 1. Scenario Development and Gap Analysis	\$17,379
Task 2. Development of Options and Strategies	\$111,515
Task 3. Policy Development	\$21,474
Task 4. Public Outreach	\$31,718
Task 5. TCAC and Board Meeting Support	\$24,561
Task 6. Public-Domain Model	\$95,711
Task 7. Final Reporting	\$26,472
Subtotal	\$328,829
NMGRT (7.1875%)	\$23,635
<b>Total</b>	<b>\$352,464</b>