# City of Norman, OK



Municipal Building Council Chambers 201 West Gray Norman, OK 73069

# Master

## File Number: K-1516-139 AMD#1

File ID:	K-1516-139 AMD#1	Туре:	Contract	Status:	Consent Item
Version:	1	Reference:	Item 19	In Control:	City Council
Department:	Utilities Department	Cost:	\$1,204,470.00	File Created:	01/17/2018
File Name:	Groundwater Well Field	Dev. Project Ame	endment #1	Final Action:	
Title:	AMENDMENT NO. ONE TO CONTRACT K-1516-139: BY AND BETWEEN THE NORMAN UTILITIES AUTHORITY AND CAROLLO ENGINEERS, INC., INCREASING THE CONTRACT AMOUNT BY \$1,204,470 FOR A REVISED CONTRACT AMOUNT OF \$1,432,854 FOR THE GROUNDWATER WELL FIELD DEVELOPMENT PROJECT IN ASSOCIATION WITH THE FYE15 WATER WELLS AND SUPPLY LINES PROJECT.				
Notes:	ACTION NEEDED: Acting as the Norman Utillities Authority, motion to approve or reject Amendment No. One to Contract K-1516-139 with Carollo Engineers, Inc., increasing the contract amount by \$1,204,470 for a revised contract amount of \$1,432,854; and, if approved, authorize the execution thereof. ACTION TAKEN:				
				Agenda Date:	02/13/2018
				Agenda Number:	19
Attachments:	Amendment One K-1516-139, K-1516-139, Carollo PO				
Project Manager:	Chris Mattingly, Capital Projects Engineer				
Entered by:	chris.mattingly@norma	nok.gov		Effective Date:	
History of Legislative File					
Ver- Acting Body:	Date:	Action:	Sent To:	Due Date:	Return Result:

### Text of Legislative File K-1516-139 AMD#1

### Body

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**BACKGROUND**: In March 2012, the Norman Utilities Authority (NUA) approved Contract K-1112-114 with Carollo Engineers, Inc. for preparation of the <u>2060 Strategic Water Supply Plan</u> (the 2060 SWSP). The plan update was needed because the NUA was unable to supply sufficient potable water to meet peak demands during summer months and was concerned about probable regulatory changes affecting both our surface water and groundwater supplies.

The goal of the <u>2060 SWSP</u> was to strengthen our knowledge of potential short and long-term water supply source(s) for our community and begin implementation of a robust, water supply solution acceptable to the citizens of Norman. The 2060 SWSP Ad-Hoc Committee was appointed to ensure open and two-way dialogue with the community, to ensure the suggestions of the public are addressed, and to be able to communicate the objectives and conclusions of the <u>2060 SWSP</u> to the public.

Date:

Eight meetings were held with the <u>2060 SWSP</u> Ad-hoc Committee and six public meetings were held for public participation and input. Fourteen different potential water supply portfolios were developed, investigated and evaluated at these meetings. Each portfolio was developed to provide an annual average supply of 29 million gallons per day (MGD) in 2060 and a peak daily supply of 55.4 MGD in 2060. Ultimately, Resolution R-1314-146 was approved by the NUA on June 24, 2014 recommending Portfolio 14 for implementation; this portfolio included the following recommendations:

- 1. Continued use of Lake Thunderbird as a raw water supply source with treatment at an improved water treatment facility at the existing site (but with the current allocation reduced from 8.4 to 6.1 MGD of annual average supply based on a pending Bureau of Reclamation yield study);
- 2. Expanded water conservation practices ultimately resulting in additional annual average water supply savings of 1 MGD in 2060 through reduced water consumption;
- 3. Additional non-potable reuse ultimately resulting in additional annual average potable water supply savings of 0.8 MGD in 2060 (and reduced peak summertime demand of about 4.6 MGD by 2060);
- 4. Continued use of our current groundwater supply system of 36 wells and expanding the groundwater supply system by 2 MGD in the short term for a total of 8 MGD annual average supply capability;
- 5. The addition of treatment for arsenic and chromium 6 at a centralized facility increasing the groundwater annual average supply capacity from 8.0 to 10.1 MGD by bringing 12 inactive wells back on-line; and
- 6. Implementation of indirect potable reuse (IPR) over time by adding additional treatment at the Water Reclamation Facility (WRF) and discharging the highly treated effluent into Lake Thunderbird; raw water conveyance and water treatment expansions would be required.

The Fiscal Year Ending 2016 (FYE16) budget includes a capital improvement project known as the FYE 15 Water Wells and Supply Lines Project (WA0212). As noted in Item 4 above, this project was recommended as a part of the NUA approved <u>2060 Strategic Water Supply Plan</u> and was approved by Norman voters in 2015 as the first phase of system capacity improvements to increase the City of Norman water supply. Staff distributed Request for Proposal (RFP) 1516-6 on August 8, 2015 and fourteen (14) proposals were received on September 14, 2015.

The scope of RFP 1516-6 was generally to:

- 1. Study geologic conditions within the Garber Wellington aquifer, evaluate and propose the most cost effective well field development plan for Norman to achieve the 2 MGD of additional supply in the short term as recommended by the 2060 Strategic Water Supply Plan (see item 4 above),
- 2. Recommend, permit, and acquire sites and water rights for test wells and potential future production wells,
- 3. Recommend test well drilling and testing procedures to maximize water quantity and enhance water quality, adequately ascertain the potential well yield and water quality to enable selection of permanent production well sites that best satisfy long term production and water quality goals,
- 4. Consider the implications of pending (and potentially new) EPA rules concerning drinking water quality and evaluate and recommend the optimum location(s) of a future ground water treatment facility or facilities, including blending;
- 5. Provide design documents and construction assistance for the installation of test wells, production wells, well houses and transmission system improvements to convey potable water to customers.

In October 2015, the following consultants were selected to perform the tasks identified below:

- Carollo Engineers, Inc. of Oklahoma City, Oklahoma: Study geologic conditions within the Garber Wellington aquifer; recommend a well field development plan considering the likely location of a future groundwater treatment facility while optimizing future water transmission and distribution lines; water right acquisition; test well and production well design with associated construction administration.
- Cowan Group Engineering, LLC (Cowan) of Oklahoma City, Oklahoma: water rights permitting through the OWRB.
- Alan Plummer Associates, Inc. (APAI) of Oklahoma City, Oklahoma: update our city wide water distribution system model originally prepared in 2003 to include <u>all</u> waterlines; model calibration and recommendations for future improvements to enhance performance.

• APAI, Garver and Cardinal were tentatively selected to perform work associated with water transmission improvements once water well locations have been finalized.

On June 14, 2016 NUA approved Contract K-1516-139 in the amount of \$228,384 for Carollo Engineers to identify existing wells to reactivate through various blending opportunities; work with Association of Central Oklahoma Governments (ACOG) to review the existing groundwater model recently created by Oklahoma Water Resources Board; utilize the model and other techniques to determine suitable new well sites that will produce from the most prolific areas containing thick saturated sand zones; prepare bid package for drilling associated test wells and review all information to advise the City of Norman where the well field expansion should take place; and run several model iterations to determine most feasible location to construct future groundwater treatment and/or blending facility or facilities.

Carollo Engineers, Inc. has completed all of the aforementioned tasks and is ready to begin the next phase of the project. Through their groundbreaking work to directly measure gross alphas, Carollo successfully obtained approval from the Oklahoma Department of Environmental Quality (ODEQ) to place three (3) of Norman's existing water supply wells back into service. This alleviated the need to pursue additional blending scenarios at this point and saved significant capital costs.

Carollo and staff worked closely with ACOG to map water sand zones and identified a prioritized list of 45 potential test well sites to examine. Water well drilling prequalification documents were prepared and four (4) well drillers submitted their qualification packages on December 14, 2017. Three of four well drillers submitting packages met the minimum qualifications and will be eligible to bid on the test wells and production well completions. The next phase of the project is to select the test well sites to be investigated further, negotiate access agreements with land owners, drill up to 20 test wells, and if shown as a favorable site, complete up to six (6) production wells with a well house.

**Discussion**: Staff and Carollo have negotiated the work scope and cost of attached Amendment No. 1 to Contract K-1516-139. The proposed work scope is to have a base contract for six new production wells with pre-negotiated unit prices to add up to six additional production wells; it is estimated that 10 to 12 vertical wells will be required to meet the goal of adding an average of 2 million gallons per day of additional water supply. All of these wells will utilize the industry standard of vertical well drilling as done for all previous wells in our system. The additional wells would only be authorized if the proposed horizontal well, which could supply the equivalent of up to six vertical wells, does not prove to be feasible. The additional vertical well design and construction will not be completed if the horizontal well drilling option is selected.

The proposed amendment will have a base services amount of \$610,780 with itemized unit price tasks for additional services totaling \$593,690; the additional work will be completed only if authorized by NUA staff. The total value of the amendment (base plus additional services) is \$1,204,470. The amended contract scope includes Tasks 6 through 11 under Phase 2, as shown in Exhibit A, Scope of Work. The project schedule and associated design costs are shown in Attachments B and C. The original contract (Phase 1) included Tasks 1 through 5 and included all work through development of the test well program bid package. Phase 2, Tasks 6 through 11 is the Construction Management Support phase and will encompass production well design as well as construction administration and inspection as the new wells are completed.

The Fiscal Year Ending 2018 (FYE18) budget includes unencumbered funding of \$1,208,915 in Water Wells, Design (account 031-9345-462.62.01) for the FYE15 Water Wells and Supply Lines Project (WA0212), which is adequate to fund the contract.

**<u>RECOMMENDATION</u>**: Staff recommends approval of Amendment No. 1 to Contract K-1516-139 with Carollo Engineers, Inc. of Oklahoma City, Oklahoma, in the amount of \$1,204,470.