City of Broken Arrow

Minutes
Broken Arrow City Council
And
Broken Arrow Municipal Authority
Special Joint Meeting

Mayor Craig Thurmond
Vice Mayor Richard Carter
Councilor Mike Lester
Councilor Johnnie Parks
Councilor Scott Eudey

Tuesday, February 28, 2017 **Time 6:00 p.m.** **Public Safety Complex**
1101 North 6th Street
Broken Arrow, Oklahoma 74102

Special Joint Meeting of the
Broken Arrow City Council and Broken Arrow Municipal Authority

1. **Call to Order the Broken Arrow City Council**
   Mayor Craig Thurmond called the City Council meeting to order at approximately 6:00 p.m.

2. **Call to Order the Broken Arrow Municipal Authority**
   Chairman Craig Thurmond called the Municipal Authority meeting to order at approximately 6:00 p.m.

3. **Roll Call for the Broken Arrow City Council**
   Present: 5 - Craig Thurmond, Richard Carter, Mike Lester, Johnnie Parks, Scott Eudey

4. **Roll Call for the Broken Arrow Municipal Authority**
   Present: 5 - Craig Thurmond, Richard Carter, Mike Lester, Johnnie Parks, Scott Eudey

5. **Consideration of Consent Agenda**
   Mayor Thurmond asked if there were any items to be removed from the Agenda. There being none, he asked for a motion.

   Recusing himself Councilor Eudey left the room at approximately 6:00 p.m.

   MOTION: A motion was made by Mike Lester, seconded by Richard Carter.
   Move to approve the Consent Agenda
   The motion carried by the following vote:
   Aye: 4 - Johnnie Parks, Mike Lester, Richard Carter, Craig Thurmond
   Recused: 1 - Scott Eudey

A. 17-1888 Award the lowest responsible bid to Cook Consulting, LLC, and authorize execution of a

construction contract for 209th Street Lift Station and Force Main, Phase 1, in the amount of $615,850 (Project No. S.1608A), including the alternate for High Density Polyethylene (HDPE) Pipe

B. 17-1889 Award the lowest responsible bid to Cook Consulting, LLC, and authorization to execute a construction contract for 209th Street Lift Station and Force Main, Phase II, in the amount of $332,608.50 (Project No. S.1608B), including the alternate for High Density Polyethylene (HDPE) Pipe

Councilor Eudey returned to the room at approximately 6:02 p.m.

6. Consideration of Items Removed from Consent Agenda

There were no items removed from the Consent Agenda. No action was required or taken.

7. General Council and Authority Business

For ease of reference, the presentation of comments and questions are incorporated under each separate scenario and is not sequential.

A. 17-1887 Presentation, discussion, and study session on the Long-Term Water Supply Study Report

City Manager Michael Spurgeon introduced Operations Manager Kenny Schwab. Mr. Schwab explained that the City hired HDR several years ago to start the Long-Term Water Supply Project. HDR's responsibilities included predicting the quantity of water the City needed on an average day. Broken Arrow was recently using approximately 12 million gallons a day. Historically, on a peak day the City averaged just under 27 million gallons a day. HDR reviewed the City's water usage and projections through 2035. Mr. Schwab provided a timeline that noted the water supply history in Broken Arrow. On August 20, 1979, Broken Arrow entered into a 31-year agreement with Oklahoma Ordinance Works Authority (OOWA). The utilities included a 36-inch water line and 3 non-variable speed pumps. Each pump delivered 9 million gallons per day. He stated if each pump was pumping at its peak, the volumes would be at 27 million gallons a day. On January 1, 1982, Broken Arrow entered into its first day of operation, which was the start of the 31-year agreement. On February 16, 2004, the Council stated Broken Arrow was approaching the end of the 31-year agreement with OOWA. At that time, it established a Long-Range Water Supply Committee. The Committee was diverse and included residents of Broken Arrow. The purpose of the Committee was to determine if the City should stay with OOWA and extend the agreement, supplement water from another source, or utilize the existing water treatment plant. On March 6, 2006, the Council adopted the Committee's recommendation. The recommendation was to build a plant that could pump 15 to 20 million gallons per day, and supplement for peak usage. The Committee researched OOWA and Tulsa Metropolitan Utilities Authority (TMUA) as potential supplemental sources. On April 2, 2007, Broken Arrow initiated the agreement with HDR. The agreement was amended to start the Plan Development Report (PDR). On March 18, 2008, HDR presented the findings of the PDR to the Council. The City immediately moved forward with the implementation of the Verdigris River Water Treatment Plant and supplemental sources. On June 17, 2008, the request for design services was submitted.

On February 7, 2012, the City began a Public Construction Contract to build the water treatment plant. At this point, Broken Arrow had two supplemental connections with TMUA.

The first connection with TMUA was established in 2013, and connected to the 5-million-gallon tank on the North end of town. Broken Arrow began receiving water through that connection on September 24, 2013. On April 10, 2014, the water treatment plant went into operation. Mr. Schwab stated the City recently amended the Long-Term Water Supply Plan, which was the reason for HDR's presence at the meeting. He said that the City needed to determine the plan for the OOWA line, since it was still an asset. On August 5, 2016, Broken Arrow established a second connection with TMUA.

Mr. Schwab introduced Mr. Joel Cantwell, who was the Project Manager with HDR. Mr. Cantwell explained that he had been involved with the project since Broken Arrow established the agreement with HDR in 2006. The Long-Term Water Supply Plan was completed in 2015. He said that the initial plan had a limited scope, since the relationship with OOWA had been discontinued. HDR decided to continue using the Verdigris water supplies vs. going to the Grand River water supplies because it was determined to be less expensive to stay with the Verdigris water supplies. Mr. Cantwell stated that there were two takeaways from the previous presentation to the Council. One concern the Council had was having a strong reliance on Tulsa as a water source for the long-term future. The other concern was that the Council did not want the existing pipeline to remain idle. Based on these concerns, HDR developed an amendment to the plan entitled The Additional Water Supply Sources Study. Mr. Cantwell introduced Ms. Kristi Shaw, who was the Water Supply Planner. He stated that Ms. Shaw had expertise in this field and had led the Additional Water Supply Sources Study. Mr. Cantwell encouraged the Council to ask questions.

Ms. Shaw said that HDR originally had the precursor study of the Long-Term Water Supply Plan. Based on the concerns from the Council, HDR facilitated the Additional Water Supply Sources Study. The objectives of the study were to research the OOWA water supplies and the Grand water supplies to supplement alternatives that have previously been studied. The report provided capital improvements that would be necessary to integrate those water supplies to provide the delivery of 60 millions of gallons per day (MGD). The water demand projections thru 2060 identified a need of 25 MGD per average day. The peak water demand for 2060 was identified as 53 MGD. Ms. Shaw noted that 60 MGD was a conservative amount. She further explained that HDR had five alternative options, Zero through Four, that would meet water demands in 2060 with reliability. She said that in order to meet the average day demand, the City would need to rely on TMUA water supplies, in addition to depending on TMUA for peak or emergency situations. She noted that the City currently had 30 MGD from existing supplies. She also stated that 15 MGD could not be delivered from TMUA. The report captured the additional capital costs that would be necessary to deliver at that capacity.

Alternative Zero - The additional 30 MGD of supplemental water would need to come from the Verdigris River, which would include an expansion of the current water treatment plant to be able to treat that water. This option created necessity to obtain additional water rights from OWRB. The existing infrastructure could handle the plan, with additional modifications made at the water treatment plant. This would essentially look like the current supply portfolio. The capital cost of this option was $65.5 million.

Alternative One – This option consisted of the OOWA treated water supplies, essentially reinstating the previous system & relationship with OOWA for delivery of up to 30 MGD. The City would have to reinstate the 36-inch pipeline; and make improvements to pump the water back to Broken Arrow. The capital cost of this option was $43.8 million.
An inquiry was made by Councilor Eudey in regards to the quality of the water and if OOWA would have to come into compliance with how the City treats its water. Mr. Cantwell said that it was planned before that they would have to add chemicals at the plant prior to

combination with the Verdigris water supplies. He also wanted to point out the existing pipeline that was 21 miles long, and that the furthest segment was the issue. The pipeline manufacturer of that segment went out of business quickly, due to poor pipe quality. Mr. Cantwell said the City would have to replace 10 miles of the line to make it operational, to which he also confirmed for Councilor Lester that this particular segment is the same segment that experienced a blowout a couple of years back. He stated the additional 11 miles had a longer useful life, based on the manufacturer's history; however, the inside of the line had not been inspected. The cost was 20% of the replacement costs which included improvements and add cathodic protection on the line. Cathodic protection would stop any deterioration that had already taken place and the improvements would make it compatible with the new section of pipe. Councilor Parks asked about the unit cost of the treated water, which was to be brought up later during the annual cost slide. The question was then asked again by Councilor Lester during the cost slide presentation if HDR used today's cost or the costs that were currently being charged to other municipalities. Ms. Shaw explained that during the study, HDR reached out to the staff at OOWA and asked about the treated water rate. The rate that is in the report was what OOWA had provided.

Alternative Two – This option consisted of using the existing 36-inch diameter pipeline which would tie in to another five to six-mile extension connecting to the Grand River. With this option, Broken Arrow would receive water directly through contract with the Grand River Dam Authority (GRDA). The intake would be at the pump station on the Grand River, and the new line would carry it to the existing pipeline, assuming that the 10-mile segment was replaced. Additional chemical pre-treatment would need to occur prior to the water arriving at the Broken Arrow Water Treatment Plant. The unique piece to this alternative is that the water would come directly from the grand river where OOWA is out of the picture completely. This plan would require purchasing right-of-ways and easements for the line. The intake and the pump station were significant factors, costing $17.5 million. Another main factor was the extension of the City's Water Treatment Plant, which would support the delivery of 45 MGD. The capital cost of this option was $119.2 million.
Councilor Parks posed a question about not removing the 10 miles of pipeline, and inserting a smaller diameter polyethylene line inside the existing line. Mr. Cantwell responded that inserting a smaller diameter line would cause a decrease in capacity, and the required volumes would not be achieved. He stated the 36-inch line was necessary. Ms. Shaw said the possibility of using smaller diameter pipelines that could withstand high pressures was discussed, but it was found that the cost was considerable. An inquiry was made by Councilor Lester regarding existing easements in the area of the pipeline replacement. The City asked if the old line would need to be removed or if the new line could be laid parallel to it. The easement was 30-feet wide; however, the City was unsure if it was that wide throughout the entire line. Mayor Thurmond asked HDR about using pipe bursting. Mr. Schwab stated that due to all the repairs that had been done to that line pipe bursting could be problematic. Mr. Cantwell cautioned that pipe bursting would be more expensive. He stated sewer lines are often more successful with that method.

Alternative Three - This option included the Grand River water supplies, in which Broken Arrow would receive 15 MGD, while another 15 MGD would go to a partner. This means that another 15 MGD would be needed from the Verdigris water supplies. The most significant cost of this option was the pipeline. The partner would go in 50/50 to reduce the cost. The capital cost of this option was $92 million. Councilor Lester conveyed that from his perspective, providing for the well-being of our community was better served by having 2 independent water sources rather than a partner, in the long haul.

Alternative Four – This was a combination with Alternative One that consisted of the OOWA water supplies and involvement of another partner. This particular option is different

in that there would be no expanding of the existing treatment plant due to getting 30 MGD from OOWA. HDR researched the partner and determined there could be a benefit of sharing the construction costs through a partnership arrangement. If Broken Arrow sold some of those resources at a later time, it would produce a revenue source for the City. The capital cost of this option was $50.8 million.

Mrs. Shaw presented a summarized graph showing the Capital Cost Comparison and the Annual Cost Comparison for Alternatives Zero through Four. Mr. Cantwell stated that the annual costs shown on the graphs could be misleading, since they encompassed the cost of all supplies used to the maximum. He stated that 15 MGD from TMUA would have an annual cost of $19 million, while 30 MGD from OOWA had an annual cost is $22 million. The City stated that TMUA could be used for emergency use only. Councilor Parks brought up the history with the North Side Treatment Plant in Tulsa. He stated that if the chemical they were shipping leaked into the river, it would leave Broken Arrow without water for 45 days. Ms. Shaw indicated that all the options, except the OOWA treatment water option, included an expansion to the existing basins. She stated that the proposed water reservoir would hold 1.5 billion gallons of water. The reservoir would store emergency water if there was a spill on the river or if a drought occurred. The reservoir and the two existing water basins would provide Broken Arrow with water for six weeks.

Councilor Lester asked about the graph that reflected the higher cost was from the TMUA water supplies. Ms. Shaw responded that it costs approximately $19 million per year. Councilor Lester stated that if an option was chosen to acquire water from the Grand or Verdigris water supplies, the City would hardly incur those costs from TMUA. Ms. Shaw responded that the annual costs would usually decrease; however, the plan was spread through 2060, and considered the peak demand. HDR constructed all the plans in this manner so that the City could compare them evenly. Ms. Shaw stated that if the City installed the additional reservoir, it could be used for peak times as well.

Councilor Parks inquired about the water treatment costs of the Grand and Verdigris water supplies. Mr. Cantwell responded that HDR used a lower treatment cost for the Grand water supplies, since it was a higher quality of water. He stated that in 2015 a sample test on the water supplies from Grand, Tenkiller, and Verdigris was performed. The treatability of the samples was included in the report. Determination was made that the Verdigris water supplies had the lowest quality water, the Grand had the best quality, and Tenkiller varied, but at times was better than the Grand. Mr. Cantwell explained that if Tenkiller was used there would be a cost increase, and if a drought occurred there would be no water to utilize.

Ms. Shaw explained that Alternative Zero had the cheapest option on a unit cost basis, next in line was Alternative Three. Alternative One was the most expensive option. Ms. Shaw presented the cumulative cash flow comparison and analysis. Mr. Cantwell stated that the charts were meeting the City's average annual demand, and did not account for peak times. He explained that the Verdigris option started to separate itself over time, since the City would not have to pay to purchase water. Another option that began to separate itself was when a partner was involved with the Grand water supplies. This option would offset costs over time.

Councilor Eudey observed that the thought process needed to be both in terms of numbers and in terms of wisdom, as far as committing the City to a single source. HDR created a matrix of non-economic criteria after having a discussion with TMUA, OOWA, and GRDA. The criteria included confidence, reliability, sustainability, legal issues, flexibility in operations, unit costs, total project costs, energy intensity, schedule and time frame, readiness of being able to bring the water supply online, ownership, quality of water, and the potential

of revenue generation. HDR provided scoring where (+) indicated that a particular water supply would be favorable, (0) would be neutral, and (-) would be if there was a setback, or reliability and quality of water would be an issue. It was suggested this would be a good place for the Council to get involved to provide feedback, possibly through a workshop type setting or to even do weighting, which was not done. Mrs. Shaw stated Alternative Two and Alternative Three appeared to be the most favorable from a non-economic perspective. Mayor Thurmond stated that reliability should be heavily weighted, especially with a having second source of water. Councilor Parks mentioned most communities don't have this issue, but having an alternative was favorable to him.

Ms. Shaw reviewed the conclusions from the study. Alternative Zero was the most economical and had the lowest cost and allows efficient delivery of treatment of supplies. Alternative Three had the second lowest cost. It provided some cost share opportunities for regional benefit, and it improved treatment efficiencies at the Water Treatment Plant since the Grand water quality was good. This option had the lowest annual cost for treatment. It also diversified the City's water supply portfolio to include water supplies from the Grand River. Mrs. Shaw stated that HDR determined the drought of record was staggered, so it would not happen at the same time on the Verdigris as it would on the Grand River. Since the drought of record occurred at slightly different times, if the future mimics that, the City could bring on supplies from the Grand if a drought affected the Verdigris.

HDR reviewed the next steps that would need to occur to start the project. The first step would be to coordinate with resources and agencies for water rights. The City would need to request full authorization and full use of existing permits on the Verdigris from OWRB. The second step would be to request a new water rights up to 24,000 feet a year from OWRB on the Verdigris. The City would also need to prepare a water rights application for the Grand water supplies up to 30 MGD. Mr. Shaw stated that it was also important to reach out and look for partnership opportunities that would be mutually beneficial to Broken Arrow. The pump station and additional infrastructure would need to be installed to deliver up to 20 MGD from TMUA, which would be used primarily for emergency and peak times. She said that the current system could provide up to 9 MGD. The cost to upgrade to 20 MGD would be around $4 million for infrastructure costs. HDR suggested that the City should begin the process of acquiring land for the reservoir site through lease or purchase.

Mr. Spurgeon was asked if he had discussed the options on cost vs. timeline. Mr. Spurgeon responded that he had reviewed the options, and that part of the $140 million dollars could be used for infrastructure right now. Mr. Spurgeon also explained that the project had started in order to meet the peak demands as the City gets closer to 2060. He stated that the City was trying to determine what option it would like to move forward with, and when it would need to be in place. Mr. Spurgeon said the City had a lot of debt at the moment with the current projects, and that he would like to implement the option at a time when it would not affect the rate payers so harshly.

Mr. Kenneth Schwab stated the five-year CIP program had been implemented, and that $140 million was associated with water and wastewater, and $9 million was associated with OOWA if the Council decided that the 36-inch pipeline asset would be used, which was why $9 million had been allocated for improvements on the old OOWA line. Mr. Schwab stated the next buildup of the plant would be around 2035. Some of the improvements would not take place until future years. HDR anticipated that the capital and operational costs would weigh heavily on the Council's decisions, and not solely on the economics of the option. Mr. Spurgeon stated notes would be taken from the meeting and a recommendation put together. An inquiry was made to the City about having additional funding for the plant expansion. The City responded that the plant expansion had funding in the five-year section, which

included to expand the plate settlers to boost the capacity from 20 MGD to 30 MGD. The City stated that this item was first on the list. The design was in process, and the vetting of contractors had begun. It was determined that the City could acquire 20 MGD from TMUA, and with the plant expansion the MGD would increase by 10, which would allow the City to get into the late 2020's.

Councilor Eudey asked about the length of time it would take to repair the 36-inch line. Mr. Cantwell responded and said that it would take two to three years, and it would take approximately 5 years to build the additional six miles of pipeline. Mr. Spurgeon stated that once the Council determined what option to move forward with, the citizen cost per 1,000 gallons of water could be calculated. If an option was decided on, the costs could be provided later this summer.

The Council members and staff stated that HDR had done a great job on developing the options. There was not an inexpensive option to address providing water to the community.

HDR was also thanked for their presentation, materials, and knowledge provided at the meeting. The City stated that once an option is decided upon, it will start making the improvements immediately with the five-year CIP plan.

8. Remarks and Inquiries by Governing Body Members

Remarks were given in Section 7, by the Governing Body Members.

9. Remarks by City Manager

Mr. Michael Spurgeon thanked everyone for their time and attendance to the meeting.

10. Adjournment of the Broken Arrow City Council

Council Member entertained a motion to adjourn Broken Arrow City Council.

MOTION: A motion was made by Mike Lester, seconded by Scott Eudey.
Move to adjourn
The motion carried by the following vote:
Scott Eudey, Johnnie Parks, Mike Lester, Richard Carter, Craig Thurmond

11. Adjournment of the Broken Arrow Municipal Authority

Council Member entertained a motion to adjourn Broken Arrow Municipal Authority.
The joint meeting adjourned at approximately 7:28 p.m.

MOTION: A motion was made by Mike Lester, seconded by Scott Eudey.
Move to adjourn
The motion carried by the following vote:
Scott Eudey, Johnnie Parks, Mike Lester, Richard Carter, Craig Thurmond

Attest:

_____ _____

Mayor City Clerk