CITY COUNCIL STUDY SESSION MINUTES

August 16, 2016

The City Council of the City of Norman, Cleveland County, State of Oklahoma, met in a Study Session at 5:30 p.m. in the Municipal Building Conference Room on the 16th day of August, 2016, and notice and agenda of the meeting were posted at the Municipal Building at 201 West Gray, and the Norman Public Library at 225 North Webster 24 hours prior to the beginning of the meeting.

PRESENT:	Councilmembers Allison, Castleberry, Chappell, Clark, Heiple, Holman, Karjala, Mayor Miller
ABSENT:	Councilmember Hickman

Item 1, being:

OVERVIEW PRESENTATION OF THE 2060 STRATEGIC WATER SUPPLY PLAN INCLUDING FUTURE WATER RELATED CAPITAL IMPROVEMENT PROJECTS.

Mr. Ken Komiske, Director of Utilities, said the water plan is updated every ten to fifteen years and is a living document. He highlighted the 2060 Strategic Water Supply Plan (SWSP) and said water use already exceeds local supply that includes Lake Thunderbird, the Garber-Wellington Aquifer, and intermittent purchases of treated water from Oklahoma City (OKC). He said the Norman Utilities Authority (NUA) is currently unable to supply sufficient potable water to meet peak demands during summer months and is concerned about probable changes affecting both our surface water and groundwater supplies.

The goals and objectives of the 2060 SWSP include strengthening our knowledge of potential short and long-term water supply sources for our community and beginning implementation of a robust water supply solution acceptable to the citizens of Norman.

Mr. Komiske said in 2012 the City reviewed the 2001 SWSP and found there had been a few changes, i.e., the arsenic rule that eliminated 15 water wells; Chromium VI limits; additional ground water rules; aquifer yield; Lake Thunderbird Safe Yield; reuse regulations; conservation successes; technological improvements; and partnering with regional projects.

No single supply is perfect and although Lake Thunderbird is a very large body of water it is a finite source and water wells are not infinite either. The NUA appointed citizens to the 2060 SWSP Ad-Hoc Committee to facilitate open and two-way dialogue between Carollo, Staff, and the community. Eight (8) meetings were held by the 2060 SWSP Ad-Hoc Committee and five (5) public meetings were held for public participation and input. Fourteen (14) different portfolios were developed to provide an annual average supply of 29.1 million gallons per day (mgd) in 2060 and a peak daily supply of 55.4 mgd in 2060, investigated, and evaluated with public input at these meetings.

Water supply options considered included existing and new sources.

Existing sources: Lake Thunderbird (at firm yield); Garber Wellington Aquifer Wells (with treatment); intermittent purchases of treated water from OKC (wholesale); and conservation and reuse.

New local sources: additional conservation; direct non-potable reuse; Lake Thunderbird augmentation (indirect potable reuse); stormwater capture and reuse; Canadian River diversion; capture Lake Thunderbird spillage; and dredging Lake Thunderbird.

New regional sources: co-owner with OKC for southeast Oklahoma treated water; co-owner with OKC for southeast Oklahoma raw water; Scissortail Reservoir; Parker Reservoir; and Kaw Lake.

Mr. Komiske said after input from the Steering Committee, Council, and the public the two portfolios that best meet Norman's criteria for water supply are Portfolios 13 and 14 and highlighted the portfolios as follows:

> **Portfolio 13** Includes a partnership with OKC as a co-owner in the construction of transmission improvements to import raw water from southeastern Oklahoma to Lake Stanley Draper, but contingent on OKC projects moving forward. Ultimately, Norman would utilize 13.1 mgd of raw water supply and convey to Norman for treatment and distribution; raw water conveyance and water treatment plant expansions would be required. It involves building a parallel pipeline from southeast Oklahoma to be treated at Norman's Water Treatment Facility (WTF). The capitals costs will be approximately $340 million and operations and maintenance (O&M) will be approximately $23 million per year.
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> **Portfolio 14**: Local control over sources and includes expanding our groundwater supply system by 2 mgd in the short term but ultimately treating this new supply for arsenic and Chromium 6 at a centralized facility with a total capacity of 10.1 mgd. Additionally, indirect potable reuse (IPR) would be implemented 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. There are discharge permitting uncertainties; efficient use of water resources; and greater phasing potential - the City can phase in the construction of the wells. Mr. Komiske said since Norman shares Lake Thunderbird with Del City and Midwest City; therefore, both would need to be on board with discharging effluent into Lake Thunderbird and are at this time. The capital costs will be approximately $270 million and O&M will be approximately $22 million per year.

Mr. Komiske said Portfolio 14 seemed to be the best overall option for Norman. He said both portfolios are capable of meeting Norman's long term supply needs, but there was concern regarding potential risk of having a long pipeline providing a majority of the water supply so that was a slight factor in favor of Portfolio 14. He said Portfolio 14 makes full use of effluent from the WRF versus wasting a valuable resource by discharging it to North Canadian River; it can be phased in with new wells and phased capacity for Lake Thunderbird augmentation; it has lower capital costs and slightly lower operations and maintenance (O&M) cost; it meets environmental stewardship goals better by having local management; and it is more consistent with community values.

Portfolio 14 would involve taking water from the WRF, pumping that water over the hill into the Dave Blue Creek tributary, then pumping the water into Lake Thunderbird, and finally pumping the water out of Lake Thunderbird to a water treatment facility to be reintroduced into the community. Mr. Komiske said this type of water reuse is not allowed in the State yet, but could be a possibility in the future. He said there is a lot of support for water reuse at the State level and public sentiment is changing from a disposal mentality to a recycling mentality. There is a trend of moving away from seasonal non-potable uses to potable reuse, which would consist of treating effluent to augment water supplies then using that water as part of the potable supply. Indirect Potable Reuse (IPR) is becoming more commonplace and two Oklahoma communities have included IPR in their water supply analyses. He said Norman's WRF will need to add additional treatment processes to treat water for pharmaceuticals and personal care products, which are not currently regulated but are contaminates of concern that may be regulated in the future.

Councilmember Clark asked the timeline for regulations on water reuse and Mr. Komiske said it is a long process, but guessed it would be around 2019. Councilmember Allison said a lot of citizens seem to be against water reuse and asked why and Mr. Komiske said mainly due to pharmaceuticals, pesticides, and herbicides. He said that stuff is already in Lake Thunderbird, but it is good to be aware of it, concerned about it, and knowing about it helps with the treatment of it. He said non-potable water is currently being used on the golf course, but its use is very restricted.

Mr. Komiske said because of the new trend for water reuse the Wastewater Treatment Plant is now being called the Water Reclamation Facility. He said cities all over the country are changing the names of their facilities moving away from the word "sewer." He said reuse is simply cities reclaiming their water and considering it a renewable resource.

Mr. Komiske said the state just completed the Oklahoma Comprehensive Water Plan (OCWP) giving cities tasks to meet and one of the top tasks is to develop and evaluate supply alternatives so the City of Norman is tying their 2060 SWSP into the state plan. He said Oklahoma is very forward thinking with a goal of consuming no more fresh water in 2020 than they have in 2012 and the only way to do that is through water reuse.

The City of Norman puts 11 million gallons of water per day (MGD) back into Lake Thunderbird and someone else gets to use it so why not look at reuse. He said reuse can include landscaping irrigation, surface water augmentation, groundwater augmentation, direct potable use, and other non-potable uses. The biggest bang for the buck would be groundwater augmentation or direct potable use. Eight years ago the City started curbside recycling with 45% participation and today there is 90% participation so recycling is really a thought process and that is what water reuse would become.

In January 2015, voters approved a water rate increase and in August 2016, new connection fees were put into place providing funding for the Water Treatment Facility regulatory, water quality, and safety upgrades that include low lift pumping; ozone contactor w/diffusers; ozone feed system and building; biofiltration upgrade; UV system; residential handling improvements; chemical feed improvements; rehab pump station; maintenance and storage building; existing building lighting rehabilitation; blending wells; land purchase; and waterline replacements.

Mr. Komiske said a portion of Phase II of the Water Treatment Facility upgrades include water rights application; temporary access agreements; property purchase; distribution system improvements; test

well design; quality testing; production well design; oversight drilling; and geology review for horizontal well. Norman has 31 operating wells and 50 total wells, but some are not used due to arsenic so the City needs to find an economic way to treat this water at a single location using existing wells, new wells, and installing distribution pipes where needed.

Mayor Miller asked Mr. Komiske to explain the advantages of drilling a horizontal well and Mr. Komiske said the City has a really tight aquifer that does not release a lot of water. He said a good well produces 200 gallons of water per minute at a 600 foot depth. The aquifer is made up of shale and sand seams (long paths of sand). He said the City would find a sand seam and follow that seam horizontally, which could allow the City to obtain three to four times the volume of water.

Mr. Komiske said the City of Norman's 50 year mortgage on the Lake Thunderbird is paid off, but that does not mean it belongs to Norman, it is still owned by the federal government and the City has to pay the Central Oklahoma Master Conservancy District (COMCD) for maintenance and infrastructure.

Councilmember Castleberry said if Lake Thunderbird is owned by the Bureau of Reclamation (BOR) and managed by COMCD why does Norman have to clean the water? Mr. Komiske said because Lake Thunderbird is in our city limits and we drink from it making the City partially responsible. He said this agreement has worked well for years and Norman has a 25 year contract with COMCD for use of the reservoir, which is coming up for renewal.

Mr. Komiske said the BOR has stated they would allow the City to use water from the flood pool, which is currently being released daily for flood control purposes. The COMCD always wants the flood pool empty in anticipation of the next rain, but BOR is working with COMCD on a contract to allow Norman to use the water from the flood pool, which would not count against Norman's allocation from Lake Thunderbird. He said if this happens, the flood pool will be an extra source of water for Norman.

Mr. Komiske said there are approximately 85 reservoirs in Oklahoma that are listed as a sensitive water supply (SWS) meaning they are primarily used for drinking purposes so there can be zero discharge. Cities can apply for sensitive water reuse (SWS-R) with the BOR, which basically states that cities are going to put highly treated water back into the reservoir. COMCD is paying for a Reuse Pilot Project Plan to determine the pros and cons of reuse. He said Midwest City and Del City are not as excited about releasing highly treated effluent into Lake Thunderbird because they do not have the same water needs as Norman and neither community uses their full allocation and have agreements to sell some of their allocation to the City of Norman.

Councilmember Chappel asked if the City is trying to move away from purchasing water from OKC and Mr. Komiske said yes, but Norman appreciates having that option.

Councilmember Allison asked what it would cost for improvements needed for reuse and Mr. Komiske said approximately $30 million.

Mayor Miller asked if there are any implications of reuse for cities downstream and Mr. Komiske said since this has never been done before, it is hard to determine the effect on cities downstream; however, the BOR does not seem to have an issue since the City would be treating the water.

Items submitted for the record

1. Text File R-1314-146 dated June 29, 2014, by Kathryn Walker, Assistant City Attorney, with Resolution R-1314-146 and Norman Utilities Authority – 2060 Strategic Water Supply Plan Executive Summary
2. PowerPoint presentation entitled, "City of Norman Water Supply Plan," by Ken Komiske, Director of Utilities, dated August 2016

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The meeting adjourned at 6:34 p.m.

ATTEST:

City Clerk

Mayor

CITY OF NORMAN CORPORATE SEAL OKLAHOMA