

CITY OF NORMAN, OK AIM NORMAN COMPREHENSIVE PLAN WATER/WASTEWATER SUBCOMMITTEE

Development Center, Room B, 225 N. Webster Ave., Norman, OK 73069
Friday, August 30, 2024 at 9:00 AM

MINUTES

The AIM Norman Comprehensive Plan Water/Wastewater Sub-Committee of the City of Norman, Cleveland County, State of Oklahoma, met in Regular Session in Conference Room B at the Development Center, on the 30th day of August, 2024, at 9:00 a.m., and notice of the agenda of the meeting were posted at the Norman Municipal Building at 201 West Gray, Development Center at 225 N. Webster and on the City website at least 24 hours prior to the beginning of the meeting.

CALL TO ORDER

Chair Dan Bergey called the meeting to order at 9:02 am.

Present

Dan Bergey, Chair
Kyle Arthur
Mark Daniels
Doris Kupfer
Karen Goodchild
Dr. David Sabatini
Bill Scanlon
James Chappel (Alternate)

Absent

Hossein Farzaneh
Dr. Robert Knox (Alternate)

Guests Present

Inger Giuffrida, AIM Steering Committee Co-Chair
Amanda Nairn, AIM Steering Committee Member

Consultants

Michael "Cole" Niblett, Garver
Michael Nguyen, Garver

Staff

Chris Mattingly, Utilities Director
Nathan Madenwald, Utilities Engineer
Peter Wolbach, Staff Engineer
Jerry Gates, Assistant Environmental Services Coordinator
Gay Webb, Administrative Technician

Chair Dan Bergey welcomed everyone to the meeting.

MINUTES

1. CONSIDERATION OF APPROVAL, REJECTION, AMENDMENT, AND/OR POSTPONEMENT OF THE MINUTES AS FOLLOWS:

AIM NORMAN COMPREHENSIVE PLAN WATER/WASTEWATER SUB-COMMITTEE MEETING MINUTES OF JULY 12, 2024.

Karen Goodchild requested additional discussion on the automated meter reading infrastructure program with respect to how it would impact residents with private wells.

Doris Kupfer requested the criteria scoring results from the 2060 Strategic Water Supply Plan (2060 SWSP), as the 2060 SWSP Water Supply Options were discussed in the previous July 12th, 2024 AIM Norman Comprehensive Plan Water/Wastewater Sub-Committee. Minutes amended to strike:

Members will receive a summary of how the 2060 SWSP portfolios were scored, scoring criteria examples, and estimated capital and operating costs. At a future meeting, the committee will decide how they want to select and rank water supply options.

Motion by Mark Daniels to approve minutes as amended July 12, 2024, AIM Norman Comprehensive Plan Water/Wastewater Sub-Committee meeting minutes, Second by Doris Kupfer.

The motion passed with a vote of 5 - 1. Karen Goodchild opposed.

DISCUSSION & POSSIBLE ACTION ITEMS

2. DISCUSSION ON MEETING WITH OKLAHOMA CITY.

Dan Bergey discussed events from the Water/Wastewater Sub-Committee meetings with Oklahoma City Utilities (OKC) on July 12, 2024.

Generally, the outcome of the OKC meeting was positive as OKC was receptive to providing additional water to meet Norman's needs in the future

This meeting confirmed that additional water supply from OKC is a viable option.

OKC is wholesaling water to over twice the immediate population they serve, which indicates that water sales are a critical revenue-generating tool for OKC. This results in OKC being incentivized to provide consistent supply to their large customers. OKC is also continuing to develop their large water supply portfolio with geographically diverse surface water sources within the State of Oklahoma. This diversity increases drought resiliency.

In the event Norman proceeds with additional OKC water supply, Norman would need to adopt the OKC Water Conservation Plan, which is less stringent than the existing Norman Drought Contingency Plan.

Doris asked how a contract for additional water supply from OKC to Norman would be structured.

Nathan Madenwald notes that OKC will not allow an on-demand contract due to usage volatility. Additionally, a water supply contract already exists between OKC and Norman.

Questions were asked regarding its duration. Nathan Madenwald reviewed the agreement and the current agreement was set for 10 years. This was due to Norman's request with this supply being an interim option per the 2060 Strategic Water Supply Plan and wasn't a requirement of OKC.

A copy of the existing OKC-Norman water supply contract will be distributed to the Sub-Committee Members so they may become familiar with the terms of municipal water supply contracts.

Furthermore, if receiving raw water instead of treated water from OKC is selected, the contract would have different constraints, which may affect terms, including costs. However, Nathan Madenwald noted that the rate for raw water was approximately \$0.50 less than treated water so it would make more sense to purchase treated water since we couldn't treat the at that cost difference.

Doris asked if OKC will be able to supply up to 11 million gallons per day (MGD).

OKC is currently developing supply and cost projections, but it is expected that OKC will have ample future supply as their holdings exceed their usage and their supply portfolio continues to grow. The results of OKC's projections are expected in September 2024.

David Sabatini asked how Norman currently gets water from OKC and how many connections there are.

Norman currently receives approximately 1 MGD of treated water from OKC. There is a single connection for this supply located in North Norman, which is connected directly to the distribution system. The water chemistry of OKC's treated water is compatible with Norman's distribution system since both systems use chloramines.

With respect to future water supply from OKC, additional connections from OKC to the Norman water distribution system would be necessary for treated water supply. OKC has large transmission mains on SE 164th Street that would be the most efficient option from a conveyance perspective.

3. DISCUSSION ON MEETING WITH OKLAHOMA WATER RESOURCES BOARD.

The Sub-Committee moved on to discussing events from the Oklahoma Water Resources Board (OWRB) meeting with the Sub-Committee with regard to water rights on July 12, 2024.

With respect to augmenting Lake Thunderbird with any source of additional surface water supply, there are not clear legal mechanisms that would allow Norman to "own" the additional water added to Lake Thunderbird.

Kyle explained that the current monthly firm yield of Lake Thunderbird is less than the amount currently being withdrawn. This impacts augmentation plans, as the original

agreement between Del City, Midwest City, Norman, and the Central Oklahoma Master Conservancy District (COMCD) was based on a firm yield of 21,000 acre-ft. However, the most recent firm yield of Lake Thunderbird was 12,700 acre-ft. This deficit in the firm yield could negatively impact Norman's pursuit of ownership for waters augmenting Lake Thunderbird.

Doris asked if Norman could not claim ownership of an augmented water supply in Lake Thunderbird, could Norman develop additional wells to reduce reliance on additional water from Lake Thunderbird or from OKC.

Expanding groundwater usage is a possibility, as Norman currently has groundwater rights for up to 10 billion gallons per year (BGY), but is currently using only 2.5 BGY from 43 wells. Norman could potentially double the number of active wells; however, significant operational challenges would be expected. These challenges include drawdown issues, expanded routine maintenance requirements, and implementing compliance measures for future groundwater regulations. The decisions of this subcommittee will impact future well development.

Doris asked if Direct Potable Reuse (DPR) could circumvent the political and legal challenges faced by augmenting the raw water supply at Lake Thunderbird through Indirect Potable Reuse (IPR).

While DPR would circumvent challenges arising from augmenting Lake Thunderbird, there are currently no regulations for DPR in Oklahoma, which makes approval from the Oklahoma Department of Environmental Quality (ODEQ) to proceed with DPR highly unlikely. However, IPR does have regulations in Oklahoma that are listed in the Oklahoma Administrative Codes, Title 252, Chapter 628.

4. DISCUSSION AND POSSIBLE ACTION ON WASTEWATER TREATMENT AND CONVEYANCE ALTERNATIVES AND ASSOCIATED COSTS.

Cole begins with wastewater treatment and conveyance by explaining that the current development and reserve areas, as of July 12, 2024, will extend into new drainage basins.

Cole explained that extending the wastewater collection system to new drainage basins is significant because these basins will require additional lift stations and/or a new water reclamation facility (WRF). The presentation showed three potential new WRF locations and two potential new lift station locations overlaid on the current version of the AIM land-use map. A preliminary summary of costs for the Alternatives was presented.

Mark Daniels stated that he would like to see the easement costs that were accounted for in the presented cost summaries. Further discussion ensued regarding the cost metric that was used to estimate the costs for new lines. Garver utilized \$25 per inch diameter per linear foot which was thought to be conservative and would account for easements.

The amount of additional treatment and conveyance were developed from the finalized population projections, which predicts average daily wastewater flows in 2045 to be 17.8 MGD, including a 10% reserve across all wastewater basins. This is less than the 21.5 MGD projection from the last master plan. Chris stated that efforts of the Sewer

Maintenance Plan to reduce infiltration and inflow (I/I) likely contributed to the reduction in future wastewater conveyance needs.

Cole discussed the facility upgrades required at the existing WRF to treat future wastewater flows.

There are several upgrades required to increase capacity at the existing WRF for future wastewater flows. All of the items bulleted below would need to be upgraded in an existing WRF buildout.

- Gravity Thickeners
- Primary Clarifiers
- Peak Flow Basins
- Grit Removal System

Cole went on to discuss estimated wastewater flow splits if a new WRF was created

- Existing WRF – 11 MGD
- New WRF – 7 MGD

A conceptual rendering of a new 7 MGD WRF with equalization basins was shown. The rendering included a larger footprint for future expansion to 7.5 MGD and 10 MGD.

Cole continues discussion on conveyance.

The capacity of the wastewater collection system is a primary driver for conveyance changes. As Norman grows east, additional lift stations will be required to convey wastewater from northeast Norman to the existing WRF. This would include one additional lift station in northeast Norman to convey wastewater over a southern ridge, and another additional lift station to then convey the flow west to the existing WRF.

If a new WRF was constructed on the northeast side of Norman, an additional lift station would need to be constructed to convey flows to the new WRF. The northeast WRF location would then need to convey treated discharge west to the Canadian River.

If a new WRF was constructed on the southeast side of Norman, an additional lift station would be required to convey flows from northeast Norman to the new WRF in the south. The southeast WRF location would then need to convey treated discharge south to the Canadian River.

A Sub-Committee member asked what challenges Norman would face implementing IPR.

Cole mentioned that the other municipal partners receiving water from Lake Thunderbird don't need additional water at this time, and they may not have the same need to augment Lake Thunderbird as a result of that. They are also decision makers in the Lake's water supply, so their approval to implement IPR is important.

As regulations exist for IPR, there is a regulatory pathway for implementation. However, this would require changing the Sensitive Water Supply (SWS) designation Lake

Thunderbird currently has to Sensitive Water Supply Reuse (SWS-R). The request for this change in designation would need to originate from the COMCD. The COMCD board also contains individuals from partnered municipalities, which reiterates that approval from COMCD partnered municipalities would be required to implement IPR. If COMCD requested the designation and approval was given, the next challenge would be determining ownership of the water used to augment the lake. Despite the challenges, IPR is still considered a viable alternative to augmenting future water supply as it is the most drought tolerant model, aside from DPR.

5. DISCUSSION AND POSSIBLE ACTION ON POTABLE WATER REUSE ALTERNATIVES AND ASSOCIATED COSTS.
6. DISCUSSION AND POSSIBLE ACTION ON WATER SUPPLY ALTERNATIVES AND ASSOCIATED COSTS.

Cole moved to Item 6 on the agenda and discussed Item 5 as a possible water supply alternative.

The 2045 water supply gap is 12 MGD more than what is currently used. It was shown that each of the water supply options discussed have different projected yields. Only receiving additional water supply from OKC, Scissortail Reservoir, or Parker Reservoir would cover the projected 12 MGD supply gap as a single additional water supply source.

Cole then presented the estimated capital costs of implementing the alternatives with a new in-basin reservoir, Lake Thunderbird spillage capture, and storm water capture projecting the highest capital costs for implementation.

Chris stated that a new in-basin reservoir would require a partnership to split the high initial capital costs.

With respect to the alternative of storm water capture, Amanda Nairn stated that storm water capture efforts in Norman would reduce drainage into Lake Thunderbird. Additionally, Amanda stated that, with the current practice of OWRB and COMCD allowing temporary water from the flood pool, storm water capture is effectively being practiced.

IPR at the existing WRF is projected to be more expensive than IPR at a new WRF with conveyance costs as the primary driver in the cost difference.

Cole moved on to discuss DPR analysis following the 2060 SWSP Supply Alternatives Analysis

The analysis estimated a transmission distance from the WRF to WTP of 7 miles, and the costs included WRF treatment improvements and additional expansion at the WTP for water softening.

In a DPR scenario utilizing reverse osmosis (RO), the resulting brine reject is assumed to be pumped approximately 5 miles away from the WTP to be input into a deep injection well.

DPR would only be considered at the existing WRF as it would receive the larger share of waste flow splits in any scenario. There is water lost through DPR treatment technologies, so utilizing a larger volume of waste flows would allow for consistent water quantity.

Cole presented a summary of reuse cost estimates.

The reuse cost estimates included costs for the WRF and WTP facilities, including:

- Reuse Total Project Costs (WRF)
- Reuse Conveyance Costs (WRF)
- Reuse O&M Costs at Net Present Value (WRF)
- Reuse Marginal Life Cycle Costs (WRF)
- Total Project Costs (WTP)
- O&M Costs (WTP)
- Marginal Life Cycle Costs (WTP)

For each reuse alternative, the WRF and WTP costs were combined to yield a cost per thousand gallons (\$/kgal) of potable water produced. These costs are in addition to what was displayed in the wastewater treatment and conveyance costs. Garver will ensure conveyance isn't being double counted in the wastewater treatment costs and reuse costs shown.

- Existing WRF with IPR - \$7.48 \$/kgal
- Existing WRF with DPR - \$10.32 \$/kgal
- New WRF with IPR - \$9.23 \$/kgal

Cole moves on to discuss the estimated costs of returning inactive GW wells to service.

To receive an additional 2 MGD of GW, the cost is estimated to be \$30 million. A primary driver in these costs are treatment technologies for arsenic and chromium-6.

Cole discussed estimated costs for water supply at Scissortail Reservoir and Parker Reservoir.

Although either of these sources can eliminate the future supply gap, capital costs for developing conveyance is the primary driver of the cost estimate for this alternative. The estimated capital costs for Parker reservoir were \$922 million, and it's assumed Scissortail Reservoir would incur a similarly high conveyance cost.

Cole discussed the cost drivers for the new in-basin reservoir alternative.

Conveyance piping southeast of Lake Thunderbird, construction, and land acquisition are the primary cost drivers in the alternative. This alternative's footprint would also need to encroach on the Canadian River watershed to be effective. The estimated capital cost of this alternative is \$694 million.

Cole discussed the alternative of constructing Alluvial Wells in the Canadian River

Alluvial wells are contained in shallow aquifers where water quantity and water quality may not be consistent. This alternative would require a wellfield in West Norman with an

additional WTP in close proximity to the wellfield. In addition to the capital costs, a study to determine well yields would be necessary. The estimated capital cost of this alternative is \$255 million. Cole noted that the full life cycle costs for this alternative has not been developed, but will be provided to the sub-committee in the future.

Cole progressed the discussion to the alternative of purchasing more water from OKC

It is currently assumed that OKC would be able to cover the supply gap, and confirmation of that is expected from OKC in September 2024. The capital cost estimates for this alternative included a new connection with required appurtenances. The estimated capital cost of this alternative is about \$20 million.

Cole then presented a 20-year Life Cycle Cost of shortlisted water supply alternatives with purchasing more water from OKC yielding the lowest cost estimate. Staff asked that groundwater to be shown differently so that the amount for treatment could be seen separately since that isn't currently required by regulation.

It was noted by Kyle Arthur that the Bureau of Reclamation (BOR) currently has funding in place to provide up to 25% of funding for IPR and DPR projects. Any award of additional funding was not assumed in the cost estimates presented.

7. DISCUSSION AND POSSIBLE ACTION ON NON-MONETARY CRITERION EVALUATION.

The end result of the weighting and alternatives scoring will yield a heat map between monetary and non-monetary scoring for each alternative. Of the nine fields non-monetary fields scored, the criteria with the highest weighting scores were:

- Environmental Impact
- Flexibility
- Expandability
- Implementability
- Reliability

Sub-committee members wanted more clarity on how environmental impact should be considered when scoring. The way the environmental impact scores were intended to be interpreted was that the higher the scoring value, the less environmental impact is assumed for the alternative. With the request for more clarity, sub-committee members expressed a desire to score the criteria weighting again.

With the current weighting and alternative scoring results, purchasing additional water supply from OKC was the highest scoring alternative with respect to non-monetary criteria.

Garver will improve clarity on non-monetary criteria and provide to sub-committee members for a second round of scoring non-monetary criteria weighting and alternatives.

MISCELLANEOUS COMMENTS

IPR regulations will be provided to sub-committee members.

Sub-Committee members would like to see a timeline displaying how long it will take to implement alternatives for water and wastewater.

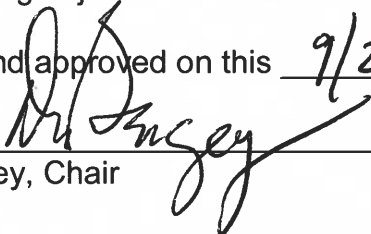
Sub-Committee asks if alternatives will require step changes in utility rates, and if that discussion should be a part of this sub-committees evaluation.

Nathan clarified that the Advanced Metering Project discussed on July 12, 2024, will not install metering on private wells.

ADJOURNMENT

The meeting adjourned at 12:17 PM.

Passed and approved on this 9/20 day of 2024.



Dan Bergey, Chair