



CITY OF NORMAN, OK
AIM NORMAN COMPREHENSIVE PLAN
WATER/WASTEWATER SUB-COMMITTEE
Development Center, Room B, 225 N. Webster Ave., Norman, OK 73069
Friday, April 12, 2024 at 9:00 AM

MINUTES

AMENDED

It is the policy of the City of Norman that no person or groups of persons shall on the grounds of race, color, religion, ancestry, national origin, age, place of birth, sex, sexual orientation, gender identity or expression, familial status, marital status, including marriage to a person of the same sex, disability, relation, or genetic information, be excluded from participation in, be denied the benefits of, or otherwise subjected to discrimination in employment activities or in all programs, services, or activities administered by the City, its recipients, sub-recipients, and contractors. In the event of any comments, complaints, modifications, accommodations, alternative formats, and auxiliary aids and services regarding accessibility or inclusion, please contact the ADA Technician at 405-366-5424, Relay Service: 711. To better serve you, five (5) business days' advance notice is preferred.

All AIM Sub-Committee Meetings are not regular meetings of the AIM Norman Comprehensive Plan Steering Committee, but the Steering Committee will be invited to attend, and this notice is being posted in compliance with the Oklahoma Open Meetings Act in the event of a quorum.

Chair Dan Bergey called the meeting to order at 9:07 am.

ROLL CALL

Present

Dan Bergey, Chair
Mark Daniels
Dr. David Sabatini
Kyle Arthur
Doris Kupfer (Alternate)
Karen Goodchild – arrived at 9:20 am

Absent

Bill Scanlon
Hossein Farzaneh
Dr. Robert Knox
James Chappel (Alternate)

Guests Present

John Harrington, ACOG
Amanda Nairn, AIM Steering Committee Member
Lee Hall, AIM Steering Committee Member

Consultants

Cole Niblett, Garver
Josef Dalaeli, Garver
Evan Tromble, Garver
Michael Nguyen, Garver

Staff

Kathryn Walker, City Attorney
Chris Mattingly, Utilities Director
Nathan Madenwald, Utilities Engineer
Peter Wolbach, Staff Engineer
Gay Webb, Administrative Technician

Chair Dan Bergey welcomed everyone to the meeting. He said John Harrington will provide an overview of the Garber Wellington Aquifer and Cole Niblett will discuss the Technical Memorandums that Garver has been working on.

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 JANUARY 10, 2024.

Quorum achieved at 9:20 am with arrival of Sub-Committee Member Karen Goodchild.

Motion by Mark Daniels to approve the minutes of January 10, 2024, AIM Norman Comprehensive Plan Water/Wastewater Sub-Committee meeting, Second by Dr. David Sabatini.

The motion passed unanimously with a vote of 5-0.

DISCUSSION ITEMS

2. GROUNDWATER DISCUSSION BY JOHN HARRINGTON FROM THE ASSOCIATION OF CENTRAL OKLAHOMA GOVERNMENTS.

Cole Niblett, Garver asked John Harrington, Association of Central Oklahoma Governments to speak about trends and monitoring efforts of the Garber Wellington Aquifer (GW). John said the GW covers 2,000 square miles. John said he will be studying the Norman area of the GW over the next year. He presented monitoring data from the Spencer Mesonet Station, which is located in the center of the GW. He said the last GW drought ended in May 2019. The recharge rate of the GW is 3.6" per year. However, recharge rates are not uniform across the GW. Evaporation affects recharge; long, slow precipitation is best for recharge. Lake Thunderbird contributes to recharge for the GW. The weather pattern is going from El Nino into La Nina so we typically see drier weather conditions. John does not see the GW under immediate threat of significant drought but the Ogallala Aquifer is in immediate threat. He does not see the over pumpage as an issue in the GW, except in specific, small areas with individual wells.

Nathan Madenwald shared data from an Oklahoma Water Resources Board monitoring wells located within Norman. Kyle Arthur asked about the mission of the group, our need to have water to get to 2045, and what could be said for the GW its viability for future water supply. Chris Mattingly shared that we have over 10 billion gallons in permitted annual water rights for the aquifer but we are only using about 2 billion gallons of those permitted water rights. He was asked if there are reasons, we should not drill more water wells. As long as withdrawal is spaced correctly, there shouldn't be an issue with adding more wells in the GW. Screening depths will just need to be considered based on well location due to characteristics of the aquifer.

Chris also mentioned what was done in the 2025 plan and that it was stated to not have homes over the estimated Hennessey Shale line. John was asked if Norman should build housing east of the Hennessey line. He said the Hennessey line is located in a recharge area. He said that we need to start thinking in pervious surfaces and would recommend not reducing pervious surface by more than 10-15% in areas of aquifer recharge. However, when you factor in the stormwater detention/retention areas for a commercial development, then the commercial development might not impact overall recharge. When development starts occurring in the Hennessey Shale area, it may be wise to quantify the recharge and ensure that it isn't lost. This should be something that Developers factor into their development practices but ultimately rainfall determines the amount of recharge the GW will see as evidenced by the recharge still seen.

Karen Goodchild asked if City wells pump down levels in private wells. John talked through well logs and sand lenses and how the GW covers a large area but conditions are often specific to particular locations and those are evidenced by different chemistries for the sands to show that they are not connected.

John says that he has future plans to completely map the lenses/layers for the GW in Norman.

3. WATER RECLAMATION FACILITY INDIRECT POTABLE REUSE.

Prior to the meeting, members were sent a YouTube video of the Indirect Potable Reuse (IPR) project. There are many regulatory unknowns regarding IPR at this time but it is worth considering as part of the water portfolio. Members requested a copy of the IPR report prepared by Garver.

4. DISCUSSION OF GENERAL COMMITTEE, OVERALL LAND USE PLAN PROGRESS AND PUBLIC ENGAGEMENT EFFORTS.

Cole shared results of the AIM Norman water poll and wastewater poll (as of 4/9/2024). This information can be found on the AIM website, www.aimnorman.com. Dan shared the AIM Committee is waiting to see the proposed land use map.

5. WATER BASELINE TECHNICAL MEMORANDUM.

Cole Niblett, Garver presented slides summarizing the water technical memorandum sent to members. He reminded members this process is working through major milestones that build upon each other. Baseline Development is the first task and will establish water demands and wastewater flows and areas of new growth to be serviced. Historical data analysis and knowledge of future land use plans is required. The baseline criteria will set the target to help evaluate the existing systems and develop alternatives and costs. Future meetings will include hydraulic model updating, water supply plan review and evaluation and cost analysis.

He explained the water demand projection procedure

- Projected population x per capita demand = average future demand
- Average future demand x peaking factor = max future demand

Doris Kupfer asked if the population projections used for the analysis for water and wastewater projects was consistent with main committee. Cole confirmed that the population projections being used were the same. The water service area population is anticipated to grow at the same rate as the total city population of 1.5% year over year. However, there is a portion of the population not shown within the water demand projection since there is a portion of the population served by private wells. This proportion was assumed to remain consistent moving forward but it was acknowledged that the land use plan could impact this.

Josef Dalaeli, Garver explained the single family equivalents used in these calculations to assist with measuring other flows (industrial, multi-unit, commercial). Single family equivalent is a way to use a standard unit when assessing flows throughout the city.

Norman's annual demand has been increasing with population, while maximum day demands are more weather dependent. Average day demand is used more for water supply and water rights. Max day demands are more water treatment plants and pump stations and those pieces of infrastructure. Over 75% of Norman's water is used by residential customers. Water use per person has generally declined over the past 20 years. The decline may be attributed to city codes (plumbing code), high efficiency appliances and water rate pricing structure. Chris discussed that it would be good to show water supply situations for other utilities in comparison to Norman. Nathan mentioned that AWWA does benchmarking for this and this information could also be shared.

Cole explained the conservative water use per person projection they are recommending for the next 20 years and how it was calculated.

- Average Day Demand - 136 gallons per capita per day (gpcd), adding a 10% reserve capacity = 150 gpcd.
- Maximum Day Demand - 250 gpcd, adding a 10% reserve capacity = 275 gpcd.

The value of 136 is not an average usage value, but is used as the basis to ensure adequate water supply in the future regardless of climatic conditions or other constraining factors.

Garver combined the population projection and per capita demand assumptions to determine future system-wide demands. The projected demand includes a 10% reserve capacity.

Karen Goodchild asked about fire protection for east Norman. Chris mentioned that if development extends east, there will be more fire protection when the water system is extended. Nathan added that developers are required to construct the infrastructure necessary to serve their development in accordance with City standards. This would include water lines if the development was to be served by City water. However, there is some level of fire protection where there are groundwater lines since those lines have fire hydrants as needed for normal maintenance and flushing.

Cole discussed the minimum pressure and fire flow recommendations, the same factors used in the 2018 Modeling update.

- Minimum Pressure Requirement – 25 pounds per square inch (psi)
- Minimum Pressure Goal – 40 psi
- Fire Flow Requirement – 1,000 gallons per minute (gpm) residential, 1,500 gpm commercial
- Fire Flow Goal – Minimum of 1,500 gpm

Members discussed and recommended moving forward with projections of 136 gallons gpcd plus 10% reserve, minimum pressure 40 psi and fire flow at 1,500 gpm.

The next steps will include collecting field data, model will be calibrated and validated and complete an existing model evaluation.

6. WASTEWATER BASELINE TECHNICAL MEMORANDUM

Cole summarized the wastewater technical memorandum. He defined the term rainfall-derived I and I (RDII), which is infiltration and inflow (I&I). I&I is water that enters the collection system that does not come from a drain. Infiltration comes from groundwater that can enter through a joint or crack in a sewer pipe, inflow comes from rainwater entering the sewer system through openings such as an open manhole cover or improperly installed plumbing. Wet weather events cause I&I and cause peak flows in the wastewater system.

Cole reviewed daily flow and dry weather flow at the Water Reclamation Facility. Oklahoma Department of Environmental Quality requires planning for at least 100 gpcd. Garver recommends planning for 100 gpcd plus 10% reserve, 110 gpcd. Garver is recommending a maximum surcharge goal of no more than 1 foot above the crown of pipe and a minimum freeboard criteria surcharge to no more than 3 feet below the manhole rim elevation. After discussion, it was recommended to make freeboard 3 foot a goal and 1 foot a criteria.

The next steps include updating the hydraulic model, evaluate current collection system and recommend long-term alternatives.

7. SCHEDULE OF UPCOMING WORK.

Cole said Garver will be focusing on updating the hydraulic modeling the next 60 days. The next water/wastewater workshop is scheduled for July 12, 2024. Dan would like to schedule a tour for the committee with Kyle Arthur at the Central Oklahoma Master Conservancy District pump station in May.

MISCELLANEOUS COMMENTS

None

ADJOURNMENT

The meeting adjourned at 12:40 pm.

Passed and approved on this MAY 14 day of 2024.

Dan Bergey, Chair