

STATE OF TEXAS §

March 12, 2014

COUNTY OF GRAYSON §

BE IT REMEMBERED THAT A Called Meeting of the Sherman City Council was begun and held in the City Council Chambers on March 12, 2014.

COUNCIL MEMBERS PRESENT: Mayor Cary Wacker; Deputy Mayor Robert Softly.
Council Members Davis, Johnson, Plyler, Sofey.

COUNCIL MEMBERS ABSENT: Council Member Watt.

CITY STAFF PRESENT: George Olson, City Manager; Robbie Hefton, Assistant City Manager/CFO; Brandon Shelby, City Attorney; Mark Gibson, Director of Utilities; Scott Shadden, Director of Development Services; Don Keene, Director of Community and Support Services; Clay Barnett, Director of Public Works and Engineering; Otis Henry, Police Chief; Mary Lawrence, Controller; Kevin Winkler, Parks and Recreation Director; Jim Cross, Assistant Public Works Director; Shawn Hackworth, IT Manager; Joe Gandillon, Systems Coordinator; Pam Cloer, Assistant to the City Manager; Linda Ashby, City Clerk.

PURPOSE: Call to Order, Quorum Determined, Meeting Declared Open

Receive Presentation on the City of Sherman's Water Treatment Plant Expansion Study/Design

Adjournment

CALL TO ORDER, QUORUM DETERMINED, MEETING DECLARED OPEN

Mayor Wacker called the meeting to order at 12:02 p.m., declared a quorum present, and opened the Called City Council Meeting.

RECEIVE PRESENTATION ON THE CITY OF SHERMAN'S WATER TREATMENT PLANT EXPANSION STUDY/DESIGN

Mayor Wacker explained that this is the third in a series of Special Called Budget Meetings to discuss major infrastructure or capital needs within the City of Sherman. She also welcomed Drew Satterwhite, Greater Texoma Utility Authority General Manager, and Jerry Chapman, GTUA Consulting General Manager, to the meeting.

Mark Gibson, Director of Utilities, presented a briefing on the City's Water Treatment Plant Expansion Study and Design. Sherman is blessed in that it has two sources of water, groundwater from the wells and surface water from Lake Texoma. The groundwater has a limited potential and surface water has a vast potential.

The City has 24 wells that produce groundwater, with 13 producing from the Trinity Aquifer and 11 from the Woodbine Aquifer. Currently the City is only pumping from nine of the Woodbine wells due to quality from one well and the cost of production from the other well. The groundwater capacity is 10 million gallons per day (mgd), however on an average day, the City pumps about 5 mgd from the wells. The average peak flow for the past five years is 7.7 mgd, with the highest peak at 9 mgd.

Mr. Gibson added that groundwater is not the solution for the future because the aquifer levels will decline over time as they are pumped; the quality will degrade as the levels are reduced; the

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Groundwater Management Areas and Groundwater Districts continue to increase regulations on what is pumped and how it is pumped; defining future conditions could restrict what Sherman can pump from their wells; groundwater law continues to change; and the Legislative actions could change things.

Over the years, Sherman has been “forward thinking” and purchased water storage in Lake Texoma. Sherman currently has 33,400 acre feet of storage in the Lake which produces about 35 mgd for the City. To date, the City has spent about \$11 million for that storage.

The surface water system includes a pump station and 12 mile long pipeline from the Lake which can produce up to 25 mgd. The Water Treatment Plant has a capacity of 10 mgd, with the average flow being 5 mgd. The average peak flow for the past five years is 7+ mgd with the highest peak at 8 mgd. The average flows are good but the peak flows are getting close to capacity. Panda Power Plant now uses 5 mgd of the untreated water.

Mr. Gibson reiterated that the potential for growth is in the surface water and felt it was time to begin talking about additional capacity at the Water Treatment Plant. CH2MHill was the engineering firm that originally designed the Water Treatment Plant and has provided upgrades to the plant. The staff asked them what would need to be done to get additional capacity at the plant.

Their recommendation was to keep the existing plant intact, but to upgrade with a Microfiltration and Reverse Osmosis process, which is a newer technology. He gave a brief explanation of the current process used in the conventional plant. Because Lake Texoma water is brackish and high in dissolved solids and salts, the City had to install Electrical Dialysis Reversal (EDR) units, which remove the dissolved solids in the water. This gives a higher quality of water which is then mixed with water that has bypassed the EDR units, for an acceptable level of water. Mr. Gibson showed several photographs to help explain the process used at the Water Treatment Plant.

He added that the current EDR system is proprietary and General Electric is the only company in business. Reverse Osmosis and Microfiltration are membrane processes and many companies make the membranes, which allows for competition in the marketplace. When the plant was originally constructed 15 to 20 years ago, the EDR system outperformed the Reverse Osmosis process, and was the best at that time. Reverse Osmosis and Microfiltration are both barrier processes and the water goes through the membranes to filter the bad solids, which is a better process than the EDR.

Mr. Gibson said the new units also have a smaller footprint on the plant. A conventional plant expansion would yield about 25 mgd, while the Microfiltration an RO process would yield about 70 mgd at the existing site. He explained how the new system would differ from the current system.

If the RO unit was added, Mr. Gibson said the proposed operation of the plant would be to continue to run 10 mgd through the original plant and another 10 mgd through the new Microfiltration and RO units. Part of the flow from the Microfiltration would be split off and taken to the clear wells, while the rest would be filtered to a higher degree through the RO units and blended back into the clear wells. The ratio of the blending would depend on the quality of the water coming into the plant.

Mr. Gibson explained how the plant would be expanded to add the new equipment for both the 10 mgd expansion and the 60 mgd expansion. As the EDR units wear out, they would be taken off-line and replaced with Microfiltration and RO units so the same buildings could be used.

Mr. Gibson said the timeline is critical in the replacement of the equipment and he recommended that the City should be proactive instead of reactive. When a City begins reaching 75% of its capacity, they should start planning to obtain the additional capacity and should start construction by the time they reach 90% of the capacity.

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He presented a timeline to add the 10 million gallons of Microfiltration and Reverse Osmosis to the plant. The testing period could be shortened at the beginning if the Council wanted to provide for testing after the plant is built. There would be three years or 36 months from the time the Council decides to add the system until the time that water leaves the plant. If the plan was started now, it would be 2017 before the City would get water from the new addition.

Mr. Gibson presented estimated costs for expanding the plant and said the staff would recommend a 10 mgd expansion which would cost about \$15 million. The cost of the original plant in 1992-1993, was \$22 million. There would be an additional cost for brine disposal, however the staff has a solution to use existing infrastructure for a cheaper disposal.

Also, based on projections from the Region C Water Plan for this area, using their population projections, and considering the City of Sherman only and that our wells are still pumping at 10 mgd, this expansion should last about 20 years, or until 2035.

Mr. Gibson reiterated three points: surface water is the future for the City; the demand on peak days is approaching the capacity, in groundwater, surface water, and total system; and there is a three year lag time for expansion of the plant. If expansion starts today, the plant would be on-line in 2017.

The staff's recommendation is to initiate planning for a 10 mgd expansion of the Water Treatment Plant with an expansion cost of \$15 million, plus the brine disposal.

Council Member Plyler asked if the citizens that were currently on surface water would notice an increase in water clarity and water quality with the new Microfiltration and RO systems. Mr. Gibson said that would depend on how the plant was run. If more water was run through the RO units and the EDR units, the solids would be reduced greatly. The issue becomes a balancing act of whether or not the cost is worth the return. The City will stay under all the parameters that are required by the State for water quality, but the question becomes to what degree you want to treat the water.

Council Member Johnson asked about maintenance costs between the EDR units and the RO units. Mr. Gibson said the cost of maintenance will be about the same. Currently one of the major costs is electricity to run the units. Maintenance on the RO unit might be a little less because it is a simpler system.

Robby Hefton, Assistant City Manager/CFO, added that there are also multiple vendors that provide the equipment and maintenance for RO systems, whereas the current EDR system has one vendor to provide equipment and maintenance, with no competition. Council Member Johnson confirmed that there should be reduced operating and maintenance costs on the new system versus the old system. George Olson, City Manager, said with an additional 10 mgd, there might be some additional labor costs involved. As the City moves forward, they will be using more water and there will be an offset.

Mr. Hefton said from a cost standpoint and rate standpoint, if the City is spending half as much to treat a gallon of water, and the plant cost is half as much as it was originally, then the City will be saving money that way too. The actual cost of building the plant on a per gallon basis is half of the original cost.

Mayor Wacker asked if it would be wise to consider another 5 mgd increment, over the recommended 10 mgd. Mr. Olson said what the staff is looking at today is for Sherman, Texas. But the Region C Water Plan talks about Sherman being the purveyor of water for the Texoma Region to the west and south. Water needs are "rising to the top" and a lot of cities to the south are really concerned. There is more talk about the City of Sherman helping other cities with water. The staff is not ready to expand for

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that reason. The first priority is the citizens of Sherman. A preliminary discussion has been held with representatives from the Greater Texoma Utility Authority and they are gathering additional information that might encourage Sherman to include a larger expansion.

Mayor Wacker confirmed that the starting point for discussion today is the minimum of a 10 mgd expansion. Mr. Gibson confirmed that amount would take care of the City's needs.

Deputy Mayor Softly entered the meeting at 12:30 p.m.

Council Member Davis asked what the percentage of water usage was for residential versus business and industrial in Sherman. Mr. Hefton said it was probably 60% for residential versus 40% for business and industrial. Mr. Olson invited Council Members to tour the Water Treatment Plant if they wished. Mr. Olson added that the proposal for the expansion of the plant, was a good deal for everyone.

Nate Strauch, Herald Democrat Reporter, said the City's numbers indicate that the level of water coming out of the wells will remain constant, but with the quality issues and the aquifer issues that were addressed, is that a concern and is it expected to be a downward trend instead of an upward trend. Mr. Gibson said in the long term, it will probably go down. But currently the City's capacity with the wells, when everything is running, is almost at 12 mgd. The wells are only pumped at 10 mgd to maintain equilibrium in the aquifer.

Mr. Strauch asked if the 20 year estimate, when adding the 10 mgd, would include a drop in the well production. Mr. Gibson said that estimate includes being able to pump 10 mgd from the wells.

Mr. Strauch said there is no current problem with zebra mussels, but asked if they expected any additional cost in the future. Mr. Gibson said he did not expect an additional cost because of the zebra mussels, but if there was a problem, it would be in the transmission line from Lake Texoma to the plant. Once they are in the plant, they enter a different environment from the untreated water and the chemicals would kill them.

Mr. Strauch asked if the cost of the water for Panda Energy could be borrowed against to finance the upgrade at the Water Treatment Plant. Mr. Hefton said yes, it could be used. Whether it is raw water or treated water on an emergency or temporary basis, there is a water services agreement with Panda that spells out what the rate is, guarantees to provide them a certain amount of water at a certain pressure, and other items. The City does realize revenue from that, and that revenue can be used to provide leverage for building or expanding a plant, in a larger context. The financial end of the plant expansion will be discussed during regular budget discussion in June, 2014.

Council Member Sofey asked if the cost of additional upgrading now would be more economical than going back and expanding again later. Basically if expanding to 15 mgd now would be better than 10 mgd now and another 5 mgd later.

Mr. Olson said the City has a 25 mgd capacity of what can be pumped. With 10 mgd more, the City will be at capacity. If you want to go bigger, the Council would also need to consider pipeline transmission expansion up to Lake Texoma and that would add another piece into the puzzle. Council Member Sofey verified that there would be additional costs to increase the pipeline. Mayor Wacker said the staff will bring back other scenarios for discussion.

Mr. Hefton added that if the City goes above the 25 mgd capacity that the plant has today, then the City would need to build another pipeline or a bigger pipeline and that will be more costly than the estimate presented today. He added that the technology is mature now and there is no indication that it will be much more expensive for the technology or the bricks and mortar in five years.

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Council Member Davis said some cities are exploring the use of brackish groundwater, and he asked if the Reverse Osmosis system would treat brackish groundwater. Mr. Gibson said it would treat brackish groundwater, however Sherman's groundwater is good quality. They can design a membrane for whatever type of water is available.

Mayor Wacker said during the Budget Work Session the Council will discuss in more detail, the proposals made for expansion of the Water Treatment Plant.

ADJOURNMENT

There being no further business to come before the City Council, motion was duly made and approved to adjourn the Called Meeting at 12:44 p.m.

MAYOR

ATTEST

CITY CLERK