

**MINUTES OF THE STUDY SESSION MEETING
OF THE TOWN COUNCIL OF THE TOWN OF CHINO VALLEY**

**TUESDAY, SEPTEMBER 19, 2023
6:00 P.M.**

**CHINO VALLEY COUNCIL CHAMBERS
202 N. STATE ROUTE 89, CHINO VALLEY, AZ**

Present: Mayor Jack Miller; Councilmember Annie Perkins; Councilmember Tom Armstrong;
Councilmember John McCafferty; Councilmember Sherri Phillips

Absent: Vice-Mayor Eric Granillo; Councilmember Robert Schacherer

Staff Town Manager Cindy Blackmore; Town Attorney Andrew McGuire; Administrative Services

Present: Director Joe Duffy; Water Consultant Mark Holmes; Public Works Director/Town Engineer Frank Marbury; Utilities Manager Mike Bovee; Wastewater Treatment Plant Operator Jesse Holyfield; Audio Visual Technician Lawrence Digges; Deputy Town Clerk Sara Burchill

1) CALL TO ORDER; ROLL CALL

Mayor Miller called the meeting to order at 5:00 p.m.

2) Discussion regarding Water Reclamation Facility Capacity and Expansion Analysis and Recommendations.

Mark Holmes, Water Consultant, presented the following:

- Taylor Pierce of PACE Advanced Water Engineering would be presenting with Mr. Holmes to discuss the priority assessment needed for the Town's water reclamation facility.
- Provided definitions of some common terms that would be used throughout the presentation.
- The facility was experiencing peak flow volumes that required expansion.
- The location of the plant was not ideal for any service area located north of the plant as all sewer connections north of the plant would have to be lifted back to the current facility.
- The facility was connected to the groundwater recycling and recharge underground storage facility at Old Home Manor. That water was being used to recharge the aquifer.
- Facilities located at the north end of Town would allow for gravity flow.
- The presentation and discussion would help to answer the question of whether it was in the best interest of the Town to expand the current facility at a cost of potentially \$8 million to \$15 million based on the current location and future water importation mitigation needs.
- The assessment looked at opportunities and options for minimal capital investment now to provide enough time to evaluate a northern centralized facility at larger expense in the future.

Taylor Pierce, Project Director and Professional Engineer with PACE Advanced Water Engineering, presented the following:

- The evaluation was submitted in June.
- The company looked at the hydraulic and biological capacity of the existing facility, which is a half million gallon per day (MGD) facility.
- Outlined the specifics of the facility and the conditions for which it was designed.
- Shared a graph detailing the Town's historical flow rates. Flow rates had not exceeded half MGD per day. There was a spike in flow in the mornings when people typically wake up, and again in the evening when people got home.
- For four to five hours per day, the facility was exceeding its rated flow rates by 2,000 to 6,000 gallons per hour. This put unnecessary stress on the system.
- The plant's biological ratios were unbalanced and without a thorough investigation of the collection system, staff couldn't know what was causing it. The biological ratios being unbalanced made it difficult to treat excess nitrogen coming into the plant. The current plant could not hold the water long enough to treat the nitrogen. Staff began adding carbon to the system to help treat the nitrogen and the plant was now running better.
- Based on current growth, the Town would not see an average daily flow of 500,000 gallons per day for the next 10 years. The Town was currently at an average flow of about 325,000 gallons per day.
- Presented three recommendations and alternatives to move forward:
 - Alternative 1 – expand another membrane plant north of where the current plant was with larger basins to help treat the nitrogen. This option would give the most capacity and was the most expensive (about \$8 million). This would solve the peak flows and water quality challenges. This option would take the plant from half MGD to three-quarter MGD.
 - Alternative 2a – add two 100,000 gallon flow equalization basins that would hold additional flow above what the facility was rated for and divert it to an equalization basin to be pushed back through the plant at night when there was no flow. This would not increase the capacity of the plant, but the Town still had several years of growth the facility could accommodate. This option would cost about \$3 million.
 - Alternative 2b – similar to 2a in that it would be used as an equalization tank, and similar to Alternative 1 in that it would be ready to have membranes installed, but would not include the membranes (the most expensive part of the process). This would allow the Town to buy the membranes as needed (for example, if there was a sudden boom in the population). However, adding the membranes would reduce the equalization capacity, potentially reintroducing the problem of higher flux rates. This option would cost about \$4 million plus the additional cost of the membranes should the Town choose to install them.

Mark Holmes, Water Consultant, presented the following:

- Nothing was throw away with any of the options.
- Staff felt that options 2a or 2b were the best options for the Town, but that 2a was the most suitable option as it would allow for better management and treatment of the peak flows. Storing the incoming water and processing at a later time would save a lot of operational costs.
- Staff was looking at it as a minimum investment to gain 10 years to further assess the ultimate build out of a northern reclamation facility.

Council, Mr. Pierce, and staff discussed the following:

- Council inquired how long alternative 2a would work before expansion was required.

- Mr. Pierce stated that he projected 10 years which was based on an increase of 27,000 gallons per year.
- Staff stated they were recommending 2a over 2b because it would buy them some time to further consider the northern plant which would lead into mitigation efforts for the Verde River.
- The recent water quality tests added the question of needing to treat the water coming out of the sewer before recharging and if that would be better done at the current plant, or take a little time and see if it would be more economical to consider all the processes in one location.
- Council inquired when the plant needed to expand based on federal regulations.
 - Mr. Pierce and staff stated the Town had to be in planning once the facility reached 80% capacity, which is 400,000 gallons per day for the Town. The Town was far ahead of the requirements. The Town had to be under construction when the facility reached 90% capacity. The facility's treatment capacity was not as high as the facility's flow capacity due to the components of the water coming in.
- Council felt that an accurate decision needed to be made based on how quickly the Town would have to enlarge the plant after this expansion.
 - Staff stated there had been a consistent rate increase of 20,000 to 25,000 gallons per day for each year of growth.
 - Staff stated the downside of 2b would be that once the Town needed the expansion capacity they would probably need to build another equalization basin. 2a allowed for building the equalization basins first, then staff could work on expanding the plant later if the Town decided to stay at that location. 2b was like building a car without the motor.
- Council inquired if an equalization tank had been approved a few years ago.
 - Staff stated that they had, but they had estimated the cost would be about \$1.5 million and when the design concept came in it was over \$4 million. That's when staff decided to bring PACE in to essentially create a cost benefit analysis for how to proceed with improving the current plant and looking toward expansion.
- Council inquired about ongoing maintenance with the equalization basins.
 - Mr. Pierce stated the ongoing maintenance would include aeration and there would be a pump to remove the water when flow rates stabilize. The equipment would require service every year.
- Council inquired how quickly membranes needed to be replaced once damaged in order for the facility to continue running.
 - Mr. Pierce stated that ideally you would replace a membrane within a day.
 - Staff stated there were 4,000 membranes in the plant and they had 50 more in stock. Last year staff removed all the membranes and cleaned them. About 700 were damaged and replaced.
- Council inquired if the existing pumps for the recharge basin were oversized to accommodate growth.
 - Staff stated they were designed for half MGD average flow. If something was done to increase the treatment capacity it would not affect the recharge basin pumps. Currently, about 320,000 gallons were being recharged on average.
- Council inquired if a pad already existed to build on.
 - Staff stated it was just dirt, but it was a cleared-off area available for use for the project.
- Council inquired about the time frame for construction from start to finish.
 - Staff stated that it would be 18 to 24 months before construction would be complete.
- Council inquired about the steps staff was taking to make sure the technology put in place today would not be obsolete tomorrow.

- Staff stated that was another reason to buy some time now to see what technology would be available down the road. Some of the equipment in the current facility was already outdated.
 - Staff was planning to do some upgrades during this construction.
- Council inquired what was meant by "non-construction costs".
 - Staff stated that would cover design, permitting, construction management, etc.
- Council inquired if there were any grants or possible help from the County or State.
 - Mr. Pierce stated that there was a lot of possibility for forgivable loans.
 - Staff stated that they would be looking for any additional sources of funds once Council decided which way to go with the project.
 - Staff stated that WIFA had lots of money available. The USDA was also a good choice to possibly get a lower interest rate.
 - Staff stated that some of the debt the Town took on to build the initial system would be rolling off in the next few years, so the Town would have a little more debt capacity. The Town could clearly afford \$3 million (option 2a or 2b). Also, the rate study that was recently done regarding water and wastewater rates had \$5 million built in to service the debt needed for capital improvements on the wastewater treatment plant. All of that, with a potentially low interest rate and/or forgivable principle, would put the Town in a good position.
- Council sought clarification on the cost difference between options 2b and 1.
 - Staff stated that it was a fair assumption that it would cost about \$3 million to put in the pumps and membranes if it was done now. Down the road it would cost more.
- Council discussed the pros and cons of each option. Council felt that the plant in northern Chino Valley was a dream and considered the possibility of needing option 2b to allow for expansion at the current location, but 2a wouldn't allow that.
 - Staff stated that a factor that might make Council and staff lean one way or the other is whether grant money would only be available for one option or the other.
 - Staff stated that 2a was the only option that would provide a flow equalization basin that would address the peak flow and biological surge issues. If option 2b was selected, it would only provide an equalization basin until it was filled with membranes and then the Town would be in the same situation it was in now needing an additional equalization basin. Even though they would have the additional processing capacity, there would still be peak flows every day and the plant would be overloaded.
 - Staff stated that the current membrane technology the plant used was old technology and there were other technologies emerging that were more compact and efficient than the membranes the Town currently used. Staff suggested the Council ask themselves if they want to set up the facility to require a specific filter or build the equalization basins and have the option of designing the plant to use a different technology of treatment in the future.
 - Mr. Pierce stated there was a new product which was a membrane that would fit the same footprint of the current membranes used by the Town, and nearly double the flow-through capacity. There was a possibility that there could be an alternative within the next 10 years that could replace the facility's current membranes to allow more volume.
- Council inquired if the equalization basin alone would help with the nitrogen issue.
 - Mr. Pierce stated that it could help, but the nitrogen issue would be fixed by carbon dosing as needed. Any alternative would require a chemical dosing system unless staff could determine the source of the excess nitrogen and eliminate it.
- Council asked for Utilities Manager Michael Bovee's opinion of what option would best suit the Town.

- Mr. Bovee stated that he felt option 2a was the best because it would take the hydraulic and biologic surges and flatten them out.
- Currently, the plant was processing in the middle of the day when the costs were the highest. The plant went from idle at night to full throttle during the day. An equalization basin would level everything out so the plant could run at a high idle 24/7 reducing electricity use, wear and tear on equipment, and wear and tear on the membranes.
- Council asked what his choice would be if he could choose option 1 or option 2a.
 - Mr. Bovee stated that he would still go with 2a even though he's not usually concerned with the money aspect.
- Staff stated that there was concern years ago that the entitled apartments would begin building all at once, but that hadn't been the case. Over the last five or six years there had been a consistent growth of about 60-80 homes per year. This reduced their urgency to expand the plant.
- Council inquired if there was anything else that could be added to option 2a that would make the plant more successful.
 - Staff stated that drying beds had been designed but had not been put in yet and that would be helpful. The Town's vector truck was also very old and was a hazard and needed to be replaced.
 - Mr. Pierce stated that spare membranes were always needed and felt that 50 was probably on the low side of what the Town should keep on hand as the plant employed 4,000. He also suggested looking at additional sludge processing or a sludge storage tank. He stated the UV system was also a little outdated and there may be more energy-efficient low-pressure UV systems that could be installed in the same footprint the facility currently used.
 - Staff also mentioned odor control as something to think about in the event that development began coming closer to the plant.
- Staff requested that the Council decide on an option so that staff could review budgeting and come back to Council with numbers on how much money would be left for the project and options on how to use those additional funds.
- Council individually expressed their preferences.
- After discussing their individual preferences, Council collectively agreed on option 2a.

3) ADJOURNMENT

MOVED by Councilmember Sherri Phillips, seconded by Councilmember John McCafferty to adjourn the meeting at 6:07 p.m.

AYE: Mayor Jack Miller, Councilmember Annie Perkins, Councilmember Tom Armstrong, Councilmember John McCafferty, Councilmember Sherri Phillips

5 - 0 PASSED - Unanimously



Jack W. Miller, Mayor

ATTEST:



Erin N. Deskins

Erin N. Deskins, Town Clerk

CERTIFICATION:

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Regular Meeting of the Town Council of the Town of Chino Valley, Arizona held on the 19th day of September, 2023. I further certify that the meeting was duly called and held and that a quorum was present.

Dated this 10th day of October, 2023.

Erin N. Deskins

Erin N. Deskins, Town Clerk