

PRESCOTT CITY COUNCIL
WORKSHOP
TUESDAY, DECEMBER 1, 2009
PRESCOTT, ARIZONA

MINUTES OF THE WORKSHOP OF THE PRESCOTT CITY COUNCIL held on TUESDAY, DECEMBER 1, 2009 in the COUNCIL CHAMBERS located at CITY HALL 201 SOUTH CORTEZ STREET, Prescott, Arizona.

◆ **CALL TO ORDER**

Mayor Kuykendall called the workshop to order at 1:00 p.m.

◆ **ROLL CALL:**

PRESENT

ABSENT

Mayor Kuykendall
Councilman Blair
Councilman Hanna
Councilman Lamerson
Councilwoman Linn
Councilwoman Lopas
Councilwoman Suttles

None

1. Wastewater Treatment Plants Master Plan Project Update.

Mr. Norwood explained that they have been talking about reviewing and expanding the wastewater treatment plants for years and have gone through an exhaustive process. He said that it is a big number to take care of them, but there are to be no decisions made today; it was strictly to bring everyone up to date on where they were at. He said that they will talk about this further during the goals retreat.

Mr. Nietupski welcomed the new Mayor and Council and said that there would be public meeting on the issue on December 16, 2009 from 4:00 to 6:00 p.m. in the Founder's Room of the Library to provide citizens the opportunity to view the presentation again and ask questions and provide input.

He said that since the beginning of May in 2009 Black and Veatch and Carollo Engineers have been working together to identify specific issues including equipment efficiencies. He said that the presentation would illustrate that the City has serious issues with wastewater treatment and the cost projections are significant. He said that the City is not in a crisis, but it requires prudent planning. He then introduced Dan Burhmaster of Black & Veatch and Mark Courtney of Carollo Engineers.

Mr. Burhmaster said that he wanted to start off by giving a word of thanks to the Public Works staff as well as the wastewater treatment plant staff. He said that they have been a tremendous resource to the project team and will affect a high-quality master plan document.

- ▶ WWTP MASTER PLAN SCOPE COMPONENTS
 - ▶▶ Treatment technology evaluation
 - ▶▶ Biosolids facility planning
 - ▶▶ Industrial/commercial pretreatment limits study
 - ▶▶ Near-term improvements design

Councilman Lamerson asked where the City's obligation to address the issue came from. Mr. Burhmaster responded that it is a Federal Code obligation for pretreatment.

- ▶ MASTER PLANNING – ASSESSMENT PROJECT TASKS
 - ▶▶ Confirm/Update regulatory, compatibility and reliability requirements
 - ▶▶ Assess existing facilities – Sundog WWTP and Airport WRF
 - ▶▶ Evaluation/project WWTP flows and loading
 - ▶▶ Evaluate/Recommend Treatment Alternatives
 - ▶▶ Summarize all findings into Master Plan reports

- ▶ WORKSHOP OBJECTIVES
 - ▶▶ Review existing WWTP facilities
 - ▶▶ Identify drivers for improvements and expansion
 - ▶▶ Summarize recommended improvements
 - ▶▶ Present CIP costs and schedule

- ▶ DRIVERS FOR FACILITY EXPANSION
 1. Last major improvements – Sundog 1989 Airport 1998
 2. Recent substantial population growth
 3. Increased wastewater concentrations
 4. Regulations becoming more stringent
 5. Equipment reaching end of useful life

Councilman Hanna asked how close they were to a critical stage. Mr. Burhmaster said that it is more critical at the Airport plant. He said that they are getting close at the Sundog plant, but because of its age there are other factors to address apart from capacity.

- ▶ TWO FACILITIES PROVIDE CITY'S WASTEWATER TREATMENT
 - ▶▶ Airport WRF – North side
 - ▶▶ South – Sundog WWTP

- ▶ HISTORY – FUNDING Sundog WWTP – Aerial Photo
- ▶ HISTORY – FUNDING – Sundog WWTP
 - ▶▶ Initial construction date – 1934
 - ▶▶ Plant expansions 1955, 1967, 1979 and 1989
 - ▶▶ Most recent plant design 1989 6 mgd
 - a. construction cost - \$8.1 m
 - b. Financed through bonds, collection/buy-in fees, and EPA grants
 - c. Produces effluent suitable for open access irrigation and aquifer recharge
- ▶ HISTORY – FUNDING Airport
 - ▶▶ Original Batch Plant – 1965 – 0.04 mgd
 - ▶▶ Oxidation Ditch Plant – 1978 – 0.75 mgd
 - ▶▶ Last Plant Design – 1998 – 2.2 mgd
 - a. Construction cost \$3.5 M
 - b. Financed through bonds and collection of buy-in fees
 - c. Produces effluent suitable for open-access irrigation and aquifer recharge
 - ▶▶ Produce reclaimed water safe for reuse
 - ▶▶ Produce biosolids safe for beneficial use or land-filling
- ▶ WASTEWATER TREATMENT PROCESSES
- ▶ WASTEWATER TREATMENT GOALS
 - ▶▶ Regulations require removal of solids, organics, contaminants and pathogens
 - ▶▶ Examples:
 - a. Biochemical Oxygen Demand (BOD)
 - b. Ammonia, Nitrates (Nitrogen)
 - c. Fecal coliform and E.coli
 - d. Product reclaimed water safe for reuse
 - e. Produce biosolids safe for beneficial use or land-filling

Councilwoman Suttles said that it was mentioned that they were trying to get rid of other items within the sewer and asked how they plan on doing that. She said that the City is currently accepting old prescriptions at drop off points. Mr. Burhmaster said that right now there is no consensus on what represents a risk and regulations are not in place.

- ▶ TREATMENT ALTERNATIVES CONSIDERED
 - ▶▶ Extended aeration (oxidation ditch)
 - ▶▶ Modified Ludzak Ettinger (MLE) conventional activated sludge
 - ▶▶ Membrane Bioreactor (MBR)
 - ▶▶ Sequencing Batch Reactor (SBR)
 - ▶▶ Integrated Activated sludge and fixed film (IFAS)

▶ Fixed Film Processes (eg. Trickling filters)

Mr. Burhmaster said that they have focused on the MLE and MBR; the difference between the two is how they remove the solids from the process and there are cost tradeoffs between the two. He said that the capital costs are not that much different; the difference is in the operating costs which are higher for the MBR.

Councilman Hanna asked if one type was more efficient than the other. Mr. Burhmaster said they were similar; they all meet the objectives, but they get a higher quality effluent with MBR, although that is not required by regulations.

Councilman Blair said that it was mentioned that the system provides a B+ effluent, and asked at what point, and at what cost, they could get to an A system. Mr. Burhmaster said that as soon as they make major improvements it will kick them into an A+ standard. He said that they can operate on B+ until they make a major improvement or expansion. Councilman Blair asked if the A+ took out the pharmaceuticals. Mr. Burhmaster replied that it did not. He said that they did not know what the cost would be to do that, but it would be expensive.

Mayor Kuykendall asked if they would be grandfathered in. Mr. Burhmaster said that with any major expansions now they would not have those regulations. He does not know when they will come and what they might be. Mayor Kuykendall asked at what point they would be grandfathered in. Mr. Burhmaster said that once they implement a project they would be, but that does not guarantee that they would not impose a new regulation at some point.

Councilwoman Lopas asked if either of the systems could be converted at some point in the future to one that would remove the pharmaceuticals. Mr. Burhmaster said that they get a higher quality effluent from the membrane, so it is possible that it could be an advantage down the road; however, the MLE would not preclude them from adding such a system in the future. He said that there are a number of systems being contemplated for pharmaceutical removal, but there is no consensus at this time.

Councilman Hanna asked if there was any way to sell the solids received from the process. Mr. Burhmaster said that for most plants in the country there is not an economic benefit; however, there are treatment plants that get into the business of selling the biosolids. He said that there is always that potential, but it takes quite a bit of effort to establish that type of program in terms of marketing, labeling, producing and bagging the product.

▶ TREATMENT ALTERNATIVES EVALUATION CRITERIA

- ▶ Step 1- initial screening
- ▶ Step 2 – detailed cost evaluation
- ▶ Capital costs
- ▶ Operating costs

- ▶ Non-economic factors
 - a. Operations/complexity
 - b. Proven track record
 - c. Compatibility with existing facilities
 - d. Maximizing use of existing facilities
 - e. Footprint requirements
 - f. Compatibility with potential future advanced treatment processes

▶ DRIVERS FOR FACILITY EXPANSION

1. Last major improvements – Sundog 1989 – Airport 1998
2. Recent substantial population growth
3. Increased wastewater concentrations
4. Regulations becoming more stringent
5. Equipment reaching end of useful life

Mr. Courtney then continued the presentation, noting that they were repeating the slide because the drivers form the background for the presentation and they now wanted to look at more detail of the driver, such as population growth, and wastewater concentration.

▶ MAJOR FACTORS DRIVE IMMEDIATE NEEDS

Councilman Blair said that in the past they have been overwhelmed with floodwaters with several rains and floods overloading the plants. He asked if that would be corrected with the new improvements.

Mr. Courtney said that inflow and infiltration (I&I) is a huge problem with the city's system. He said that it is somewhat unique in that many of the collector lines are in wash and creek areas. He said that does affect the operation currently but they have addressed it in the Master Plan and future improvements. He said that they can help by tightening up their rehabilitation of sewer lines and with treatment for pharmaceuticals. The other way is to address it at the treatment plant, with receiving old pharmaceuticals as they are currently doing.

Councilman Blair asked how they add in additional moisture, and if the new system added in recharge water. Mr. Courtney said that Prescott has taken good steps to keep and reuse every drop of water. In the Master Plan it continues and increases that water cycle to keep all of that water. He said that the waste concentrations is a big issue and is a huge driver on the sizing and required equipment.

Mr. Burhmaster then continued the presentation addressing the following:

▶ MASTER PLAN RESULTS – SUNDOG WWTP CAPACITY

Mayor Kuykendall asked if they were creating a problem with the success of the conservation efforts. Mr. Burhmaster said that it depends on their perspective. It is a good thing in terms of conserving water, but there are impacts like they have discussed. He said that as long as the pounds of solids are coming in that controls, so they are somewhat independent.

Councilman Blair asked what kind of maintenance issues were created with the solids concentration to move through the system. Mr. Burhmaster said that can be an issue for a flat sewer line with more solids, with the potential for depositing and causing odor concerns.

- ▶ MASTER PLANT RESULTS
- ▶ SUNDOG FLOW INCREASE CURVES

Mr. Courtney said that a lot relates to the work done previously on the City's wastewater collection system. When they embark on a Master Plan they want to strike a balance between the recommended improvements. On one side they want to make sure they meet the immediate needs of the City, but on the other side they do not want to make recommendations that over commit unnecessarily too early in the process. In order to do that they establish a range of projected flow increases to get their arms around recommendations and how they may impact the City in future years.

Mr. Burhmaster said that with looking at a 3 mgd capacity, anywhere from 5-10 years they will need more capacity at Sundog.

Mayor Kuykendall asked what they were looking at with the Sundog Plant. Mr. Burhmaster said that they were recommending for Phase 1 improvements and buildout of the wastewater treatment plant the use of some old sludge drying basins.

- ▶ SUNDOG WWTP IMPROVEMENTS
 - ▶ Immediate Needs:
 - Replace existing filters (underdrain failure)
 - Process (de-nitrification) improvements
 - ▶ Phase I Expansion:
 - Solids handling upgrades
 - Equipment redundancy issues
 - Odor control improvements
 - Septage/grease receiving facilities
 - Flow equalization facilities
 - Expand plant capacity

Mr. Burhmaster said that there have not been complaints at the Sundog Plant but as development gets closer and closer they are recommending a few steps to take to address odor. He said that the public needs an outlet to dispose of

septage and grease and it is best to have a facility where they can bleed them into the system. He said that they are recommending such a facility at the Sundog Plant.

- ▶ MASTER PLAN RESULTS – Sundog WWTP
- ▶ MASTER PLAN RESULTS AIRPORT WRDF CAPACITY

Mr. Courtney said that redundancy is a bigger issue at the Airport Plant than at Sundog, as there currently is no redundancy at the Airport Plant. He said that they have one clarifier and if it goes down, they are out of business.

- ▶ MASTER PLAN RESULTS AIRPORT WRF
 - ▶ Immediate plant expansion
 - a. Preliminary treatment
 - b. Biological treatment
 - c. Secondary clarifiers
 - d. Filtration
 - e. Disinfection
 - f. Solids Handling
 - ▶ Provide for adequate equipment redundancy
 - a. Secondary clarifiers
 - b. Filtration
 - c. Disinfection
 - d.

- ▶ RECOMMENDED CAPITAL IMPROVEMENTS

Councilman Hanna asked if the secondary clarifier was only needed at the Airport or at both plants. Mr. Courtney said that it was needed at both facilities, but Sundog is older and more established, and it has more redundancy.

Councilman Blair asked what caused the failure and what would eliminate it in the futures. Mr. Courtney said that the filters are 20 years old so some of these things were not anticipated 20 years ago. It is a structural system and when the underdrain is removed they can look at the cause of failure for that and try and make sure it does not happen again. He said that they are also considering a different type of filtration system that would not rely on those structural underdrains.

- ▶ CAPITAL IMPROVEMENT PROGRAM FUNDING/FINANCING OPTIONS
 - ▶ Rates
 - ▶ Bonds
 - ▶ Grants & Loans
 - ▶ Impact Fees
 - ▶ Cash Reserves
 - ▶ Alternative Project Delivery

Mayor Kuykendall questioned whether the turn in the economy would change the numbers and timeframes. Mr. Burhmaster said that they have tried to capture the nonaggressive years and that is why they have provided a growth curve with a high and low.

Mayor Kuykendall asked if they anticipated the growth potential for the Sundog Plant and if they could handle it. Mr. Burhmaster said that they have; when everthing fills in that area the 5.4 flow capacity would accommodate it and that is what they were planning for. He said that the Airport Plant is huge for growth potential and the 9.6 is far above anything they were experiencing now.

Mayor Kuykendall asked if during any of the conversations on long-term regional cooperation with Chino Valley and Prescott Valley there had been any interest on the part of Chino Valley to share in the costs of the Airport Plant. Mr. Nietupski said that there have been no conversations along those lines. He said that if that was to be contemplated it would change the model and they would have to consider the additional flows; it would change the whole dynamic.

Councilman Suttles asked the City Manager what they would be doing with the information. Mr. Norwood said that staff will bring recommendations to the Council during the goals retreat. He said that they were also in the process of updating the water and sewer rates. He said that there is no regulation that requires nice paved streets, but they are federally required to have capacity at their treatment plants.

Councilman Blair said that the Council retreat would be an appropriate time to look at all of the funding tools and information available on them. Mr. Norwood said that they do have a lot of those tools, although some have been taken out of their toolkit. He said that they would have that information ready for next month.

Councilman Lamerson asked if they had taken into account the obligated water and the fees associated with the importation of water. Mr. Courtney said that the Wastewater Treatment Plant Master Plan was based on the General Plan and the land uses included in it. There are a lot of assumptions in that but the foundation does not change. When they talk about buildout it is based on the General Plan.

Councilman Lamerson asked if the proposed annexations were considered. Mr. Courtney said that they used the information from the General Plan and added to it the proposed west airport area annexation, as well as the area east of Granite Creek.

Councilwoman Lopas said that the septics that are pumped come to the City's facilities and she asked if the calculations considered associated growth in the County. Mr. Courtney said that the Master Plan did assume that at build out the

existing nonsewered areas in the City limits would be sewerred at build out, but it did not assume outside the General Plan. Councilwoman Lopas noted that the City can control their growth but not outside of the City limits.

Councilwoman Linn asked if this would be part of the \$40 mil cap that was just passed through Proposition 401. Mr. Podracky said that it is certainly something that needs to be considered. Councilman Lamerson asked if Proposition did not exclude public health and safety issues. Mr. Podracky said that he would need to look at it further.

Mr. Nietupski said that the City is currently undergoing a rate analysis which contemplates the CIP in the presentation today and also the CIP they have developed for the water system.

Mr. Norwood said that he knows that comparisons are difficult and misleading, but he was talking to a City recently that was going to build a 15 to 16 mgd facility and their cost estimate was \$55 million. He asked why they were talking \$88 million for these improvements. Mr. Courtney said that there were contingencies included but the estimates were based on real projects with planning level cost contingencies. Mr. Burhmaster added that some of the improvements they identified were not related to expansion of the plant.

2. Adjournment.

There being no further business to be discussed the Workshop of the Prescott City Council held on December 1, 2009 adjourned at 2:35 p.m.

MARLIN D. KUYKENDALL, Mayor

ATTEST:

ELIZABETH A. BURKE, City Clerk