

**CITY OF BELLEVUE
SPECIAL MEETING**

**BELLEVUE CITY HALL
COMMISSION CHAMBERS**

February 25, 2004

MAYOR STEVE BAIRSTOW
Seat 1 COMMISSIONER ABSHIER
Seat 2 COMMISSIONER MOORE
Seat 3 COMMISSIONER CHAFFIN
Seat 4 COMMISSIONER ANDERSON

PRESENT: MAYOR BAIRSTOW; COMMISSIONERS: ABSHIER, ANDERSON, CHAFFIN, MOORE; PUBLIC WORKS DIRECTOR MONROE; CITY CLERK/ADMINISTRATOR McKAMEY; DEPUTY CLERK DeGENNARO

Sewer Treatment Plant Options

Special Meeting for the Sewer Treatment Plant Options was opened by Mayor Bairstow. The meeting was turned over to Commissioner Moore who introduced Engineer, Ronald Ferland.

Mr. Ferland apologized for missing the last meeting and then Mr. Ferland went through his report that was handed out to the Commission. Using Power Point slides he pointed out that in 1993 to 2003 the wastewater flow projections show not a lot of population growth. It is assumed that the all future growth within the planning area would be connected to the sewer as well as the water system. Population growth for the area is projected to increase at an average annual rate of 3.2% for the 20 year planning period. Flow projection is 760,000 GD and currently using 390,000 GD. The existing wastewater facility has a permitted capacity of 0.58 MGD and effluent disposal permitted capacity at Baseline uses 300,000 GD and the City sprayfield uses 300,000 GD. Therefore, the City needs approximately 180,000 GD for projected growth in the treatment area and 160,000 GD in effluent disposal.

The Engineer stated that the treatment plant is permitted for 0.58 MGD the facilities that are there today cannot treat 0.58 MGD. He stated that at Plant #1, there are predominately old steel tanks which are 20 feet above ground retrofitted back to the 1970's and are almost 60 years old. Therefore, he would not recommend that the City continue using these tanks as part of the new system. As a result, all the options in the report assume the demolition of the metal tanks at treatment plant #1. Plant #2 is in good shape and could reliably treat the designated capacity. The only problem is that it only has air lift pumps and the return and waste sludge capacity would not be sufficient to keep up with the flow once running at maximum load. The last thing is that there is very little to no sludge digestion, no place to hold sludge which once generated needs to be processed and moved off. The processing is very inflexible because you have not conducted the waste sludge process of digestion.

Mr. Ferland stated that the idea is to make the wastewater plant an ecological system. You want to create an environment that makes the bugs the happiest they can be so that they can do the best job possible. Unfortunately, with the facilities that are out there they (bugs) can not do it for the planning horizon.

Commissioner Anderson stated we are doing that now and the Engineer stated yes the bugs are doing the job now for the 390,000 GD but would not be able to do it for 0.58 MGD. Commissioner Anderson asked the Engineer to look at what number of gallons the bugs are going to stop working under the present system. Mr. Ferland stated he would check into that for the Commissioner.

Mr. Ferland stated when looking for effluent disposal alternatives for the additional 160,000 GD, the following criteria were evaluated:

1. Soil Characteristics - soil needs to perk water rapidly and not stand on site; need Hydrologic Class A soils, not clay;
2. Location - the closer to the existing facility and to the existing transmission facilities the cheaper the costs would be to the City because there would not be the need to build pipelines;
3. Size requirement - basically rapid infiltration basins (RIBs) versus sprayfields;
4. Future Expansion capacity - in Florida you have a growth that can occur like an explosion or a slow build up over time and Belleview is in the middle of where everything is going to happen. So there is a need to make sure that the effluent disposal site chosen is not limited and has room for future expansion capacity;
5. Environment Assessment - that the effluent disposal has no negative impact on environment and is a benefit to the environment, residents, and ecological system as much as possible;
6. Surrounding Land Use - in the past you had a real problem with where the sprayfield was located and we do not want to go through that again. We want no impact to the surrounding land uses and we looked at sites near industry or other sprayfields not near residential neighborhoods;
7. Sinkhole Potential- Belleview is located in a karst geology area which has a soil surface with the Florida aquifer under limestone with no confining layer between the land surface and the Florida aquifer. The clay layer that goes all the way through makes it highly prone to sinkholes. For the effluent disposal alternatives we are looking at areas not prone to creating sinkholes. The City currently has a sprayfield because it had a sink hole in a perk pond at the existing plant.

Mr. Ferland stated that given the criteria he was recommending three sites for consideration:

- a) Associated Grocers percolation ponds have 0.200 MGD permitted capacity in place. If the permit capacity was not in place, he would not recommend this site because of the sinkhole potential.
- b) Marion County Sprayfield has 250 acres of sprayfields at the Silver Shores Wastewater plant. Mr. Ferland stated that he talked with them about carving out 10-20 acres for the COB effluent disposal needs and they would require a hydrogeological investigation of the site to assure the County that the site can provide sufficient effluent disposal capacity to meet the needs of both entities prior to committing to COB. This would give the City 150,000 GD and the beauty of that is it is a sprayfield that is surrounded by the Marion County and Ocala sprayfields.

- c) Spruce Creek Golf Course irrigation has the capacity of over 1.0 MGD to irrigate 200 acres of golf course and they are trying to balance between using ground water for potable consumption or use potable or ground water for irrigation. They would take every drop of water they can get so that the alternative water supply would be more available to their development for potable consumption.

Mr. Ferland reviewed the maps (via Power Point Presentation) that were in the agenda packet with the Commission.

Mr. Ferland stated once he picked the three sites he did a value analysis to determine the best economic option available. This value analysis includes the construction cost and the annual cost over a 20 year period and then he brought it back to 2004 dollars.

1. Pipeline maintenance uses an ERA cost curve number of \$500/mile/year
2. Annual Sprayfield Operation & Maintenance costs pertain only to the Marion County Sprayfield.
3. Irrigation pumping applies only Marion County Sprayfield option.
4. RIB Maintenance applies only to Associated Grocer.
5. Baseline Golf Course Irrigation Electrical costs applies to the Marion County and Associated options, but not to Spruce Creek. Spruce Creek and Baseline are the same type of use so there is no need to pay the electric costs associated with Baseline Golf irrigation system.

Therefore, the cheapest construction cost is \$523,100 for the Associated Grocers which includes buying the RIB's because you are purchasing the land and the value of the improvements under the RIB's; add in the O&M costs of \$249,700 and the total present worth is \$772,800.

The second option costs \$641,800 which is the Marion County Sprayfield which includes buying the land and installing the sprayheads; add in the O&M costs of \$387,500 and the total present worth is \$1,029,300.

The third option came in at \$910,800 and that is the pipeline from the railroad to the Spruce Creek Golf Course; add in the O&M costs of \$23,500 and the total present worth is \$934,300.

Mr. Ferland stated now we proceed to the Treatment Process Alternatives and we looked at the treatment process alternatives.

- 1) The Oxidation Ditch Treatment Train
- 2) Extended Aeration Treatment Train
- 3) Sequence Batch Reactor (SBR) Treatment Train
- 4) The fourth option would be to put expansion alternatives on the existing site. This should be considered because you have the site and you need to take as much advantage as possible of the existing infrastructure and add on to it at the existing site versus building another plant at another site. The City could maintain existing plant capacity of 0.58 GD and do upgrades as needed and send the rest of the flow to Marion County Wastewater treatment plant in Silver Springs Shores. That would be 180,000 GD in the 20 year projection that you would send to Marion County.

5) The fifth option would be to decommission the existing plant and send everything to Marion County, basically you would get out and all the wastewater treatment flows and costs would go to Marion County and the City would pay the County their wholesale rate which was quoted as 85% of their retail rate.

Commissioner Anderson questioned the reasoning for taking down the tanks and Mr. Ferland stated that they evaluate each of the treatment process units and capacity which is in the Table in Section 3 of this report. Basically, the tanks are 60 years old and are showing signs of corrosion. We don't know the integrity of the tanks, but they are showing signs of fatigue. Since the tanks are so old that concerns him in regards to what could happen in 4 to 5 years. The City has gotten its money out of the tanks and concrete tanks last longer than steel. Mr. Ferland recommended taking the 3 circular steel tanks down and sell them for scrap metal and put in other tanks. PWD Monroe stated that he asked Mr. Ferland to specifically look at the tanks. Commissioner Anderson asked if the engineer tested the metal for fatigue. Mr. Ferland stated that if the Commissioner would physically look at the tanks he would see that they are serrated because the metal has worn away and these tanks are not in the area that comes in contact with the wastewater.

Commissioner Anderson asked if the surge tank effluent comes into the system are we keeping that or doing away with that. Mr. Ferland stated that he was going to keep that because the collecting system is fairly old and this serves as a barrier to the rain flow infiltration. If the City goes with the SBR process, equalizing the flow is not as important in the treatment process because whatever comes in goes into that tank. Therefore, we could take that out, but that is a design feature that would need to be discussed. PWD stated that if the plant is going to stay at that location then he would look at the design of that tank and put partitions in and use half of it on a normal basis and half for emergencies. Mr. Ferland stated he was going to look at it for a possible surge tank for the filters.

Commissioner Abshier asked if it could be redesigned to keep it away from the retention pond because in the event of a hurricane that is where all the City's water would go. PWD stated that what Commissioner Abshier is saying is if we don't need that for the treatment plant we may want to keep it for the spill over of stormwater.

Total Present Value Costs Summary for the alternatives (Table 4-11):

1. Oxidation Ditch Expansion

Associated Grocers, \$6,909,703
Marion County Sprayfield \$7,166,214
Spruce Creek Golf Course \$7,071,238

Spruce Creek effluent purchase @\$0.13/kgal \$6,779,349

2. Extended Aeration Expansion

Associated Grocers, \$7,218,337
Marion County Sprayfield \$7,474,848
Spruce Creek Golf Course \$7,379,872

Spruce Creek effluent purchase @\$0.13/kgal \$7,087,983

3. SBR Expansion

Associated Grocers, \$6,840,860

Marion County Sprayfield \$7,097,370

Spruce Creek Golf Course \$7,002,395

Spruce Creek effluent purchase @\$0.13/kgal = \$6,710,505

4. Partial Diversion to Marion County/Maintain Existing Treatment Capacity \$7,953,002

5. Total Diversion to Marion County/Decommission City Plant \$9,922,454

The Plan Recommendation which is the lowest cost alternative is the Sequence Batch Reactor at the existing wastewater plant site with the Spruce Creek golf course irrigation at \$.13/kgal. If you cannot come to terms with Spruce Creek for some reason then the second choice is Associated Grocers RIBs.

Mr. Ferland stated from his experience at 200,000 GD you will have sinkholes this is not unusual, but you have to be able to repair it and put it back into service. Department of Environmental Protection will not be overly concerned if it is an acute occurrence which is once in 5 years. However, if it happens chronically every 6 months or even once a year then you will have a problem and you will be looking for another effluent disposal option. Therefore, he stressed to the Commission, seriously consider the Spruce Creek or Marion County options.

Mr. Ferland stated you have capacity now and if you do this you will:

1. have capacity for the next 20 years
2. capital financing plan a payment of 3.6 million cost 1.3 in wastewater impact fees to spend for this activity
3. loan amount of 2.3 million
4. total loan amount of 2.6 million and that would include the City's current SRF loan of \$946,000

Mr. Ferland stated that the tentative schedule is as follows:

- a) City holds a public hearing to adopt the plan and issues an adoption Resolution in April 2004;
- b) FDEP, State Clearinghouse reviews facilities plan in June 2004;
- c) Design completed and permits obtained in April 2005;
- d) Certification of availability of all sites in April 2005;
- e) Advertisement/bid opening/construction contract award in June 2005
- f) Construction completed May 2006

Mr. Ferland stated that concludes his presentation and asked if anyone had any questions.

Commissioner Abshier stated the agreement to handle the City's reuse water would be with Spruce Creek and not the County. Mr. Ferland stated that is correct. PWD stated that the Marion County sewage treatment system that services Spruce Creek is at capacity; it is a 200,000 GD plant. In three months with the expansion that Spruce Creek is doing they will be in a bind for

additional capacity. Marion County is not building a new plant there and the master station pumping effluent from Spruce Creek up near the sprayfield if they do that then Spruce Creek loses any reuse water they had treated on site.

Commissioner Abshier asked if we are able to negotiate either line costs or so many gallons. PWD stated their reuse ground water is very critical they don't have enough now and they are expanding with the golf courses and have 400 acres to irrigate. That takes lots of water. Commissioner Abshier asked what alternatives does Spruce Creek have. Mr. Ferland stated that they could change their course to a link style or a desert type course, but they do not have enough ground water to irrigate golf courses and supply their domestic needs.

Mr. Ferland stated that St. John's has an Alternative Water Supply Grant Program that you could apply for. It is a 50-50 grant, but it is capped at \$100,000/year for projects that provide alternative water supply. There is an extremely high chance that you would get it. The Cities of Sanford and Orlando have received grant money through St. John's. The Federal Government is recognizing that these things have to be done and have put a lot of money into this program. The Florida region is getting a lot of that money and you would have a good chance to receive those funds. Get your Congressman to put some pressure on in your support under the Stag Bill.

The County is abandoning their existing plant and taking wastewater from their old plant and sending it to the Silver Springs Shores plant which is under construction. If we are both building pipelines in the same corridor - which would run from Highway 25 through the power line easement, it would be cheaper to do it together. Mr. Ferland stated that he likes this option because it would be cheaper and it is the greater good for the COB, for the environment, for the ecology of the area, and for the ground water system. PWD stated that it would give us much greater effluent disposal capacity.

Commissioner Anderson asked if the County leaves Spruce Creek would they shut the plant down or keep it running. Mr. Ferland stated it will be shut down because they are having trouble with it now and are trucking the wastewater out because the plant cannot handle it. Their problem is if they don't meet the public access standards, where they can use it for irrigation, they have nowhere else to go with it and that is the reason they ship it out.

Commissioner Abshier stated someone should be talking to them to see if they are willing to negotiate with the COB. PWD stated that the County maybe willing to invest in the pipeline and negotiate with the City. Mr. Ferland has met with them to find out what their needs are and then sent them a letter explaining how he came up with the \$.13/kgal, but we wanted the input from the City before going deeper than that with them. Commissioner Abshier stated that he wished they had gone further with the discussions with the County.

Commissioner Abshier asked if the Spruce Creek and the Associated Grocers options do not pan out how many gallons can we pump from the golf course on Baseline Road. Mr. Ferland stated that the City is permitted for 600,000 and the golf course could handle 400,000. The limitation is how much can the golf course irrigation system handle in their holding pond. He stated that the maintenance people told him that 700,000 gallons is the most they can handle.

Commissioner Abshier asked the PWD how large is the City's sprayfield now and PWD stated 28 acres of which 20 acres are under irrigation and we are tied to ship 80% of our water to that golf course under our Consumption Use Permit. If the City decides to use it for just effluent disposal, then we would have to rework our consumption use permit. Mr. Ferland stated today that is a touchy issue unlike 5 years ago. Commissioner Abshier asked why they would want us to do this when we are sending it from one golf course to another. Mr. Ferland stated to send it from golf course to another is not a problem. They want to make sure that the 85% criteria is met which provides that you supply your water to an entity that would use ground water if they did not have your water. The City would be tied into providing that water is used for some beneficial use. They don't care where it goes, just that it is being used beneficially and offsets domestic or ground water use

Commissioner Anderson asked about the difference between a golf course and sprayfield. Mr. Ferland stated that a sprayfield is used just to get rid of the water; a sprayfield does not have to be irrigated. On the other hand, a golf course needs a lot of irrigation or they have problems and that reused water would offset the use of the ground water. They are paying now \$.05 to \$.13 on an annual basis so it is easier for them to pay; we know Spruce Creek will pay at least \$.05.

Commissioner Abshier asked if anyone has considered the sports complex as an alternative since it is irrigated with City water. PWD stated that they discussed it to some extent, and it would be similar in costs as the Marion County option except there would be no land cost. The Commissioner stated there is 60 acres and the PWD stated it is closer to 80 acres if you include the City's portion.

PWD stated that he had a related item that he would like to include in this project. If the Commission decided to expand the existing facility he would like to include the bottleneck that occurs when getting the effluent from the Baseline Road corridor down through town to the treatment plant. He hoped to get grants to help alleviate that problem and he helped the problem by taking some of the flows and rerouting them directly to the treatment plant through a force main. There have been discussions with the developers who are building several hundred homes on Baseline Road. The PWD stated that if we go ahead with this project then we need to include some kind of remedy to extend the force main basically from the flower shop on Baseline Road along the proposed Baseline extension, down to where the railroad crosses Highway 441 and then directly to the treatment plant with some sort of combination gravity sewer or force main. That would solve our problem and we need to look at service basin designs to come up with ways to alleviate other problems there.

Mayor Bairstow stated we have three treatment alternatives, the Oxidation Ditch Treatment, the Extended Aeration Treatment and the Sequence Batch Reactor that were recommended by the Engineer, but which one would the PWD recommend. PWD Monroe stated that he was familiar with the Oxidation Ditch Treatment, and the Extended Aeration Treatment which is what the City has now, but he was not familiar with the SBR and he would like some time to investigate that process and talk to the operators and visit the cities that are now using that technology before giving his recommendation.

Mayor Bairstow stated it looks like we will be expanding the current facilities with one of these three options that have been recommended by the Engineer. PWD Monroe stated that when he read the report he was pleasantly surprised at the numbers and if the County would go along with some joint activity it could be even cheaper. Considering that the surge basin is in the project and considering the history of the Marion County sprayfield with the COB, putting the treatment plant or sprayfield outside of the City would be difficult. The current plant has portions that are 60 years old so for a long term advantage to the City, the best route would be to build a new plant

Mayor Bairstow stated that as he understands it, the engineer is recommending the SBR Expansion with the Spruce Creek Effluent purchase (Table 4-11) and the PWD states that he likes the (Table 4-11), but has not decided which of those three treatments. The PWD stated that is correct.

Commissioner Anderson stated the City is currently at 0.58GD and flowing 0.39GD. Mr. Ferland stated we assume you are doing 0.58 GD but it cannot be reliable to continue doing 0.58 GD. The Commissioner asked how many additional gallons can we get for three million dollars and Mr. Ferland stated it can be expanded to 1M/day if your growth expands. At the present time, we cannot justify the 1M.

Commissioner Abshier asked about the population growth and the growth of commercial developments because restaurants eat away at capacity in a hurry. Mr. Ferland stated that the flows included commercial and residential per capita flow. The mix of commercial and residential, as the City grows you will grow at the same ratio, which is 1 restaurant for 10 homes. The Commissioner stated that he was afraid that with the growth of the City that the City will be at the 760,000 in less than 10 years. Mr. Ferland stated that the design will accommodate expansion to 1M if there is an explosion of growth and then we would be able to justify it, but we can't now.

PWD stated that if that happens and the City manages the impact fees properly then the City will have the money next time be it 10 years or 20 years. PWD stated that the loan is based on 20 years and Mr. Ferland stated you can pay it off early.

Commissioner Anderson asked if the City should buy the Certified Grocers plant just for the permit and have it in case the City needs to expand because it is going to be harder and harder to get a permit. Mr. Ferland stated that it boils down to how much they want for it; if they want a lot of money then the answer is no. The effluent disposal is valuable, but not the plant. The Commissioner asked Mr. Ferland to write down what he would consider a good price for that plant.

Commissioner Chaffin asked if they hold a public hearing first or make a decision first and Mayor Bairstow stated if we want what is on Table 4-11 then we hold a public hearing. Clerk McKamey stated that the Commission does not have to decide what option to go with until the complete plan is written. Mr. Ferland stated that the public hearing will be the same as this

Special Meeting tonight, except you would also adopt the resolution. Mr. Ferland stated that the City would need to adopt his recommendations at the public hearing.

Commissioner Anderson asked if there was anything in the report that would show what revenue we would generate by selling our reused water for \$.13/kgal; money we would save by not having to pay the power bill at the Baseline Golf Course; the month payment if we do go with the SBR and if we would have to raise our rates to make that payment. Mr. Ferland stated that the annual electricity bill at the Baseline Golf Course is \$19,200. If you sold the water to Marion County for the \$.13/kgal you would receive \$24,000 from Spruce Creek for 500,000GD, and \$18,000 from 390,000 GD. The loan amount is \$2.7 million which comes out to \$160,000/yr payment for the capital debt service financing over 20 years. The full service rate impact will not occur until 2006-07 and he would finalize the rate report and the rate study report and get them to the Commission. A rough draft on 5000 gallons of service for the average resident, the monthly bill would go from \$17.00 to \$19.00/month for wastewater which is included in Section 6 of the report.

After much discussion on how the motion should be worded by the PWD and the Commission the following Motion was presented.

Commissioner Chaffin made a motion to approve on Table 4-11 the Oxidation Ditch Expansion, the Extended Aeration Expansion or the SBR Expansion with the Spruce Creek Effluent Disposal Option and Commissioner Moore seconded the Motion.

Commissioner Anderson asked what a yes vote means and Commissioner Chaffin stated that the PWD will go over the options and come back and report to us. Commissioner Moore stated that a no vote would eliminate all of the options.

**On role call: YES: Abshier, Chaffin, Moore, Bairstow
NO: Anderson**

PWD asked if any of the Commissioners would want to go on the site visit and Commissioner Abshier asked where they were going. PWD stated either Bushnell, Leesburg or Chiefland. Mr. Ferland stated that Chiefland is probably the oldest SBR around here (ten years) and you would get the industrial loading. It would be a good one to see because the City is comparable in size.

Meeting was Adjourned at 8:15 P.M.