Water and Sewer Committee Meeting
January 16, 2013
10:00 a.m.

The following were in attendance:
Bill Houston, Ray Johnson, Charlie Kerekes and David Lybrand. Bob Doub and Iris Hill, ex officio. Ray Archibald was excused. Bob Sandifer was present, representing the Edisto Beach Property Owners' Association, along with Jim Glennon and Janet McSwain. Mike Beckman of URS joined via conference call.

Ray Johnson called the meeting to order and agendas were distributed. Bill Houston moved that the minutes be approved as written. Charlie Kerekes seconded the motion, which passed unanimously.

The Committee discussed the revised water rates from American Engineering with operating costs included. The Committee calculated from looking at the results that with the current study, rates would increase 25% per year for three years. Compounded, this equals a 95% increase over current rates. The rate increase has not been applied to the 6,000 gallon consumer usage, but the Committee can assume the rate to consumers would basically double after the three years of implementation. Ray Johnson asked if the operating cost estimate was accurate. Ray asked Mike Beckman if energy consumption and the incremental operating cost were netted out increase. Mr. Beckman replied that it was netted out if the Town was to go with three ASR wells. However, the final recommendation came in with one ASR well, so there will be some net savings to that, but it will not be a significant number. Ray commented that he was specifically asking about the supply well's electricity. Mike said they did not include any additional O & M costs as far as electricity for the ASR well was concerned. Mr. Johnson said he would like to see those numbers netted out. Mr. Beckman asked Bob Doub to provide current electricity costs so that AE could determine those figures for the existing supply wells. Mr. Johnson asked Mr. Doub why there was an increase of $60,000 in operating costs. Mr. Doub said that one more person would definitely have to be added to staff to handle the increased work load of an R/O plant. Mr. Johnson then asked if the chemical add was "an add" to the current consumption of chemicals. Mr. Beckman answered that it was. Mr. Johnson then moved to the Executive Summary provided by American Engineering. He asked Mr. Beckman about the line item for operating costs of $383,000. Mr. Beckman said the explanation was in the report. Mr. Johnson said in the original report the total was $351,000. Mr. Beckman replied that that was from the first draft and it went up from $0.09/kwh to $0.11/kwh for power per Mr. Doub's recommendation. Mr. Houston said that all the figures were best guesses and the total cost is a supposition. According to his figures, Mr. Houston relayed that maintenance costs were going to increase $11.82/customer/month. Ms. Hill explained that because of the bonding requirements you can apply the same rate to water and sewer. When the rate study was done, they did water and sewer and then the Town asked them to take sewer completely out, so now the whole burden of the bond is going on the water rate. It does not impact the sewer at all but it does impact the water rate. Jim Glennon asked Ms. Hill if the rate adjustment included current O & M costs. Ms. Hill answered that they did, but it was based on what URS said the increase in operations is going to be. The question is, is that going to be all the increase is going to be, or is there going to be some reduction because we already have operations and maintenance costs and some of that will go away if you put in the RO and a high capacity well where you already have a well, you are not going to be dealing with those well costs, so that well cost will roll over into the new O & M cost. Mr. Beckman said the cost on O & M on existing wells will see a slight reduction in chemical usage and in power consumption. This will be a very small number, since you need to maintain the facilities that you have. Mr. Johnson stated

that the operating costs increase was based on the full volume last year of 1.8 million. Mr. Lybrand stated he would like to see a design/build number come in compared to what the current estimate is, and maybe some money could be saved that way. Mr. Kerekes asked if we could reduce the O & M costs. Mr. Beckman replied that was a "solid number." Mr. Johnson brought up the idea of reducing cost by not putting in the Middendorf well initially, since there was enough pumping capacity from the four wells that would be used. Mr. Beckman stated that was incorrect. He said that the two wells at the State Park would require a very expensive water line from there, those wells were not usable. Mr. Johnson pointed out that we had almost 900 gpm capacity at wells one, two and six. Mr. Beckman pointed out that the 16-hour-day rule had to be taken into account, which cuts the capacity to 600 gpm. Mr. Johnson asked if there was any possible way to upgrade the existing wells to reduce cost. Well six is rated at 550 gpm, and it is possible that could go up ten percent but as soon as the pumping rate is increased, you would have to go in and replace the pumps because pumps are designed for a certain pumping rate. Mr. Johnson wanted to know how that cost would compare to the cost of a new well. Mr. Beckman conceded it would definitely be significantly less, but the other thing you have to look at is the redundancy factor. If you take your largest well out of service, the Town would not have the required capacity to serve the RO system as specified. To accomplish this, you would need to install three new 500 gpm supply wells in the Santee and all the requirements to meet that. Mr. Johnson asked what the choke point was on a well, and Mr. Beckman replied that it was the size of the casing and where it is located in the aquifer and what its capacity is. The well production can be estimated but will not be known until a pump test is performed. Well drillers can perform a 24-hour test. Wells can be retested also, to see what can be gotten out of them. Ms. Hill asked if that had ever been done, to which Mr. Beckman replied in the negative. He said URS had designed wells 5 and 6, and they tied to get as close as possible without exceeding draw downs. Once you do the tests you try to maximize what you can get out of it.

Bob Sandifer of The Edisto Beach Property Owners Association introduced consultants Jim Glennon and Janet McSwain who looked at the URS plan for the R/O system and came up with recommendations to modify the plan to make it more cost effective. Mr. Glennon began the presentation, giving background on his involvement. The EBPOA engaged him in November to take a look at the draft report that URS had submitted, to see if there were any elements of that report that were adding extra cost. Both Mr. Glennon and Ms. McSwain have their own companies, but Ms. McSwain is more knowledgeable about RO systems. Mr. Glennon stated he thought he and Ms. McSwain had some valid points he asked the Committee and URS to consider. The document presented to the Committee outlines an order for the discussion, and points that may have some room for cost reduction. Mr. Glennon reiterated the point that they are dealing with the draft report, not the final report. Ms. McSwain began her report with a question of redundancy and how much the Town wanted to pay for that service. Her understanding is that the R/O system has 2 skids based on a 16 hour day, each can do 600,000 gallons or 1.2 million. Her question is, why is it sized that big when your 100% billed out, plus 20%, is coming in at 800,000 gallons. Ms. McSwain thinks that is 50% more than the Town needs, operating 16 hours per day. In talking with Hilton Head and some of the other places that have R/O systems, they have multiple wells, but they do not produce more than they need. Ms. McSwain believes the reliability of R/O skids is such that the probability of one going down is very small. Mr. Johnson asked if redundancy is required by the state. There is a requirement for redundancy if there is a requirement to provide reverse osmosis from a health standpoint. At Edisto, there is no such requirement that our water be treated through a R/O plant. Mr. Johnson said, "If we install our R/O and that's the water we provide, we do not have to have redundancy to the R/O unit?" Ms. McSwain replied, "Not in the event of an emergency, because you are not going to adversely impact health." Mr. Beckman restated the direction his company was given by the Town of Edisto Beach, to provide quality water except in cases of extreme emergencies. He

stated there has to be some kind of redundancy built in for down time and maintenance. Ms. McSwain said that she felt sure that was his directive, but now that the costs had come in and the Committee was not entirely satisfied, was it worth revisiting? Mr. Beckman said the actual cost of the total project would not be reduced by a significant amount just by going with one skid. Ms. McSwain said that the cost savings of just going with one skid would reduce the project total by only $300,000, but it would lead to savings in other areas as well. For example, the Town would not have to go with the Middendorf well. The Town needs 740 gpm, and if there are three wells you can operate two at a time, each on a 16 hour day cycle through them and each one can produce 370 gpm. Mr. Beckman asked if Ms. McSwain was using .8 or .6 mgd, to which she replied .8 as finished water with no blending. Mr. Glennon said he'd like to make three points concerning the redundancy. When it comes to DHEC regulations, a lot of things are negotiable. The water the Town has now meets DHEC standards. If you have to revert to that water for a week or two because the Town is operating on one unit only, the Town will pay $500,000 to make sure that does not happen. The suggestion of Mr. Glennon and Ms. McSwain is to start off with a single unit and negotiate that with DHEC. His second point is, if there is a failure of that one unit or it has to be shut down for maintenance, the Town can go back to existing wells and produce a lower quality water on a temporary basis. The third element of redundancy is if there is an ASR system in place and can draw on it during that down time and water quality shouldn't change that much. Mr. Beckman said he didn't disagree with Mr. Glennon, and if the Town wanted to go back and redefine the parameters of what the Town wanted to accomplish, it would change how URS would approach the project. He said that if the Town wanted to tell its residents that for the first year of use of the R/O system that residents would have salt water, they would go that route, but that was not the directive they were given. Ms. Hill replied that conversations did take place to that effect. Mr. Beckman replied that yes, the system they designed with redundancy at the R/O facility and the one ASR well, the possibility of having to go back to salt water was much less than what Ms. McSwain and Mr. Glennon were talking about. Mr. Johnson brought up the DHEC requirements, saying that he was under the impression that redundancy of R/O is a DHEC requirement. Ms. McSwain said that the existing system can be used as redundancy in an emergency. The Town has to decide if they are willing to use the existing system and quality of water in case of emergency. Is that something that is an acceptable scenario for the Town? The potential for that happening is higher if you have just the Middendorf well. Mr. Beckman stated the reliability of ground water supply wells is very good and Edisto Beach fully understands the biggest issue that the motor would go out, and that could be repaired in a matter of hours. Mr. Johnson asked if the Town was not already planning to blend some of the water. According to the process-flow diagram that she saw, Ms. McSwain said it does mix with well six, but these units have one flow capacity and if you can't get flow through there you're not going to get the pressure to push it through the R/O. Mr. Beckman said that the whole R/O facility is set up on BFDs so they could just treat the water from well number six. The URS study is still in the planning stage, so they have not finalized how much water will be brought from the existing wells. He pointed out that they were planning on using water from the existing wells mainly for cooling. Mr. Glennon had one final point, that he had the cost of eliminating one R/O unit at $500,000 as opposed to URS $350,000 because of the $150,000 in support costs. Ms. Hill wanted to know how reliable the R/O systems are, to which Mr. Glennon replied, "Very." Ms. McSwain said that once you get your chemical feeds and your system lined out, they are very reliable. The membranes can "foul" but that usually happens at start up because you didn't anticipate some chemical interaction with the water. You clean your membranes, you adjust your chemicals and once you get those things established, you're good to go. One good thing about ground water is that it's pretty constant as far as quality so you know what you're getting once you've gotten your chemical reactions lined out to be what you need. McSwain was wondering if the Town could put in three wells, any two of which could give the 740 gpm and whether or not you cut back on the R/O membranes if you're running 24 hours a day you still are only at 740 gpm. If you're running two wells at

a time at 370 gpms, you could still get your 800,000 gallons/day that you need. Mr. Johnson asked which three wells she was talking about, to which Ms. McSwain replied, "I was thinking well 6 and then maybe installing two other ones into the Santee." Ms. Hill clarified, "Instead of installing the Middendorf, you're talking about two shallower ones." Ms. McSwain was not sure if this was the most cost effective route. In order to run 24 hours, Ms. McSwain explained, you have to have 740 gpm in your feed water. Mr. Johnson said the consumption at .8 million gallons, which we would run at a steady state is 555. But you have to remember, Ms. McSwain replied, there's a 25% that you have to feed after that. Mr. Beckman reminded Ms. McSwain that if you add two more Santee wells, there will be a problem finding a location to put them and substantial water line cost because you won't be able to put them where the R/O plant is, they are going to have to be some distance away and the water will have to be piped to it. Mr. Glennon admitted they did not have a lot of information when they did their study, but were just looking for potential cost reduction avenue, by shifting from the Middendorf to the two Santee limestone. Mr. Beckman said he'd like to throw back information that URS looked at when they first started the project. Mr. Doub had a question for Mr. Beckman: Could we not utilize the Lions Club well and the Bay Point well and redo those two wells into the Santee (disassemble the wells and start over, going with a deeper well and basically re drill the well into the Santee). Mr. Beckman brought up the pollution free radiuses may not have been in effect at the time the original wells were drilled. Mr. Doub said that the Lions Club is the least producing well at 87 gpm and Bay Point is 100+ gpm. Mr. Beckman mentioned that once you start looking at Lions Club and you start looking at the horizontal separation between the wells at the golf course, we start getting into draw down issues. Administrator Hill asked Ms. McSwain if she was involved with the Middendorf well project at Hilton Head, and the costs of that well. Ms. McSwain said she was involved and did not have the information in front of her but could get it to Ms. Hill. Ms. Hill also asked for the year the well was installed. Mr. Houston pointed out that one of the reasons Hilton Head probably went with the Middendorf is because of the salt water intrusion into the Santee, which is a problem we may have here at Edisto. Mr. Beckman said that the water quality from the supply well was a major concern for them, and the degradation of the water quality two to five years into the project. Mr. Glennon said that everyone that he knew of that had an R/O system had gone with the Middendorf. Ms. McSwain said that with the Middendorf, there **may** be some reduction of stress on the Santee. Mr. Glennon said there was a significant difference in the quality of water between the Limestone and the Middendorf. He said that the Limestone would have a lot of calcium and high alkalinity. The type of membranes used depends on the well used. He asked if it was a correct assumption that you couldn't run on Limestone one day and Middendorf the next. Mr. Beckman said the final quality of the treated water would be affected. Ms. McSwain said that the chemical feeds would also have to be adjusted. If you don't have a steady water quality going in, you won't have a steady water quality coming out. The O & M costs for juggling the chemical feeds would be a "royal headache." But it could be done in an emergency. Mr. Johnson said on the current proposed schedule with the Middendorf well, it would run 16 hours and be shut down for 8. The Santee aquifer would be used to blend for temperature. Mr. Houston said the Town doesn't know for certain that we'd have to blend for temperature. Ms. McSwain complimented URS for "covering all their bases." Ms. McSwain called DHEC to get clarification on the 16 hour rule, and they couldn't explain why it was a rule. In the beginning it may have been to allow for cooling time for the motors. That does not apply today. Ms. McSwain asked Mr. Beckman if an exemption to the 16 hour rule could be applied for. She said there are municipalities that have been granted exemptions and run all their wells for 24 hours so that there feed water has consistency. Mr. Beckman stated that DHEC is very adamant about the 16 hour per day rule. Based on previous permitting because you are actually recharging the aquifer DHEC does allow you to run the ASR wells 24 hours a day, but he said he would highly recommend that we go with what we have. Not to say that once we get into the design phase we can ask for an exemption but it is not expected. Ms. McSwain agreed. Ms. McSwain said that blending can give you additional

capacity, if it is done post treatment. Mr. Beckman said they were not planning on blending with the ASR well, but there may be a potential for blending depending on what final quality of water the Town wants. The way it is set up, the capability for blending is there but what it would take to make that happen is included. McSwain agreed with the report that there is not enough savings in that kind of reduction based on blending. Mr. Beckman brought up the fact that because the fluoride level is so high customers will not want blending. Bob Sandifer brought up the point that if we plan and build on what we need today as opposed to what we may need in twenty years, he believes that would substantially reduce the cost of the plant facility. Mr. Johnson said if the Town decides to do that, and feed from the State Park wells, then the residents who live on that side of the beach will get all the "bad water." Ms. McSwain said that depends on what you eliminate. If you eliminate the ASR well that will be the case. Mr. Beckman said that another thing about not putting the ASR well in is that you'd have to blend the water all the time because you have to maintain water quality, and run the existing wells all the time to maintain water quality. Mr. Kerekes brought up the financing issue. There is a minimum size of bond that must be issued for the project to be cost effective. Mr. Kerekes is concerned that incremental increases will not take advantage of what the Town can get from the bond financing. Mr. Glennon asked if the Town had considered the State Revolving Fund. Ms. Hill reported that the Town had looked into that, and it is an option, even though it is a 20-year bond. Mr. Johnson asked about the ASR well: Is it possible to convert the existing State Park well to the ASR well? Ms. McSwain said she had not heard of that happening, and that the URS report had been confusing because at first it said DHEC would allow that. Mr. Beckman said that was strictly regarding field casing. Mr. Johnson asked about the possibility of redrilling or reworking an existing well. Bob Doub said he did not think that would be a substantial cost reduction. Mr. Beckman said that actually it would cost more because the Town would have to have the old system removed. The sizeable portion of the cost is fixed. Mr. Glennon said that he and Ms. McSwain had determined that they could trim almost 3 million from the URS proposal, but they based those numbers on the **preliminary report** that called for three ASR wells. Ms. Hill said that two of the ASR wells had already been eliminated, and the figure now was $8,800,000 as opposed to $11,000,000 from the preliminary report. The executive summary report quotes 8.462 million. Mr. Beckman stated that it went from 8.8 to 8.4 simply by moving from Town Hall back to McConkey Square. The current recommendations are: the distribution, the Middendorf, the R/O at the stated capacity and the ASR at the State Park. The question of sizing the system was brought up. Are we better off by sizing for current usage, without taking into consideration the peak usage in July, or should we size for peak usage and take future growth into consideration? Mr. Johnson said that the Town would have to put in all the elements, and that does not change the majority of the costs. Mr. Houston said the Town is facing a salt water intrusion that will eventually take our existing wells out of service. Then the Town will be forced to do something and the costs are unknown. If we take this step now, we will be set. We may have ten to fifteen more years, but it is evident that it is moving our way. As a Town, we need to prepare for the future. Ms. McSwain said one thing that may help to get the public on board is that interest rates and construction costs are at an all- time low. Mr. Doub asked about a timeline. Ms. McSwain suggested a design/build to accelerate the three to four year expected timeline. Mr. Johnson said that URS had 18 – 24 months for implementation; 3 to 4 months for bonding, 6 to 8 weeks on permitting. Mr. Beckman estimated two years before the Town is online. Mr. Glennon asked if that twelve months on the ASR included the delay on the back end for sampling. Mr. Beckman said that the existing wells can be used as sample wells. Mr. Sandifer asked when the average monthly increase would be available. Ms. Hill said that she would have to get the numbers adjusted, but was not sure of the time it would be available. Mr. Houston asked if grant funding was available. Ms. Hill replied that there was one, but the time constraint had been too short. The project had to be shovel-ready and the Town was not at that point. Mr. Kerekes said he thought the total for the grant was $300,000. Mr. Beckman stated he thought this project would lend itself very well to the design/build process. Ms. Hill

asked Mr. Glennon whether he had worked with Foster (PR). Mr. Glennon said he had not but he had several clients who had and they were all favorable. The decision was made to go ahead and meet with Council to update them, but the Committee was not ready to make a recommendation at this time. Mr. Houston thanked Mr. Glennon and Ms. McSwain for their input. Mr. Glennon said he still had questions about the demand requirements and blending. He is willing to work with Mr. Beckman to see if there is any way to reduce the costs associated with those two areas. Ms. McSwain looked at the numbers, and said the cost savings just for reducing the R/O skids is not substantial and will not affect user rates more than 10 - 15%. Ms. McSwain made the suggestion that if the Town gets the project through a vote, we should go ahead and build because of the fluctuating costs of equipment, particularly with the membranes. Mr. Johnson made the motion to get a hard number on costs of the design/build process. Mr. Lybrand seconded the motion which carried unanimously. Ms. Hill asked if there was a cost associated with that, and Mr. Beckman said that a meeting needed to be set up with the Water Committee and Mr. Beckman that would take at least an hour to go over the design/build process. Ms. Hill said she was not sure the Committee was at that point yet since the Committee was not sure of what they wanted. Mr. Johnson said he thought the Committee did know what they wanted and Ms. Hill asked for clarification. Mr. Johnson said the Committee wanted, in essence, what was outlined in the Executive Summary provided by URS. Mr. Beckman pointed out that if we were to ask for proposals on the design/build process **without** funding in hand, no one would respond to requests for proposals. Mr. Beckman went on to explain the design/build process. The owners decide this is the proper procurement method to be used, instead of the design/bid/build procurement method. Mr. Beckman reiterated his thought that this project would lend itself well to the design/build process. Most are not familiar enough to do this process in house, so most owners hire a program manager who helps guide the Town through the steps of the process. A program manager would also assist in writing the scope of work to advertise and request proposals from design/build firms. There are different ways of doing design/build. You can do design/build with a number up front or "progressive design/build" where the design/build team comes in and say "Go to 60% design" and they give you a guaranteed price. Either way, the design/build team has to do a significant amount of work prior to giving you a price. That is typically the way it goes. Mr. Beckman suggested it is in Edisto's best interest to get a program manager on board to assist with the process. Ms. Hill asked if we could incorporate value engineering into that request, and Mr. Beckman said that was one of the good things about design/build, you get that added level of both your engineer and your contractor working together to try and save you more money. He suggested the numbers in the report done by URS are the numbers the Town needs to go by. The Committee was unsure if they needed to go forward with the meeting with Town Council. Ms. Hill said she would give American Engineering the change in the numbers (8.4 instead of 8.8). Ms. Hill said she would give them both numbers. Ms. McSwain said that now that she had the most current information, she thought it was a better idea to go with the two skids if there was only one ASR well. It was determined that Mr. Johnson would speak for the Committee at the meeting with Council on January 24th. Iris said she would circulate the Executive Summary prior to the meeting. She said she thought it was online. Ms. Hill thanked Ms. McSwain and Mr. Glennon for their input and stressed how valuable it had been.

The media/public was duly notified of the date, time and place of the meeting on Friday, January 11, 2013.