

**Minutes Of
Engineering And Maintenance Committee Meeting
Of The Water Works Board
Of The City Of Birmingham
May 1, 2018**

An Engineering and Maintenance Committee Meeting of The Water Works Board of the City of Birmingham was held Tuesday, May 1, 2018, at 9:00 a.m., in the principal office of the Board, 3600 First Avenue North, Birmingham, Alabama, 35222, to discuss engineering and maintenance issues.

The following Committee members were present: Brett A. King, Sherry W. Lewis and Brenda J. Dickerson. Other Board Members present were: Tommy Joe Alexander, Deborah Clark, William R. Muhammad and George Munchus, who do not serve on the Committee.

The meeting was also attended by: Mac Underwood, General Manager; T. M. "Sonny" Jones, Assistant General Manager of Engineering and Maintenance; Darryl R. Jones, Assistant General Manager of Operations and Technical Services; Michael Johnson, Assistant General Manager of Finance and Administration; Grace Amison, Executive Assistant to the Board of Directors; Tammy Wilson, Executive Assistant to T. M. "Sonny" Jones and Darryl R. Jones; Mark Parnell and Mary Thompson Parnell Thompson, LLC; Patrick Flannelly, ARCADIS; Kelvin Howard, KWH, LLC; Tommy Palladino and Jesse Lewis, Agency 54; Birmingham City Police officer; Ben Sorrell, Chief Engineer; Luther Austin, SCADA Manager; Stephen Franks, Engineer; Jeremy Millwood, IT Specialist; Trey Finch, Kyle Sigman and Walter Scott, SCADA Analysts; Terrell Jones, Security Superintendent; Rick Jackson, Public Relations Specialist; Barry Williams, Business Systems/Operations Manager; Dana Nail, State Attorney General's Office; Chandra Abesingha, C. E. & Associates.

Chair of the Committee, Director Brett King called the meeting to order at 9:00 a.m. Assistant General Manager, Darryl Jones opened the meeting with prayer.

Following, agenda item 1 was a request for the Committee to recommend to the full Board approval of minutes from the February 6, 2018 Engineering and Maintenance Committee Meeting. Director Lewis made a motion to approve the minutes and Director Dickerson seconded the motion. Therefore, the minutes of the February 6, 2018 Engineering and Maintenance Committee Meeting were approved.

Next, agenda item 2 was a request for the Committee to recommend to the full Board to authorize the purchase of hardware, software and services for the SCADA Foxboro IA Server Upgrade Project at an estimated cost of \$1,035,713.00. AGM Darryl Jones provided a handout (a copy of which is on file with the Committee meeting book) of the proposed SCADA System Upgrades. SCADA Manager, Luther Austin presented the information to the Committee. Mr. Austin introduced Walter Scott, Trey Finch and Kyle Sigman, who make up the SCADA Analyst Team. The programming for the

process control equipment is performed in house by this team, according to Mr. Austin. Mr. Austin stated the objectives are to upgrade both the server hardware before it reaches the Obsolete Phase and the software to the latest versions. The Obsolete Phase means spare parts can no longer be acquired for these units and that will begin August 17, 2018. The servers are located at the SCADA CORE and 10 stations/plants around the system. The Foxboro servers control the Foxboro Intelligent Automation (I/A) Distributed Control System (DCS). They allow the operator to control facilities, generate reports and activate an alarm management component. The current servers have been in service since 2012 and are close to the end of their life cycle. Servicing and repairing these servers could result in extended downtime and the repairs will become difficult as replacement components required become scarce. It will also mean slower computing speeds and less storage space. After the servers enter the Obsolete Phase, the price to upgrade dramatically increases. The list price is \$2,395,000.00, but the advantage upgrade (customer preferred) price is \$1,035,713.00, which is a substantial savings. Mr. Austin stated management's goal is to install the new supported Foxboro I/A Server hardware to prevent possible delays stemming from repairs and servicing of obsolete hardware. SCADA will increase its speed and storage by upgrading its operating system and the Foxboro I/A software, which will result in increased reliability and redundancy. Director Munchus entered the meeting at 9:14 a.m. Foxboro was purchased by Schneider Electric in 2015 and they are a sole source provider, which means, no other company can provide this equipment or these services. Director Lewis asked if Staff had looked at anything better. AGM Darryl Jones stated this is just a piece of the system and no other company can provide this equipment. Director Lewis stated she would like Staff to look at other options. AGM Darryl Jones responded that we would be looking at \$10M to replace the entire system. Director Lewis stated the report should have included that Staff looked at other options. Patrick Flannelly stated he was working alongside Staff when this decision was thoroughly researched and the current system was purchased. Mr. Flannelly stated he believed the Board made an excellent decision resulting in the 20 years the system has been in operation. Director Munchus asked Director Lewis if the concern was the SCADA System or that it is sole source. Director Lewis responded that she wanted to make sure that the Board is on top of things from a technology standpoint and is prepared for the future. Mr. Flannelly stated, while he could bring information on other manufacturers for a system the size of the Birmingham Water Works (BWW), he could guarantee there is no functional advantage to have separate components nor to replace the current system with another one. Director King asked if he could get a motion to move this item to the full Board. Director Lewis made a motion to move the item to the full Board and Director Dickerson seconded the motion.

Following, agenda item 3 was a request for the Committee to recommend to the full Board to authorize the purchase of hardware, software and services for the SCADA Master Telemetry Unit (MTU) Modicon PLC Upgrade project at an estimated cost of \$315,059.00. SCADA Manager, Luther Austin presented the information to the Committee. Director Munchus asked what Schneider Electric's supply diversity plan looks like. AGM Darryl Jones stated he did not know, but he would get that information to the Board. Director Muhammad asked if money was in the budget this year for this purchase. AGM Darryl Jones responded yes. Director Muhammad asked if Staff could

compile a list of all replacement projects of this nature. AGM Darryl Jones stated technology changes very fast and the Birmingham Water Works is a major utility that must meet regulations as well. Staff can produce a list for the Board of future projects that are budgeted for replacement AGM Darryl Jones stated. Mr. Austin explained that the PLCs (Programable Logic Controllers) have been in operation almost 20 years and they are in Modicon's Obsolete Phase. Modicon will support them until 2023. The PLC monitors and controls pump stations suction/discharge pressures, flows from the filter plants and raw water intakes, tank levels, pump states, valve states, water quality information and alarm notifications. Director King asked how operators would signal for instance to increase the flow rate at Inland Lake. Mr. Austin responded that it would go over the radio network. Some discussion occurred regarding who now owns Modicon. Mr. Austin explained that Schneider bought out Foxboro and Modicon. The goal Mr. Austin stated is to install a new supported Modicon M580 to prevent possible delays stemming from repairs/servicing obsolete PLCs. This will result in continued reliable communication with remote sites, increased speed and storage, eliminating compatibility issues with the new Windows Operating Systems and increased fault tolerance and redundancy. Director Lewis asked how long it would take to complete this project. Mr. Austin responded about 3 months. The bottom line pricing for the 6-system modernization is \$278,085.00; for the spare parts is \$19,374.00 and for training is \$17,600.00, for a total of \$315,059.00. Director Munchus stated he believed this was a great investment and asked if this was the best pricing. Mr. Austin responded this was sole source and we are getting the best pricing. Some discussion occurred regarding entering the Obsolete Phase. Director Lewis made a motion to move the item to the full Board and Director Dickerson seconded the motion.

Next, agenda item 4 was a request for the Committee to recommend to the full Board approval to take bids for a SCADA Data Server System with off campus back up at an estimated cost of \$300,000.00. SCADA Manager, Luther Austin stated the Board's current data services have been in place for the past 15 to 20 years. We have been adding additional servers because new parts are not available any longer for the old ones. The servers are needed to run WebSCADA, IESWTR (Interim Enhanced Surface Water Treatment Rule) for turbidity data, pumpage data and historical archive data. We send monthly reports to ADEM containing information generated from these servers according to Mr. Austin. Director Alexander asked if SCADA keeps up with the flow from the reservoirs. AGM Darryl Jones stated the Board partners with the USGS and they maintain this information. Some discussion occurred regarding how far back you can obtain information. GM Underwood stated Alabama Water Resources keeps up with water flows in rivers across the state. Patrick Flannelly added that the Board reports daily what the volume is in the reservoirs and we know what is taken out, so this could be computed. AGM Darryl Jones stated SCADA generates data constantly across the system. This item is in policy with the Board's IT Department Darryl Jones stated. Director Alexander stated we could look at the past to predict the future. Director Dickerson asked if there are currently security risks. Luther Austin responded the fact that the operating systems are old presents some risk. This new system would bring us up to date with today's standards according to Luther Austin. Director Dickerson made a motion to move the item to the full Board and Director Lewis seconded the motion.

Following, agenda item 5 was a request for the Committee to recommend to the full Board approval to take bids for replacement of approximately 4,800' of 2" cast iron cement lined (CICL) pipe and 330' of 8" cast iron cement lined (CICL) pipe with approximately 400' of 4" DICL pipe; 4,440' of 6" DICL pipe; 880' of 8" DICL pipe and related appurtenances; and 100 water services along Pineview Road; Avenue "O" Ensley; Meadow Lane; 58th Street Ensley; 57th Place Ensley; 60th Street Ensley and Avenue "P" Ensley at an estimated cost of \$950,000.00. AGM Sonny Jones presented the item and stated Staff would like permission to replace a water line after the county completes their work in the Green Acres neighborhood. Director Munchus asked Sonny Jones if he knew the contractor for the county project. AGM Sonny Jones responded he believed it was Cleary out of Kentucky. AGM Sonny Jones stated explosives and the process being used is causing extensive breaks. Director Munchus asked if the county would reimburse BWW for any of the work. AGM Sonny Jones responded that Staff was currently in negotiations with them regarding this matter. Director Lewis stated she wanted to make sure the Board's presence is there and that residents know this inconvenience is not being caused by BWW. AGM Sonny Jones stated the break rate ratio on the pipe prior to the county work beginning was 265 and anything above 80 is considered obsolete. Director Dickerson asked how long this project would take. AGM Sonny Jones responded about 3 months. We will be going from mostly 2" main to 4", 6" and 8" main Sonny Jones stated. There will also be 100 water service lines replaced in association with this project. Some discussion occurred regarding how invasive the work being done is to the neighborhood. Director Muhammad asked if this is the usual way problems of this nature are handled. AGM Sonny Jones stated we have only done work like this one time before. GM Underwood stated BWW does cross work with the county all the time. Director Muhammad suggested having a Town Hall Meeting in Green Acres. Director Lewis requested this project go through the BWW Communications Committee so we can be clear to the residents what is happening and careful not to put the county down in the process. GM Underwood stated BWW needs to be transparent with the residents when they go in to begin this work. AGM Sonny Jones stated we are in the pre-bid stage so it could be a month before bids are awarded. Director Lewis made a motion to move the item to the full Board and Director Dickerson seconded the motion.

Next, agenda item 6 was a request for the Committee to recommend to the full Board approval to take bids on proposed renovations in the Engineering and Business System area on the first floor at the Main Campus at an estimated cost of \$250,000.00. Chief Engineer, Ben Sorrell presented the item. The purpose of the project is to more efficiently utilize the space on the first floor for the daily operations of the Engineering and Business Systems offices. There currently are thirteen cubicles, one long work table for auditors to use and two file rooms. The proposed configuration would have fourteen cubicles, two hard wall offices, two file areas and a relocated long table for auditors Mr. Sorrell stated. Director Clark asked if a quarter of a million dollars is the cost to add one cubicle. Mr. Sorrell responded that there would be one cubicle and two hard wall offices. Additionally, Chinese drywall in the area will be removed. GM Underwood stated Senior Engineers will be placed in the hard wall offices. Director Clark asked why there is a problem with the way things are now. Some discussion occurred regarding how

often auditors work in the BWW offices. GM Underwood responded the space is very small and that the auditors are here about three months of the year. Director Clark stated she needed to go down to the first floor to see for herself because she was not following the dots. AGM Sonny Jones stated this space was originally where Customer Service was located and where customers paid their bills. Some discussion occurred regarding the health risks of Chinese drywall. Director Dickerson asked if any of this space was allotted to the additional employees needed for the Jefferson County Sewer agreement. GM Underwood responded no. Mr. Sorrell stated the Engineer's cost estimate was \$250,000.00. Director Dickerson asked if the auditors work area would be larger. Mr. Sorrell responded no. Director Lewis stated she strongly suggested Staff go back to the drawing table and provide an update because you are saying we are getting a cubicle and two offices for \$250,000.00. Director Lewis asked why the Senior Engineers needed offices. Mr. Sorrell responded for privacy when they are supervising and meeting with employees. Director Clark stated there are a lot of private places around here. Mr. Sorrell stated the largest cost is for the new cubicles, furniture and work spaces. Director Lewis asked if there is another way to do this. Director King asked if he could get a motion to table the item. Director Lewis made a motion to table the item and Director Dickerson seconded the motion. The Committee agreed to send the item to Committee again. Directors Lewis and Clark stated they wanted to go see the space for themselves. Director Munchus asked if money was in the budget for this project. GM Underwood stated there was a line item for renovations but not specific projects. AGM Johnson added that he would have a presentation at a later Committee meeting to present to the Board for the Jefferson County Sewer agreement employee additions. Director Clark asked Mr. Johnson if he planned to spend money from the same budget on this project. AGM Johnson responded yes. Director Clark said in her household she could only spend money once and asked when this pie in the sky presentation was scheduled. AGM Johnson stated they planned to stay within the budgeted amount for the money line item. Director Clark stated she was not on this Committee but this was not fitting together for her. GM Underwood offered for Staff and Directors to go down and look at the space after the meeting today.

Following, agenda item 7 was a request for the Committee to recommend to the full Board approval of Utegration's Contract Extension Order 1 to the SAP Application Management Services Agreement at an estimated cost of \$526,751.00. A handout (a copy is on file with the Committee meeting book) was provided to the Committee members. Business Systems/Operations Manager, Barry Williams presented the item, which was the Billing and Collection portion of SAP implementation. Director Munchus asked if this was in the budget. Barry Williams responded yes. We are in year two now and we have reduced the cost we had originally anticipated. Instead of spending \$1.2M, we are under budget \$500,00.00. Director Dickerson asked what this is due to. Barry Williams stated we hired two internal resources and our employees have been trained. Director Munchus asked how we found the two internal resources to hire. Barry Williams stated Staff conducted a search while attending SAP Conferences, where one person was hired and one person was hired from ARCADIS. The ongoing 2018 SAP support with Utegration is \$43,895.00 per month and the annual cost is \$526,951.00. We are under budget by \$301,093.26. Director Munchus asked what is done with the surplus

amount. GM Underwood stated it goes back into surplus and we won't end up with the big reserve we started with. Director Dickerson asked if Staff had a vision of something innovative that the SAP implementation will provide as we move forward. Barry Williams responded that he believed it already has met expectations by having all systems on one platform and from an operational standpoint we can upload data daily to generate reports which assist in everyday operations. Director Munchus asked when the financial dashboards would be complete to tie in payroll. Barry Williams responded it should be complete the middle of next year. Director Dickerson made a motion to move the item to the full Board and Director Lewis seconded the motion.

As there was no further business to be brought before the Committee the meeting was adjourned at 10:26 a.m.

_____/s/
Mac Underwood
General Manager

_____/s/
Brett A. King, Esq.
Director

_____/s/
Sherry W. Lewis
Director

_____/s/
Brenda J. Dickerson, Ph.D.
Second-Vice Chairwoman/Second Vice President