

**Minutes Of
Engineering And Maintenance Committee Meeting
Of The Water Works Board
Of The City Of Birmingham
October 15, 2019**

An Engineering and Maintenance Committee Meeting of The Water Works Board of the City of Birmingham was held Tuesday, October 15, 2019, at 11:30 a.m., at the Birmingham Water Works Board, 3600 First Avenue North, to discuss engineering and maintenance issues.

The following Committee members were present: Brenda J. Dickerson and Sherry W. Lewis. Committee member Ronald A. Mims arrived late. Other Board Members present who do not serve on the Committee were: Tommy Joe Alexander, Deborah Clark, William R. Muhammad and George Munchus. The following Directors were absent: William "Butch" Burbage, Jr. and Brett A. King.

The meeting was also attended by: Michael Johnson, General Manager; T. M. "Sonny" Jones, Interim Assistant General Manager of Operations and Technical Services; Derrick Murphy, Assistant General Manager of Engineering and Maintenance; Grace Amison, Executive Assistant to the Board of Directors; Tammy Wilson, Executive Assistant to T. M. "Sonny" Jones and Derrick Murphy; Rick Jackson, Public Relations Specialist; George Anderson, Information Technology Manager; Doug Stockham, System Development Manager; Geoff Goodwin, Revenue Water Manager; Steve Franks, Principal Engineer; Ben Sorrell, Chief Engineer; Jonathan Harris, Water Treatment Manager; Terrell Jones, Security Superintendent; Mark Parnell, Parnell Thompson, LLC; Kelvin Howard, Kelvin Howard, LLC; Brian Ruggs and Patrick Flannelly, ARCADIS; Andy Mitchell, Agency 54; Chandra Abesingha, CE Associates; Kim Bivins, Birmingham Construction Industry Authority(BCIA); Theo Johnson, Volkert; City of Birmingham Police Officer; Angela Hoskins, Studio 2H Design, LLC; Olivia Martin, Attorney General Office; Mauricka McKenzie, Nehemiah Engineering; Andrew Phillips, Schoel Engineering.

General Manager, Michael Johnson called the meeting to order at 11:34 a.m. Inasmuch as two Committee members were present when the meeting was called to order, a quorum was not in attendance. Information Technology Manager, George Anderson opened the meeting with prayer. The Committee moved to the presentations on the agenda while awaiting Director Mims arrival.

Next, Assistant General Manager, Derrick Murphy gave a presentation on Non-Revenue Water (NRW), as set forth in agenda item 12. Director Mims arrived for the meeting at 11:37 a.m. AGM Murphy explained that NRW is the volume of water produced minus the volume of water billed to customers. Various causes of NRW such as unauthorized usage, theft, meter inaccuracy and leaks were mentioned. NRW Manager, Geoff Goodwin addressed the Committee and stated, by volume, that leaks make up the largest percentage of water loss. Leakage is driven by galvanized steel and unlined cast iron pipe and accounts for 67% of maintenance activity. Costly removal of these pipes was

discussed. Life expectancy is about 50 years and some pipe has exceeded that to 90 plus years. AGM Derrick Murphy stated it would be explained in detail later, but the percentage of water loss is roughly 48%. GM Munchus asked how long the percentage has been this high. GM Johnson stated there is a history behind the percentage and a slide will show the progression. GM Johnson added the percentage was better a few years ago. The average Capital Program dollars spent from 2001 to 2018 was \$40.4 million according to AGM Murphy. Pipeline replacement is under-funded and future replacement will be on a 125-year replacement schedule which equals replacement of 32 miles of pipe per year. Patrick Flannelly, with ARCADIS talked about definitions and references. A handout on NRW was provided to the Committee (a copy of which is on file with the Committee meeting book). The 2012 Water Audit shows that Birmingham Water Works (BWW) produced 36,522 million gallons that year. The 2019 Water Audit shows that BWW produced 39,062 million gallons that year. Unrecovered real loss in 2012 was 14.00% and the unrecovered real loss in 2019 has climbed to 24.32%. Beginning in 2021, Mr. Flannelly recommended prioritizing to increase pipeline replacement funding. Director Munchus asked what amount should be put toward pipeline funding annually. Mr. Flannelly responded \$32 million to be sustainable. Mr. Flannelly emphasized that the worst bad actor is galvanized pipe and it stems from about 14% of the system. Director Munchus asked where the worst pipe is. AGM Murphy responded the inner city adding there are pipeline projects on the agenda today for these areas. Director Lewis stated NRW has been a concern for years and it has to be made a priority. Director Muhammad stated the previous five-member Board seemed to be against the expansion of Carson Loop and other projects and he understood why now. Director Muhammad stated the legacy he would like to leave is to eliminate the debt and replace the galvanized pipe in the system. GM Johnson stated the Board has adopted a debt reduction plan to be implemented over the next 7 or 8 years. GM Johnson stated when the budget is adopted more money can be put into the Capital Budget for pipe replacement projects. When the refunding is done, we will free up some debt service reserve funds that can be put into pipe replacement next year according to GM Johnson. The possibility of reconditioning of pipe was discussed briefly. Director Muhammad asked how much of the 2019 Capital Budget had been spent so far this year and if \$3 million can come from that for pipeline replacement. AGM Murphy responded about \$35 million of the proposed \$60 million had been spent so far this year out of Capital. The Committee agreed to take up discussion of this in the Finance Committee meeting scheduled for tomorrow.

Following, AGM Murphy gave a presentation on Carson Loop, as set forth in agenda item 13. A display map was used to visually highlight the phases of Carson Loop. AGM Murphy stated Carson Loop supports drought mitigation. A system should be a system that supports each other AGM Murphy stated. AGM Murphy gave scenarios where the Board's plants support each other. The system has to build on the capacity for potential growth as well AGM Murphy stated. GM Johnson stated BWW is preserving and enhancing the flexibility of the system.

Next, Brian Ruggs gave the Committee an update on the Lake Purdy Dam stability improvements design, as set forth in agenda item 14. Mr. Ruggs stated the design work should be complete in October of 2020. At that time, we will come back to the Board to

advertise for bids. Sub-consulting agreements have been executed and a site visit has been made according to Mr. Ruggs.

Following, was a request for the Committee to recommend to the Board to accept a Scope of Services with Nehemiah Engineering, LLC for the design and inspection of a water main replacement project in the city of Birmingham based on the high leakage rate data from the R & R Model at a cost of \$164,357.00, as set forth in agenda item 1. On a motion duly made and seconded, the Committee unanimously agreed to move the item to the Board.

Next, were requests for the Committee to recommend to the Board to take bids for 13-inch x 24-inch meter boxes and lids to replenish the inventory in the warehouse at an estimated cost of \$184,500.00, as set forth in agenda item 2; and for a pipe replacement project in the city of Birmingham at an estimated cost of \$1,149,600.00, as set forth in agenda item 3. On a motion duly made and seconded, the Committee unanimously agreed to move the items to the Board.

Following, were requests for the Committee to recommend to the Board to award bids to Southern Pipe & Supply for estimated annual quantities of meter adapters at an estimated cost of \$70,367.80; Consolidated Pipe for annual quantities of corporation stops at an estimated cost of \$131,412.00; Global Construction & Engineering, Inc. for the replacement of Basin 3 & 4 tube settlers at Western Filter Plant at an estimated cost of \$147,500.00; Willoughby Contracting Company, Inc. for a pipeline replacement project along Dawson Avenue in the city of Birmingham at an estimated cost of \$827,601.27; Willoughby Contracting Company, Inc. for a pipeline replacement project in Pratt City at an estimated cost of \$998,036.04; and Midsouth Paving, Inc. and Dunn Construction for annual quantities of asphalt hot mix to be picked up by the contractors at an estimated costs of \$1,212,650.00 (Midsouth Paving, Inc.) and \$1,263,916.50 (Dunn Construction), as set forth in agenda items 4 through 9. On a motion duly made and seconded, the Committee unanimously agreed to move the items to the Board.

Next, GM Johnson addressed item 10, which was a request for the Committee to recommend to the Board to approve an agreement to fund a 1,360-foot pipeline for the Grand River Technology Park to provide water to tenants. AGM Sonny Jones had a display map as a visual of where the pipeline will go in. The approximate cost to the Board would be \$250,000.00 according to AGM Sonny Jones. Director Lewis asked how this would benefit the BWW. AGM Sonny Jones responded the 5-year internal rate of return based on a 10-year build-out is 47%. Estimated payback is that BWW will get its money back in 3 years according to AGM Sonny Jones. Director Munchus stated he believed it would happen before that. On a motion duly made and seconded, the Committee unanimously agreed to move the item to the Board.

Following, under new business, Director Muhammad stated he wanted to commend the Engineering and Maintenance Committee on how rapidly they moved things along today. Director Muhammad encouraged the Board members to streamline meetings and think about cutting out some of its processes.

As there was no further business to be brought before the Committee, the meeting was adjourned at 12:35 p.m.

_____/s/_____
Michael Johnson
General Manager

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

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

_____/s/_____
Ronald A. Mims
Secretary-Treasurer