ERRATA SHEETS FOR PWD STATEMENT NO. 9A

BEFORE THE
PHILADELPHIA WATER, SEWER AND STORM WATER RATE BOARD

In the Matter of the Philadelphia Water Department's Proposed Change in Water, Wastewater and Stormwater Rates and Related Charges	Fiscal Years 2019-2021

Errata Sheets for

Direct Testimony

of

Black & Veatch Management Consulting, LLC

on behalf of

The Philadelphia Water Department

Dated: May 7, 2018

ERRATA SHEETS
TO DIRECT TESTIMONY OF BLACK & VEATCH MANAGEMENT CONSULTING, LLC
PWD STATEMENT NO. 9A

Page 39, Line 3 — Revise 6.25% bond interest for FY 2021 to FY 2023 to 6.0%.

Page 59, Line 16-19 — Revise as follows:

Based on the historical demands experienced, the maximum day demand is approximately ~~130~~ 140 percent of average day demand. Consequently, ~~77~~ 71 percent (100/~~130~~140) of the capacity of these maximum day facilities is required for base use, and the remaining ~~23~~ 29 percent is required for maximum day extra capacity demands.

Page 59, Line 21-24 & Page 60, Line 1 — Revise as follows:

Similarly, peak demand for maximum hour facilities is approximately ~~174~~ 190 percent of average day demands. Of the facilities designed to meet maximum hour demands, ~~57~~ 53 percent (100/~~174~~ 190) of the capacity is required for base use, ~~17~~ 13 percent [(~~130~~ 125-100)/~~174~~ 190] is required to meet maximum day extra capacity requirements, and the remaining ~~26~~ 34 percent is needed to meet maximum hour requirements.

Page 70, Line 11 — Revise FY 2016 to FY 2012.

Page 131, Line 21 — Revise gross area amount to 5,500 square feet and impervious area amount to 4,000 square feet.

- *Projected Debt Service:* The debt service is estimated based on a 30-year amortization schedule and an annual interest rate of 5.50 percent for FY 2019; 5.75 percent for FY 2020; and ~~6.25~~ 6.00 percent for each of the bond issues proposed during FY 2021 through FY 2023. The projected debt service for each fiscal year (FY 2019 through 2023), reflects interest only payments for the first year of the bond amortization.
- *Capital Account Deposit:* In addition to funds from bond proceeds, Line 8 shows that during the six-year projected study period a total of approximately $191.4 Million of Capital Account Deposits will be available to finance water and wastewater capital improvements. It is important to note that capital account deposit amount for FY 2019 through FY 2023 is estimated based on 1.5 percent of prior year depreciated value of plant investment (original cost less depreciation). In addition, Line 10 indicates that $132.5 Million will be available from the Residual Fund as another major source of funding of the Capital Improvement Program.
- *Interest Income:* Interest income on annual average balances in the Construction Fund and the Debt Reserve Fund are shown in Lines 11 and 19. The interest earnings in the Construction Fund, which primarily consists of bond proceeds, are not available to the Revenue Fund as a part of the overall project revenues available for meeting annual revenue requirements of the Water Department. An interest rate of 0.36% percent was assumed to determine the interest income for FY 2019 through FY 2023.

treatment, pumping and distribution facilities, and a portion of administrative and general costs, as well as capital costs on water plant investment associated with serving customers to the extent required for a constant, or average annual rate of use.

Extra Capacity Costs: Extra Capacity costs represent those operating costs incurred due to demands in excess of average load conditions, and capital costs for additional plant and system capacity beyond that required for the average rate of use. This includes two components: Maximum Day and Maximum Hour.

- Maximum Day Extra Capacity costs are those incurred in meeting demands in excess of average day requirements.
- Maximum Hour Extra Capacity costs are those incurred in meeting demands in excess of maximum day use.

Based on the historical demands experienced, the maximum day demand is approximately ~~130~~ 140 percent of average day demand. Consequently, ~~77~~ 71 percent (100/~~130~~140) of the capacity of these maximum day facilities is required for base use, and the remaining ~~23~~ 29 percent is required for maximum day extra capacity demands.

Similarly, peak demand for maximum hour facilities is approximately ~~174~~ 190 percent of average day demands. Of the facilities designed to meet maximum hour demands, ~~57~~ 53 percent (100/~~174~~ 190) of the capacity is required for base use, ~~17~~ 13 percent [(~~130~~ 125-100)/~~174~~ 190] is required to meet maximum day

extra capacity requirements, and the remaining ~~26~~ 34 percent is needed to meet maximum hour requirements.

Customer Costs: Customer costs are defined as costs which tend to vary in proportion to the number of customers connected to the system. These costs include meter reading, billing, collecting and accounting, a portion of administrative and general costs, and maintenance and capital charges associated with meters and services. Customer costs, such as meter related expenses, billing, collection, and accounting expenses, are usually allocated to customer types on the basis of the number of bills rendered or customers served and are assigned directly to the customer meter and billing cost components.

Public Fire Protection: Costs directly related to public fire protection include operating expenses and capital costs associated with the standard pressure fire system. Costs related to the standard pressure fire system are assigned directly to the cost component for public fire protection.

Wholesale Direct: Costs allocable to Wholesale Direct include the operating expenses and capital costs related to those facilities required to serve Aqua Pennsylvania on a wholesale basis in accordance with the contract terms. The contractual maximum day capacity reserved by Aqua Pennsylvania for the study period is 9.5 mgd.

excess of average day and Maximum Hour requirements in excess of Maximum Day.

Q56. CAN YOU EXPLAIN HOW YOU DERIVED THE CUSTOMER CLASS EXTRA CAPACITY FACTORS?

A56. Black & Veatch derived the customer class extra capacity factors based on previous cost of service studies and rate proceedings. To review and verify the reasonableness of the capacity factors, Black & Veatch performed a capacity factor analysis according to the methodology outlined in Appendix A of AWWA Manual M-1: *Principles of Water Rates, Fees, and Charges*. Black & Veatch used the ~~FY 2016~~ FY 2012 monthly customer billing data, system historical peak demands, and weekly and hourly usage adjustments to derive an estimate of capacity factors for each customer type.

Q57. WHAT ARE THE OVERALL RESULTS OF THE CAPACITY FACTOR ANALYSIS AND ARE THE RESULTS REASONABLE BASED ON YOUR EXPERIENCE.

A57. The Maximum Day extra capacity and Maximum Hour extra capacity factors are shown in Columns 3 and 6, respectively, in Table W-11. The capacity factors determined are reasonable based on our experience.

Generally, the peak water usage characteristics vary among the different customer types as follows:

- Residential customers place a higher <u>peak demand</u> on the water system than the non-residential customers. For example, the Residential

Year-1 (FY 2019), this customer's monthly bill would increase from $51.39 to $52.10, an increase of $0.74 or about 1.4 percent. In FY 2020, the bill increases to $54.81, an increase of $2.71 over FY 2019 rates, or about 5.2 percent. Finally, in FY 2021, the bill increases to $57.36, an increase of $2.55 over FY 2020 rates, or about 4.7 percent. Note – eligible senior citizens may receive a 25 percent discount on their entire bill. The total monthly bills presented above do not reflect this discount.

Q95. BASED UPON THE PROPOSED SCHEDULES OF RETAIL WATER, SEWER, AND STORMWATER RATES, WHAT IS THE INCREASE TO THE TYPICAL SMALL BUSINESS CUSTOMER'S COMBINED WATER AND WASTEWATER BILL RELATIVE TO THE BILL UNDER EXISTING RATES?

A95. Table C-5, in Schedule BV-E1, presents a series of typical or representative combined non-residential water, sanitary sewer, and stormwater monthly bills under existing and proposed rates for Test Year-1 (FY 2019), Test Year-2 (FY 2020), and Test Year 3 (FY 2021) for multiple meter sizes and various parcel characteristics (i.e. GA and IA). In the City of Philadelphia, a small commercial business customer has a 5/8-inch meter and uses about 0.6 Mcf (thousand cubic feet) annually (approximately 600 cubic feet monthly). A parcel with gross area of ~~11,000~~ 5,500 square feet and impervious area of ~~7,000~~ 4,000 square feet was assumed for development of the typical bill comparison.

Under the proposed schedules of water and wastewater rates for Test Year-1 (FY 2019), this customer's monthly bill would increase from $108.49 to