

**CITY OF BALTIMORE  
(MAYOR AND CITY COUNCIL OF BALTIMORE)  
ANNUAL DISCLOSURE  
UPDATES TO CERTAIN FINANCIAL AND OPERATING DATA  
February 28, 2018**

**PROJECT AND REFUNDING REVENUE BONDS  
(WATER PROJECTS)**

SERIES 1993-A	\$ 58,850,000	SERIES 2009-A	\$ 21,635,000
SERIES 1994-A	\$ 46,095,000	SERIES 2011-A	\$ 53,060,000
SERIES 2002-A	\$ 118,920,000	SERIES 2013-A	\$ 130,110,000
SERIES 2002-B	\$ 18,300,000	SERIES 2013-B	\$ 155,990,000
SERIES 2002-C	\$ 40,800,000	SERIES 2013-C	\$ 31,740,000
SERIES 2003-A	\$ 49,665,000	SERIES 2014-A	\$ 99,210,000
SERIES 2004-B	\$ 47,500,000	SERIES 2014-B	\$ 39,200,000
SERIES 2005-B	\$ 16,330,000	SERIES 2014-C	\$ 36,010,000
SERIES 2006-A	\$ 26,675,000	SERIES 2017-A	\$ 157,420,000
SERIES 2007-B	\$ 50,740,000	SERIES 2017-B	\$ 10,195,000
SERIES 2007-C	\$ 40,275,000	SERIES 2017-C	\$ 27,135,000
SERIES 2008-B	\$ 27,175,000	SERIES 2017-D	\$ 44,380,000

This annual disclosure document sets forth certain information regarding the above Project and Refunding Revenue Bonds issued by the City of Baltimore (“City”). This annual disclosure document is not intended to contain complete information which is material to the issuance of the revenue bonds of the City. Nor does this annual disclosure document constitute an offer to sell or the solicitation of an offer to buy any revenue bonds of the City. Under no circumstances should it be implied that there has been no change in the affairs of the City or in any official statement of the City since the date of this annual disclosure document or since the date of any such official statement respectively. This information herein is subject to change without notice. The City intends to revise this annual disclosure on an annual basis as required under SEC Rule 15c2-12(b)(5) and does not intend to prepare interim supplements for the purpose of updating the information presented herein. The City, however, may present certain supplemental and additional information in the official statements prepared from time to time in connection with future sales of revenue bonds of the City.

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**SECTION ONE**  
**The Water System**

# **THE WATER SYSTEM**

## **Water System Service Area**

The Water Utility supplies water to the City, as well as portions of Baltimore, Anne Arundel, Carroll, Harford and Howard Counties. The total water service area is approximately 220 square miles, 80 square miles of which are in Baltimore City. The Water Utility serves over 1,800,000 people by supplying approximately 69.497 billion gallons of water in Fiscal Year 2017. Approximately 50% of the Water Utility's customers and 46% of water usage are currently located within the City; the remaining 50% of customers and 54% of water usage are in the surrounding County service areas. Water service is provided to customers in part of Baltimore County, and to fewer than 10 customers in Anne Arundel County, on a retail basis. Wholesale service is provided to parts of Howard, Anne Arundel, Harford and Carroll Counties. The operation and maintenance of the supply, treatment, transmission and most of the distribution facilities in the system are the responsibility of the Water Utility.

The total amount of finished water produced declined 2005-2017, ranging from 0.15% to 9.0% per year; Fiscal Year 2014 and FY 2015 production increased by 1.2% and 2.4% respectively, but decreased by 1.2% in FY 2017. Factors influencing total finished water demand include conservation measures, water main break history and fluctuation of relatively wet and dry years, as well as economic conditions. Total finished water demand over the last 10 years has decreased. Based on current conditions, long-term population growth projections, and continued per capita water conservation, water demand is expected to remain steady over the next ten years.

## **Water Supply Sources**

The water system receives its untreated water from the following three sources: Loch Raven and Prettyboy Reservoirs on the Gunpowder River and Liberty Reservoir on the Patapsco River. The City has an agreement to withdraw up to 250 million gallons per day ("mgd") from the Susquehanna River; however, the City's right to withdraw is subject to regulation by the Susquehanna River Basin Commission. The Susquehanna River supply has been used in the past only during periods of drought, and on several other occasions for testing purposes.

Groundwater is not utilized as a source of supply.

Loch Raven and Prettyboy Reservoirs are located in a 303 square mile watershed and have a combined available capacity of 39 billion gallons. Land use in the watershed is principally agricultural, which generally results in excellent water quality for municipal purposes.

Liberty Reservoir has a watershed of 164 square miles and an available storage capacity of 43 billion gallons. The water quality of Liberty Reservoir is also considered excellent for municipal water supply.

The Loch Raven and Prettyboy Dams, constructed in the 1920's and 1930's, respectively, have been the subject of inspections throughout the years. A construction project to address rehabilitation and upgrades at the Liberty Dam was completed in 2005.

To comply with a U.S. Army Corps of Engineers recommendation, the Water Utility retained an independent consulting firm to study the Prettyboy and Loch Raven Dams to determine the improvements necessary to comply with federal standards relating to the Probable Maximum Flood (“PMF”). The consultant’s investigations at the Prettyboy Dam concluded that a significant amount of seepage was occurring through the construction joints in the concrete that the spillway is capable of passing the PMF, that the dam has significant flood control impact, that stability of the dam is satisfactory and that the rehabilitation of ancillary mechanical systems is warranted. A portion of the rehabilitation of the Prettyboy Dam was completed in 2002. Construction on the remaining rehabilitation began in 2008 and is now complete.

The consultant’s investigation found that Loch Raven Dam was incapable of withstanding PMF conditions and additionally had some marginal safety problems in respect to stability of the dam. A study to identify alternative corrective measures for the Loch Raven Dam was conducted and construction and rehabilitation to address these concerns were completed at the end of 2005 at an approximate total construction cost of \$35 million.

Water from the Loch Raven/Prettyboy system is conveyed for treatment to the Montebello Filtration Plants via a seven-mile, concrete-lined tunnel, 12 feet in diameter. Normally, flow is by gravity, although water can be pumped by the low lift pump located at the Montebello Plants should the water levels fall low enough to preclude gravity flow. The station contains three 120 mgd pumps.

Water is conveyed by gravity from Liberty Reservoir to the Ashburton Water Filtration Plant (the “Ashburton Plant”) via a 12½ mile, concrete-lined tunnel, 10 feet in diameter. However, as with the Loch Raven/Prettyboy system pumping facilities, pumps are available at the Ashburton Plant should the water levels fall low enough to preclude gravity flow.

The City entered into an agreement with the Philadelphia Electric Company in 1925 to use the Company’s Conowingo Lake as “an additional water supply” source. The lake is located on the Susquehanna River in Harford County. The Susquehanna water supply system (Conowingo Lake) includes the Conowingo Intake, the Deer Creek Pumping Station, and connecting pipelines and tunnels. The City’s agreement with the Philadelphia Electric Company was modified in 1984 with the approval of the Federal Energy Regulatory Commission (“FERC”) to allow up to 250 mgd of water to be taken from the Susquehanna River. The Conowingo Intake has an installed intake capacity of 500 mgd. The pumping station and pipeline have a capacity of 250 mgd. The station has three 50 mgd pumps with provisions for two more identical units. All water is pumped by the Deer Creek Pumping Station approximately 36 miles to the Montebello Filtration Plants.

The SRBC administers a multi-state compact created by federal law to regulate the users of the Susquehanna River. Pursuant to a settlement agreement with the SRBC the City has the unfettered right to withdraw water from the Susquehanna River, at no cost, up to 250 mgd during normal flow conditions and up to 64 mgd as a monthly average, or 107 mgd as a daily peak, during droughts. The City’s consultants reasonably project that the agreement, coupled with water conservation and other measures, will guarantee sufficient water for the entire region for the next 20 years, even based on maximum water usage projections.

A 2008 study determined that the 2050 demand of raw water would necessitate securing 60 mgd of additional safe yield in order to position the utility to withstand an intense drought such as the droughts experienced in the 1930’s and 1960’s. On July 28, 2010, Baltimore applied to the SRBC to increase the limitations to 124 mgd (30-day average) and 186 mgd (peak day).

On May 6, 2011, the City modified its application to seek review and approval of the July 28, 2010 request under a phased approach. Phase 1, which was approved by the SRBC on September 15, 2011, identified an increase from 64 mgd to 84 mgd (30-day average) and 107 mgd to 142 mgd (peak day) during Trigger Low Flow Events. Phase 2 would address the balance of the City's request to increase those limits to 124 mgd (30-day average) and 186 mgd (peak day) during such flow events. On May 29, 2015, the City requested that the SRBC allow the City to move into Phase 2. SRBC indicated that they have no problems with the request, but the City has received no further information at this time.

No significant problems have been experienced with any of the water tunnels or pumping facilities; however, condition assessment is warranted since these assets are approaching 100 years of age.

## **Treatment**

Water from Liberty Reservoir is treated at the Ashburton Plant which is located on the City's west side. All other water is treated at the two Montebello Filtration Plants on the east side of the City. Treatment consists of disinfection, coagulation, sedimentation, filtration, fluoridation, and corrosion control.

The Montebello filtration facilities consist of Plants No. 1 and No. 2 built in 1915 and 1928, respectively. Plant No. 1 has a design capacity of 128 mgd, and Plant No. 2 has a design capacity of 112 mgd. The Ashburton Plant went on line in 1956 with a design capacity of 120 mgd. Total design capacity of the three plants is 360 mgd of finished water.

## **Future Demand and Safe Yield**

Current projections indicate that the water system may require certain expansions to meet the projected supply demands of the Water Utility's service area in the year 2025. One of the major challenges confronting the system is the transfer of good quality water from the sources east of the system to the increased demand anticipated in the west, especially from areas outside the City in the various County jurisdictions. In Fiscal Year 2017, the average filtered water delivered to the system was 190.4 mgd.

The present supply sources of the water system are rated by their safe yield. Safe yield is defined as the sum of usable water reservoir storage divided by the length of drought (assumed, based on certain criteria), plus the drought stream flow. The computed safe yield of the Loch Raven/Prettyboy system is 148 mgd, while the Liberty Reservoir has a safe yield of 93 mgd. Carroll County was previously allowed to take 3 mgd from the Liberty Reservoir; however, a revised agreement was approved in February 2005 that allows the County to withdraw up to 6 mgd as a 30-day average. This lowers the safe yield for the Water Utility to 87 mgd. The present combined safe yield of the reservoir system is thus 235 mgd. The Fiscal Year 2016 average raw water demand is 213 mgd, while the average across Fiscal Years 2008 through 2016 is approximately 224 mgd, which is 11mgd below the reservoir system's safe yield. Previous City forecasts anticipated the demand by the year 2025 to increase to 303.6 mgd, or 64.6 mgd in excess of the present reservoir system's safe yield. The City currently anticipates only minimal increases in the overall demand through 2025. In addition, the City can withdraw up to 250 mgd during normal flow conditions from the Susquehanna River, and up to 84 mgd (30-day average) and 142 mgd (peak day) during Trigger Low Flow Events.

In order to provide additional system reliability and capacity, the City is studying several long-range planning options that may include construction of an additional filtration plant at Fullerton, in Baltimore County, to be designed with the capability of treating blended raw water from the Susquehanna River and current surface reservoirs, or expansion of other City facilities.

## **Distribution**

The distribution system's piping varies in size from 4 to 144 inches in diameter. The majority of the pipe is cast iron, although sizes 16 inches in diameter and greater may be steel or reinforced concrete. There are approximately 4,500 miles of main in the system, of which approximately 1,550 miles are in Baltimore City.

The distribution system has 420 million gallons of usable storage capacity contained in 30 elevated and ground storage facilities. There are 20 pumping stations in active use with a safe capacity of 618 mgd. However, about 56% of the system's overall consumption is delivered by gravity. The Water Utility's storage capacity is sufficient to meet system demands.

In September 2003, at the request of Anne Arundel County, the City transferred the portion of City-owned mains located in Anne Arundel County to the County by a Deed of Transfer. The original system was built by Anne Arundel County and required rehabilitation, which would have cost approximately \$8,000,000. By transferring this portion of the system to Anne Arundel County, the City saved these improvement costs and future operation and maintenance costs associated with the portion of the mains transferred to the County. The City continues to provide water to this portion of the system in Anne Arundel County via wholesale service through master meters.

## **System Operation and Maintenance**

The City has a preventive maintenance program for all components of the system and a portion of the Comprehensive Water Quality Plan is focused on improving the treatment facilities training program. In addition, the Water Utility's Capital Improvement Program contains ongoing water main replacement, water main cleaning and cement lining, and condition assessment and associated rehabilitation. See "WATER UTILITY CAPITAL IMPROVEMENT PROGRAM."

Under the Office of Asset Management, the City is developing and implementing a number of additional preventative maintenance programs for its linear water infrastructure aimed at shifting the City from a predominately reactive mode to a more proactive mode of asset maintenance. These programs include the Large Diameter Water Mains Assessment and Repair Program, the Leak Detection and Repair Program, and the Unidirectional Flushing Program.

## **System Metering**

As of June 30, 2017, the Water Utility was 100% metered, with 404,138 active metered accounts. The breakdown of active metered accounts by political subdivision is shown in the table below. The utility billing system had 15,758 stormwater only accounts in Baltimore City which are not reflected in the number of Metered Accounts below.

<b>Political Subdivision</b>	<b>Metered Accounts</b>
Baltimore City	199,528
Baltimore County	204,604
Anne Arundel County	11
Howard County	3
Carroll and Harford Counties	2
Total	<u>404,138</u>

In an effort to improve customer service, the City has substantially completed the implementation of Advanced Meter Infrastructure (“AMI”) in Baltimore City and a combination of Advanced Meter Infrastructure (“AMI”) and Automated Meter Reading (“AMR”) in Baltimore County. Installation of the meters in Baltimore City and Baltimore County are complete with the exception of approximately 3,600 meters. These represent less than one percent of water accounts. The new water billing system went into operation for Baltimore City customers on October 11, 2016, and is expected to be in operation for Baltimore County customers on January 1, 2019. Implementation of the new billing system is also accompanied by a change in billing frequency from quarterly to monthly, as well as modifications to the water and sewer user rate structure. See “FINANCIAL OPERATIONS OF THE WATER UTILITY” for additional details regarding the new billing system and rate structure.

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## **SECTION TWO**

### **Debt Service Requirements**

## EXISTING DEBT SERVICE REQUIREMENTS OF THE WATER UTILITY<sup>(1)(2)</sup>

The following table sets forth the Utility's debt service requirements for Fiscal Years 2018 through 2050 assuming the issuance of no additional Indebtedness as of June 30, 2018.

Fiscal Year Ending	Senior Lien Debt Service			Subordinate Lien Debt Service			Combined Total Debt Service		
	Principal	Interest <sup>(1)</sup>	Total Debt Service	Principal	Interest <sup>(1)</sup>	Total Debt Service	Principal	Interest <sup>(1)</sup>	Total Debt Service
6/30/2018									
7/1/2018	12,525,000	10,498,030	23,023,030	7,460,000	8,730,975	16,190,975	19,985,000	19,229,005	39,214,005
7/1/2019	14,193,456	20,955,459	35,148,915	7,680,000	17,795,688	25,475,688	21,873,456	38,751,146	60,624,602
7/1/2020	14,871,218	20,289,947	35,161,164	8,025,000	17,454,438	25,479,438	22,896,218	37,744,384	60,640,602
7/1/2021	14,468,999	19,599,465	34,068,465	10,944,024	17,053,188	27,997,212	25,413,023	36,652,653	62,065,676
7/1/2022	14,976,800	18,950,815	33,927,615	11,323,816	16,609,895	27,933,711	26,300,616	35,560,710	61,861,326
7/1/2023	14,229,620	18,253,245	32,482,865	11,908,767	16,148,445	28,057,211	26,138,386	34,401,690	60,540,076
7/1/2024	14,872,459	17,598,355	32,470,815	12,433,877	15,658,585	28,092,461	27,306,336	33,256,940	60,563,276
7/1/2025	15,565,319	16,909,546	32,474,865	12,809,148	15,144,314	27,953,462	28,374,467	32,053,859	60,428,326
7/1/2026	16,328,198	16,182,916	32,511,115	13,364,581	14,620,330	27,984,911	29,692,779	30,803,247	60,496,026
7/1/2027	17,071,098	15,418,267	32,489,365	13,925,178	14,069,784	27,994,962	30,996,276	29,488,051	60,484,326
7/1/2028	17,969,018	14,616,597	32,585,615	14,495,939	13,491,747	27,987,686	32,464,957	28,108,344	60,573,301
7/1/2029	18,771,958	13,770,156	32,542,115	15,116,867	12,876,820	27,993,686	33,888,825	26,646,976	60,535,801
7/1/2030	19,589,919	12,912,895	32,502,815	15,697,962	12,241,725	27,939,686	35,287,881	25,154,620	60,442,501
7/1/2031	20,538,141	11,985,663	32,523,804	16,379,225	11,570,461	27,949,687	36,917,366	23,556,125	60,473,490
7/1/2032	24,181,270	11,027,050	35,208,319	17,050,659	10,867,965	27,918,624	41,231,929	21,895,015	63,126,943
7/1/2033	25,415,163	9,876,119	35,291,282	17,417,264	10,132,235	27,549,499	42,832,428	20,008,354	62,840,781
7/1/2034	21,042,034	8,656,311	29,698,345	18,174,042	9,375,707	27,549,749	39,216,076	18,032,018	57,248,094
7/1/2035	18,341,573	7,669,249	26,010,822	18,840,995	8,582,254	27,423,249	37,182,568	16,251,503	53,434,071
7/1/2036	18,806,621	6,814,929	25,621,550	19,753,123	7,767,501	27,520,624	38,559,744	14,582,431	53,142,174
7/1/2037	19,638,225	5,938,560	25,576,785	19,055,428	6,908,961	25,964,389	38,693,653	12,847,521	51,541,174
7/1/2038	17,959,846	5,008,694	22,968,540	16,947,911	6,086,688	23,034,599	34,907,757	11,095,382	46,003,139
7/1/2039	18,826,483	4,147,682	22,974,165	16,090,574	5,358,275	21,448,849	34,917,057	9,505,957	44,423,014
7/1/2040	19,728,136	3,242,279	22,970,415	15,343,419	4,673,680	20,017,099	35,071,555	7,915,959	42,987,514
7/1/2041	20,674,806	2,291,860	22,966,665	15,991,446	4,027,403	20,018,849	36,666,252	6,319,262	42,985,514
7/1/2042	18,461,492	1,294,173	19,755,665	16,664,658	3,349,691	20,014,349	35,126,150	4,643,865	39,770,014
7/1/2043	8,868,195	407,220	9,275,415	17,378,055	2,639,294	20,017,349	26,246,250	3,046,514	29,292,764
7/1/2044				18,116,640	1,894,209	20,010,849	18,116,640	1,894,209	20,010,849
7/1/2045				12,425,413	1,113,186	13,538,599	12,425,413	1,113,186	13,538,599
7/1/2046				12,919,376	617,723	13,537,099	12,919,376	617,723	13,537,099
7/1/2047				3,043,531	98,568	3,142,099	3,043,531	98,568	3,142,099
7/1/2048				3,067,879	74,220	3,142,099	3,067,879	74,220	3,142,099
7/1/2049				3,092,422	49,677	3,142,099	3,092,422	49,677	3,142,099
7/1/2050				3,117,162	24,937	3,142,099	3,117,162	24,937	3,142,099
<b>TOTAL</b>	<b>457,915,046</b>	<b>294,315,484</b>	<b>752,230,530</b>	<b>436,054,380</b>	<b>287,108,568</b>	<b>723,162,948</b>	<b>893,969,426</b>	<b>581,424,051</b>	<b>1,475,393,478</b>

- 1) With respect to the Revenue Obligations bearing interest at a variable rate, for all of which the City has entered into interest rate swap agreements, the rate or rates of interest paid under such interest rate swap agreements are reflected in this table.
- 2) Totals may not add due to rounding.

## **SECTION THREE**

### **Financial Operations**

## FINANCIAL OPERATIONS OF THE WATER UTILITY

### Rates

In November 1978, the voters of the City approved the Charter Amendment establishing the Water Utility as a separate enterprise and requiring that the Water Utility be financially self-sustaining and operated without profit or loss to the other funds or programs of the City. In addition, the Charter Amendment requires the City to approve a separate budget for the Water Utility.

As required by the Charter Amendment, in December 1978, the City Council adopted Ordinance 941 establishing, among other things, a mechanism for the determination of rates and charges. Ordinance 941 requires that the Board of Estimates, upon the recommendation of the Director of Finance and the Director of Public Works, establish rates and charges sufficient to make the Water Utility self-supporting at all times and that it adjust the rates if the projected statement of revenues, expenses and changes in equity for the current fiscal year anticipates a loss and the actual results for the immediate prior year resulted in a loss or deficit. In addition, Ordinance 941 requires that the rates so established shall be at a level sufficient to recover any accumulated deficit from prior years.

On August 31, 2016, the Board of Estimates approved a revised rate structure and three-year schedule of rate increases. The new rate structure was developed in concert with the implementation of the City's new Customer Information System (CIS), and is designed to provide adequate funding of the City's operational, capital, and financial needs. The new rate structure includes an account management fee, infrastructure charge, and uniform volumetric rates for all water used.

Retail water rate increases since 1998 and the approved increase for the next two years are as follows:

#### Retail Water Rate Increases

<u>Date</u>	<u>% Increase</u>	<u>Date</u>	<u>% Increase</u>
Jun-98	8.0%	Jul-10	9.0%
May-00	19.0%	Jul-11	9.0%
Apr-02	16.0%	Jul-12	9.0%
Apr-03	9.0%	Jul-13	15.0%
Apr-04	9.0%	Jul-14	11.0%
Apr-05	9.0%	Jul-15	11.0%
Apr-06	9.0%	Oct-16	9.9%
Apr-07	9.0%	Jul-17	9.9%
May-08	4.0%	Jul-18	9.9%
Jun-09	9.0%		

## **Current Rate Structure**

The revenues of the Water Utility are primarily derived from water sales, with a minor amount of revenues generated by charges for other services and rental income, penalty charges for late payment and interest earnings on investments. Water Utility customers in Baltimore City and the small number of retail customers in Anne Arundel County are billed according to a newly implemented water rate structure. With the implementation of AMI technology, the City has also implemented a new Customer Information and Billing System that provides greater visibility to customers, and enhances the City's ability to provide best-in-class customer service. The new billing system also allows for monthly billing which results in bills that more easily fit into household budgets.

The rate structure includes two fixed and one volumetric components which have been aligned with the cost of providing service to customers. The new rates were developed to be revenue neutral compared to the previous rate structure. The fixed components are: an account management fee, intended to recover the cost of billing and collections, and to be charged as a flat monthly fee per bill; and the infrastructure charge, intended to recover a portion of capital costs for providing water services. The infrastructure charge is based on an account's meter size. The volumetric component of the proposed rate structure is defined by a uniform water rate multiplied by the amount of units consumed each monthly billing cycle. One unit equals one hundred cubic feet (Ccf). The volumetric rate is applied beginning with the first unit of consumption.

The existing schedule of retail water rates for customers in Baltimore City is shown in the table below along with the approved rates for FY 2019 and FY 2020.

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## Monthly Charges for Metered Water Service

<b>FIXED CHARGE COMPONENTS</b>			
	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>
<i>Effective:</i>	1-Jul-17	1-Jul-18	1-Jul-19
<b>Account Management Fee (per bill)</b>			
<b>Infrastructure Charge</b>	<i>per month</i>	<i>per month</i>	<i>per month</i>
<u>Meter Size</u>			
5/8"	\$8.96	\$9.84	\$ 10.82
3/4"	\$16.12	\$17.72	\$ 19.48
1"	\$35.83	\$39.37	\$ 43.28
1-1/2"	\$62.70	\$68.91	\$ 75.73
2"	\$143.31	\$157.50	\$ 173.10
3"	\$250.79	\$275.62	\$ 302.91
4"	\$573.24	\$629.99	\$ 692.36
6"	\$1,030.04	\$1,132.01	\$ 1,244.09
8"	\$1,612.23	\$1,771.84	\$ 1,947.26
10"	\$2,284.00	\$2,510.11	\$ 2,758.62
12"	\$4,075.37	\$4,478.83	\$ 4,922.24
<b>VOLUMETRIC RATE COMPONENTS</b>			
	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>
<i>Effective:</i>	1-Jul-17	1-Jul-18	1-Jul-19
	<i>per CcF</i>	<i>per CcF</i>	<i>per CcF</i>
<b>Volumetric Rate (all units)</b>	\$ 2.48	\$ 2.73	\$ 3.00

### Low Income Assistance Programs

The Bureau of Water and Wastewater initiated a Low Income Assistance Program in April 2005. This crisis intervention program was initiated to prevent water service cut-off due to delinquency and allow for the establishment of a payment plan with the Bureau of Revenue Collections to satisfy outstanding water account balances. In April 2008, the program was modified by increasing the annual amount of the grant from \$100 to \$125, extending the program to eligible tenants, and making the grant available to eligible customers at the point of delinquent notice rather than waiting until the point of turn-off. In July 2014, the program was modified by increasing the annual amount of the grant from \$145 to \$161. In July 2015, the program was modified by increasing the annual amount of the grant from \$161 to \$179. In July 2016, the program was modified by increasing the annual amount of the grant from \$179 to \$197. Currently eligible customers may receive up to a \$216 credit.

In May 2008, the Bureau implemented a Water and Sewer Low Income Senior Citizens Discount Program which is designed to assist low income senior citizens on fixed incomes. The

program has been modified over time to increase assistance on water/sewer rates for eligible senior citizens age 65 or older who are City residents and whose household income does not exceed \$30,000. With implementation of the new rate structure in October 2016, the discount for eligible senior citizens remained at 43% for the volumetric portion of the water rates.

In addition, the Bureau has an ongoing Hardship Exemption Program that provides exemption for paying the Chesapeake Bay Restoration Fee and the Stormwater Remediation Fee upon meeting required conditions. The Bureau also offers a Water Bill Payment Plan Program which allows for agreed upon payment arrangements for past due bills while allowing for continued Water Service.

### County Water Services

Howard County and Anne Arundel County are charged a wholesale rate for treated water established by the City. Carroll County is charged a wholesale rate for untreated water that is also established by the City. Under a 1992 Agreement, the City supplies Harford County with untreated water at cost. Under provisions of Chapter 539 of the Laws of Maryland of 1924, the City is obligated to supply water to Baltimore County at cost. The current method of determining the cost to serve Baltimore County is set out in a City-County Water Agreement dated September 20, 1972, as amended (the “City-County Water Agreement”). In general, Baltimore County is required to pay a share of the Water Utility’s operations and maintenance expense related to jointly used facilities in proportion to its water usage and all costs for facilities serving only Baltimore County. Baltimore County also pays its share of capital costs on jointly used facilities financed entirely by the City. See “FINANCIAL OPERATIONS OF THE WATER UTILITY -- City-County Water Agreement.”

Below is a table showing water sales revenues from the various subdivisions served by the Water Utility as projected for Fiscal Year 2018:

<b>Subdivision</b>	<b>Revenues (\$000's)</b>	<b>% of Total</b>
<b>Baltimore City</b>	\$101,775	56.5%
<b>Baltimore County</b>	59,534	33.0%
<b>Howard County</b>	18,193	10.1%
<b>Carroll County</b>	507	0.3%
<b>Harford County</b>	194	0.1%
<b>Total</b>	<b>\$180,204</b>	<b>100.0%</b>

### Major Users

The Water Utility’s accounts, both retail and wholesale, are subject to Rates and Charges established by the City except for those accounts in Baltimore County, which are governed by the terms of the City-County Water Agreement described below. The following lists of the Water Utility’s ten largest users in the City and Baltimore County are drawn from the City’s records of its metered accounts with one-inch or larger meters (except that all metered accounts of the City

government and the Housing Authority of Baltimore City are included), as of June 30, 2016. The users on this list may be responsible for other smaller accounts that are not reflected below.

<b>Customer Name</b>	<b>Total Billable Units (CCF)</b>	<b>Total Billings</b>
<b>Housing Authority of Baltimore City</b>	741,958	\$ 1,758,002.50
<b>Mayor &amp; City Council</b>	482,182	1,080,693.30
<b>Domino Sugar Corp.</b>	297,360	665,417.54
<b>Baltimore Resco Co.</b>	289,492	582,912.82
<b>Cloverland Real Estate II</b>	209,512	205,723.84
<b>University of Maryland</b>	192,125	392,464.39
<b>Johns Hopkins Hospital</b>	169,705	360,140.81
<b>Fleischmann's Vinegar Com Inc.</b>	132,180	297,941.58
<b>Johns Hopkins University, JHFRE</b>	121,086	260,758.29
<b>TOTAL</b>	<b>2,635,600</b>	<b>\$ 5,604,055.07</b>

The Water Utility is experiencing no unusual collection difficulties with any of the foregoing major users except former owners of the Sparrows Point Steel facility. The Water Utility has been in negotiations to resolve historical water billing disputes with a succession of former major users that preceded Sparrows Point, LLC. RG Steel Sparrows Point, LLC, the last user prior to Sparrows Point, LLC, declared bankruptcy on May 31, 2012 and its assets were purchased by Sparrows Point, LLC on September 14, 2012. The historic disputed water charges are part of an unsecured claim filed by the City in the RG Steel bankruptcy case, as well as other secured claims for industrial water and other charges, which total \$7,340,452.53. The City has also filed administrative claims in the RG Steel bankruptcy case in the amount of \$466,201.77 which include unpaid water billings and other charges. After negotiations with the debtor, the City agreed to settle its unsecured claim for \$5,200,000.00 and its administrative claim for \$284,470.33. Each of these claims will be paid to the City in a *pro rata* portion pursuant to a subsequent order of the bankruptcy court. Sparrows Point, LLC, the purchaser of RG Steel assets after its declaration of bankruptcy, also has unpaid water billings, some of which it disputes. On September 18, 2014, when Sparrows Point Terminal, LLC acquired the assets of Sparrows Point, LLC, the unpaid water billings totaled \$464,000. The City is attempting to resolve any water metering and billing issues with the new owners, both for the prior Sparrows Point, LLC disputed water billings and future Sparrows Point Terminal, LLC billings.

With respect to HABC, the City no longer pays for the Water and Wastewater billings in advance. HABC is now billed monthly which is consistent with the billing of all other Baltimore City Customers including City Agencies. The City and HABC have continued negotiations regarding the aged receivable and it is anticipated that final negotiations will conclude by the close of Fiscal Year 2018 and this settlement will not have a material adverse impact on the financial position of the Water Utility or the Wastewater Utility or the ability of the City to meet its obligations under the Water Resolution or the Wastewater Resolution. The financial models shown in “FINANCIAL OPERATIONS OF THE WATER UTILITY – Summary of Projected Operating Results and Coverage” and “FINANCIAL OPERATIONS OF THE WASTEWATER UTILITY – Summary of Projected Operating Results and Coverage” herein assume that \$903,000 of such \$3.6 million is recaptured equally from the Water Utility and the Wastewater Utility in each of Fiscal Years 2016-2019.



## **City-County Water Agreement**

Under Chapter 539 of the Laws of Maryland of 1924 (the “Metropolitan District Act”), the City is obligated to provide water to Baltimore County at cost. The City-County Water Agreement, among other things, established the methods by which Baltimore County’s share of the Water Utility’s costs was to be determined. Among the costs to be apportioned are the costs of operation, maintenance and administration, major repairs and capital projects during construction.

Customers in Baltimore County are served through individual meters but are billed by the City at rates set by Baltimore County rather than on the basis of Rates and Charges established by the City. Following the end of each Fiscal Year, when the information as to the Water Utility’s actual costs for that period and Baltimore County’s share of usage is available, City and Baltimore County officials meet to reach agreement on costs to be paid by Baltimore County. If the revenues from billings to Baltimore County customers exceed the agreed costs, the City remits the excess to Baltimore County within 60 days; if there is a shortfall, Baltimore County must pay the difference to the City within 60 days. This true-up of cost sharing based on actual year-end financial data is known as the “Settlement Payment.”

In FY 2015 and FY 2016, there were shifts in metered water consumption between the City and Baltimore County resulting from the implementation of the AMI system described above. These shifts in consumption resulted in calculated Settlement Payments from Baltimore County to the City of \$15,461,268 and \$2,267,761 in FY 2015 and FY 2016, respectively. Baltimore County is disputing the amount of these Settlement Payments and the City and Baltimore County will seek to negotiate a resolution under the terms of the City-County Water Agreement. Historical financial data contained in this Official Statement reflect actual, audited receipts from Baltimore County through FY 2016 and conservatively exclude collection of these Settlement Payments in the forecasted revenue. Financial projections assume a return to cost sharing between the City and Baltimore County as specified under the Agreement.

In March 2007, the City and Baltimore County settled a disagreement over the proper method of determining the cost of treating the sewer discharge from the Ashburton Water Treatment Plant (the “Ashburton Plant”). The City’s Wastewater Utility treats the sewage that is discharged from the Ashburton Plant. A board of arbitration was convened under the terms of the City-County Water Agreement to resolve the matter by way of binding arbitration. Baltimore City and Baltimore County, desirous of settling and terminating all existing claims and disputes relating to this matter, reached a settlement agreement. Highlights of the settlement agreement include the City and Baltimore County recognizing Baltimore County’s volumetric share of the Ashburton Plant discharge as sewage flow contributed by Baltimore County under the terms of the City-County Sewerage Agreement described below, Baltimore County agreeing to pay a portion of the City’s collection system maintenance costs because the Ashburton Plant is located in the City, and agreement that the Ashburton Plant sewer discharges will not be used to determine Baltimore County’s proportionate share of capital improvement project costs.

## Summary of Historical Operating Results and Coverage

The Water Utility has operated as a separate enterprise of the City on a self-sustaining basis since July 1, 1979. The following table contains, for the Water Utility's Fiscal Years 2013-2017, summary operating and an analysis of coverage requirements.

### Summary of Historical Operating Results (1) (\$000's)

	<i>Fiscal Year Ending June 30</i>				
	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>
Total Revenues	\$ 163,563	\$ 160,867	\$ 176,440	\$ 158,678	\$ 154,680
Transfer (to) from Rate Stabilization Fund	-	-	-	-	-
Total Operating Expenses (2)	<u>(117,547)</u>	<u>(112,771)</u>	<u>(111,855)</u>	<u>(113,947)</u>	<u>(100,845)</u>
<b>Net Revenues</b>	<b>\$ 46,016</b>	<b>\$ 48,096</b>	<b>\$ 64,585</b>	<b>\$ 44,731</b>	<b>\$ 53,835</b>
Debt Service:					
Senior Lien Revenue Obligations	\$ 34,054	\$ 35,413	\$ 34,536	\$ 28,206	\$ 27,345
Subordinate Lien Revenue Obligations	<u>16,871</u>	<u>14,708</u>	<u>11,169</u>	<u>6,406</u>	<u>6,675</u>
<b>Total Debt Service</b>	<b>\$ 50,925</b>	<b>\$ 50,121</b>	<b>\$ 45,705</b>	<b>\$ 34,612</b>	<b>\$ 34,020</b>
Senior Lien Debt Service Coverage (>1.15x)	1.35x	1.36x	1.87x	1.59x	1.97x
Total Debt Service Coverage (>1.0x)	0.90x	0.96x	1.41x	1.29x	1.58x

Notes:

(1) Audited

(2) Excludes depreciation expense

## Summary of Projected Operating Results and Coverage

The table below sets forth the Water Utility's projection of its operating results and coverage requirements for the Fiscal Years 2018 through 2022. These projections are based on the Water Utility's approved and projected rate increases, the Water Utility's forecasted revenues and operating and maintenance expenses, the estimated debt service requirements on revenue obligations and the terms and conditions contained in the Water Resolution. The forecasts in the following table are not guarantees of future performance. Actual results may vary materially from those forecasts as a result of various risks and uncertainties that include, among others, unanticipated declines in levels of water consumption, increases in Water Utility personnel costs and other operating costs, additional regulatory requirements and adverse developments in general economic conditions.

With respect to the Revenue Obligations bearing interest at a variable rate, all of which is currently in an Auction Rate Mode, and for all of which the City has entered into Hedge Agreements, the rate or rates of interest paid under such Hedge Agreements are reflected in the table below. However, on occasion, the City has experienced an increase in its debt service costs associated with its Variable Rate Indebtedness in excess of the amounts payable to the City pursuant to the Hedge Agreements. See "SECURITY FOR THE SERIES 2017 WATER BONDS." With respect to the Series 2002-B Bonds and the Series 2002-C Bonds, the Maximum

Dutch Auction Rate is the product of the Auction Index multiplied by the Auction Multiple, but in no event in excess of 14%. The Auction Index is the Seven-Day “AA” Non-Financial Composite Commercial Paper Rate on such date. The Auction Multiple is a percentage of the Auction Index, based on the then prevailing rating of the Series 2002-B Bonds and the Series 2002-C Bonds by S&P and Moody’s. For so long as the prevailing rating is at AA/Aa the Auction Multiple is 150%. At A/A the multiple is 175% and increases 25% for each decrease in the prevailing rating until the prevailing rating is below BBB/Baa where the Auction Multiple is 225%.

**Summary of Projected Operating Results**  
**(\$000's)**

	<i>Fiscal Year Ending June 30</i>					
	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
<b>Revenues:</b>						
Baltimore City (1)	\$ 100,500	\$ 109,054	\$ 118,336	\$ 128,750	\$ 140,082	\$ 152,410
Baltimore County (2)	59,534	60,424	61,826	63,391	64,742	66,259
Revenue from Other Counties (3)	18,895	20,747	22,781	25,018	27,475	30,176
Transfer (to) from Rate Stabilization Fund	-	-	-	-	-	-
Other Revenue	1,275	3,279	4,883	4,584	4,256	3,895
Interest Revenue	-	-	-	-	-	-
Allowance for Bad Debt	-	(2,420)	(2,660)	(2,920)	(3,530)	(3,850)
<b>Total Revenue</b>	<b>\$ 180,204</b>	<b>\$ 191,083</b>	<b>\$ 205,166</b>	<b>\$ 218,823</b>	<b>\$ 233,024</b>	<b>\$ 248,890</b>
<b>Operating Expenses:</b>						
Operating and Maintenance Expenses (4)	\$ (113,408)	\$ (117,466)	\$ (121,007)	\$ (123,987)	\$ (127,734)	\$ (132,300)
Less: Additional Expenses (5)	(418)	(418)	(418)	(418)	(418)	(418)
<b>Net Revenues Available for Debt Service</b>	<b>\$ 66,378</b>	<b>\$ 73,199</b>	<b>\$ 83,741</b>	<b>\$ 94,418</b>	<b>\$ 104,872</b>	<b>\$ 116,172</b>
<b>Debt Service:</b>						
Senior Lien Revenue Obligations	\$ 35,139	\$ 35,149	\$ 37,831	\$ 42,839	\$ 49,626	\$ 55,636
Subordinate Lien Revenue Obligations	25,343	26,446	28,847	31,365	31,301	31,425
<b>Total Debt Service</b>	<b>\$ 60,482</b>	<b>\$ 61,595</b>	<b>\$ 66,677</b>	<b>\$ 74,204</b>	<b>\$ 80,927</b>	<b>\$ 87,060</b>
<b>Revenue Available After Debt Service</b>	<b>\$ 5,896</b>	<b>\$ 11,604</b>	<b>\$ 17,063</b>	<b>\$ 20,214</b>	<b>\$ 23,945</b>	<b>\$ 29,112</b>
<b>Projected Debt Service Coverage:</b>						
Senior Lien Debt Service Coverage (>1.15x)	1.89x	2.08x	2.21x	2.20x	2.11x	2.09x
Total Debt Service Coverage (>1.0x)	1.10x	1.19x	1.26x	1.27x	1.30x	1.33x

Notes:

- (1) Projection is based on approved rate increases effective July 1, 2016, July 1, 2017, and July 1, 2018.
- (2) Projection is based on the anticipated cost to provide service under the existing City-County Water Agreement.
- (3) For Howard, Anne Arundel, and Carroll Counties, projection is based on historical usage and anticipated rate increases.
- (4) Projection is based on a reduction in the adopted operating budget of approx. \$12.4 million in 2018 and approx. \$12.8 million in 2019.
- (5) Reflect other operating costs not included in the adopted budget, primarily related to debt and treasury management.

**Hedge Agreements and Variable Rate Indebtedness**

As of June 30, 2017, the City had \$20,800,000 of Variable Rate Indebtedness outstanding for the Water Utility in Auction Rate Mode, including \$12,800,000 of Refunding Revenue Bonds (Water Projects), Auction Rate Notes, Series 2002B and \$8,000,000 of Refunding Revenue Bonds (Water Projects), Subordinate Lien Auction Rate Notes, Series 2002C. All of this Variable Rate Indebtedness related to the Water Utility is currently swapped to fixed under one or more Hedge Agreements. The City also has a Hedge Agreement outstanding in the form of a basis swap that it entered into related to the Water Utility. The table below summarizes the outstanding Hedge Agreements related to the Water Utility.

Hedge Agreement Summary - City of Baltimore Water Utility Fund					
Expiration Date	Average Life	City Pays	City Receives	Notional Amount	Mark-to-Market
07/01/42	21.5	SIFMA	63.5% 1ML +0.20%	\$71,455,000	(\$4,398,516.76)
07/01/37	19.3	4.555%	67% 1ML	20,800,000	(9,326,514.57)
<b>TOTAL</b>	<b>21.0</b>			<b>\$92,255,000</b>	<b>(\$13,725,031.33)</b>

Source: Hilltop Securities Inc.

\*Rates as of COB on 06/30/2017. Subject to market conditions, Mark-to-Markets are estimated at Mid-Market for illustration purposes and do not include normal and customary transaction fees or expenses. For illustration purposes only, actual results will depend on future market conditions and may differ.

## Billings and Collections

The Customer Support and Services Division reads meters monthly from the Advanced Meter Infrastructure (AMI) equipment. Portions of Anne Arundel County, Howard County, and Baltimore County, Maryland continue to have quarterly billing. A bill for both water and wastewater service is rendered within one week of the meter reading. The City collects all bills, including those of customers located in the counties. All customer service inquiries are handled by the Customer Support and Services Division and all costs of billing and collection are borne by the Water Utility.

In order to facilitate the collection of bills rendered, the Customer Support and Services Division implemented (i) a delinquency charge of five percent, compounded each quarter on all bills over 30 days old (which is retained in full by the Water Utility), and (ii) a termination procedure for delinquent balances over \$250. In addition, for utility customers located within the City, every unpaid water and wastewater bill constitutes a lien on the property served. Such properties may be sold by the City at tax sale as a collection method of last resort. As of January 21, 2018, the Utility's delinquent accounts over 260 days old totaled \$30,848,596.73 for water, wastewater, and stormwater services. The City's billing and collections procedures were the subject of a recent review conducted by the Baltimore City Department of Audits in connection with allegations of inaccurate billing procedures for certain metered water accounts.

**SECTION FOUR**

**Capital Improvement Program**

## **WATER UTILITY CAPITAL IMPROVEMENT PROGRAM**

The Water Utility Capital Improvement Program is part of the City's general development plan and consists of a one-year capital budget and a recommended capital program for the succeeding five-year period.

The Water Utility's recommendations as to capital improvements are transmitted through the Director of Public Works to the City's Department of Planning. After holding formal hearings, the City's Planning Commission sends its recommended Capital Improvement Program to the Board of Estimates. Before any action is taken by the Board of Estimates, the plan is reviewed by the Department of Finance. After considering the recommendations of the Planning Commission and the Department of Finance and testimony of the originating agencies, the Board of Estimates approves a Capital Budget for the ensuing fiscal year and a recommended Capital Improvement Program for the succeeding five-year period. The Board of Estimates then transmits the Capital Budget and six-year Capital Improvement Program to the City Council; the Capital Budget is subject to final approval by the City Council as part of the annual Ordinance of Estimates. The City Council can approve the Capital Budget as presented or can make reductions in the Board of Estimates' recommendations, but it cannot increase the amounts fixed by the Board or add any amount for any new purpose.

### **Capital Needs**

The Water Utility's Capital Improvement Program addresses three major areas of need: supply improvements, treatment improvements and other programs in addition to normal annual improvements and expansion of plant services.

A summary of projected funding sources for Fiscal Years 2018 through 2023 is set forth in the following table. Following the table are narrative descriptions of the Water Utility's specific areas of capital needs and the particular projects currently scheduled to be financed under the Capital Improvement Program to meet those needs. The Capital Improvement Program allows for sufficient funds to provide for the necessary expansion, make the required major repairs and provide for the proper level of normal annual additions for the Water Utility.

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**WATER UTILITY CAPITAL IMPROVEMENT PROGRAM 2018-2023**  
*Projected Sources of Funds (000's)*

	Revenue Bonds	County Funds	Utility Funds	State Funds	Total
<b><u>TREATMENT PLANT</u></b>					
Fullerton Water Filtration Plant	\$298,370	\$232,412	-	-	\$530,782
Ashburton Finished Water Reservoir Improvements	52,600	50,900	-	59,500	163,000
Montebello WTP I Improvements & Truck Scales	88,754	59,140	-	-	147,894
Chlorine Handling Safety Improvements	40,111	32,839	-	-	72,950
Montebello WFP 2 Improvements	38,918	25,942	-	-	64,860
Ashburton WFP Washwater Lake Dredging	3,823	2,549	-	-	6,372
Montebello 2 Filter building Structure Rehab	3,350	2,233	-	-	5,583
Ashburton WFP Generator	2,072	1,368	-	-	3,440
Urgent Needs Water Facilities - Annual Improvements	1,830	1,218	-	-	3,048
Ashburton WFP Low Lift Pump Controls and Power Upgrade	1,587	1,058	-	-	2,645
<b>TOTAL TREATMENT PLANT</b>	<b>\$531,415</b>	<b>\$409,659</b>	<b>\$0</b>	<b>\$59,500</b>	<b>\$1,000,574</b>
<b><u>DISTRIBUTION SYSTEM</u></b>					
Water Infrastructure Rehabilitation	\$646,820	\$74,712	\$93,060	-	\$814,592
Urgent Needs Water Engineering Services	86,319	14,832	634	-	101,785
Water Appurtenance Installations	26,921	20,344	15,717	-	62,982
Water Supply Tunnels Inspection & Rehabilitation	8,535	5,946	-	-	14,481
Susquehanna Transmission Main Valve Replacement	4,745	3,997	-	-	8,742
<b>TOTAL DISTRIBUTION SYSTEM</b>	<b>\$773,340</b>	<b>\$119,831</b>	<b>\$109,411</b>	<b>\$0</b>	<b>\$1,002,582</b>
<b><u>OTHER</u></b>					
Urgent Need Reservoir Area - Roads & Culvert Repair & Rehabilitation	\$71,158	\$47,642	-	-	\$118,800
Watershed Bridge Maintenance	70,526	47,376	-	-	117,902
Vernon Pump Station Rehabilitation	28,204	18,953	-	-	47,157
Ashburton Pump Station Rehabilitation	23,268	20,632	-	-	43,900
Dam Rehabilitation	17,620	11,750	-	-	29,370
Maintenance Building Improvements at Liberty Dam	12,882	8,589	-	-	21,471
SCADA Single Platform	6,852	6,852	-	-	13,704
Mapping Program - Water Supply System	3,240	1,150	9,040	-	13,430
Montebello 1 Finished Reservoir Structure Repair	4,374	2,916	-	-	7,290
Department of Public Works Office Building	3,585	3,585	-	-	7,170
Washington Blvd. Pump Station Rehab	7,167	-	-	-	7,167
Neiman Avenue Office Renovations	3,320	3,320	-	-	6,640
Curtis Bay Tank Rehabilitation	6,532	-	-	-	6,532
Liberty Reservoir Dam Crest Repairs	1,792	1,194	-	-	2,986
<b>TOTAL OTHER</b>	<b>\$260,520</b>	<b>\$173,959</b>	<b>\$9,040</b>	<b>\$0</b>	<b>\$443,519</b>
<b>TOTAL CAPITAL IMPROVEMENT PROGRAM</b>	<b>\$1,565,275</b>	<b>\$703,449</b>	<b>\$118,451</b>	<b>\$59,500</b>	<b>\$2,446,675</b>

The actual amount spent during FY2018 – 2023 may be more than the Total Capital Improvement Plan shown above due to project appropriations prior to FY2018 that have not yet been spent.

## **Supply Improvements**

The Water Utility owns approximately 17,000 acres of watershed area in Baltimore and Carroll Counties. The six-year Capital Improvement Program includes funding priorities for improvements to watershed maintenance buildings.

## **Treatment Plant Improvements**

The Capital Improvement Program includes approximately \$531 million for the construction of a new Water Filtration Plant in the Fullerton area of Baltimore County. The facility is needed to meet the projected demands and system redundancy of the Water Utility service area and to provide additional filtered water to the utility service area during drought periods. The Plant will treat water from the Susquehanna River or Loch Raven reservoir and will have an initial capacity of approximately 120 mgd.

The six-year capital improvements for Montebello Treatment Plants 1 and 2 – total approximately \$226.0 million. Planned projects also include several new facilities and improvements to existing facilities, including rehabilitation and improvement of various pumping stations.

## **Capital Improvements Benefiting the Counties**

Under the terms of the City-County Water Agreement (see “FINANCIAL OPERATIONS OF THE WATER UTILITY -- City-County Water Agreement”), the City and Baltimore County agree to be responsible for their respective proportionate shares of capital projects that are mutually beneficial to them. In addition, Baltimore County must approve the projects and certify that funds are available to pay its proportionate share of the local costs. The City bills Baltimore County for its share monthly based on costs incurred during construction. Baltimore County is responsible for the entire cost of capital improvements which will benefit it alone.

The current six-year Capital Improvement Program of the Water Utility includes approximately \$2.4 million of improvements, of which \$703,000 is attributable to Baltimore County.

Howard and Anne Arundel County customers pay for their share of rehabilitation capital projects of the Water Utility that benefit them through the rates for service established, billed and collected by the City



**SECTION FIVE**

**Certain Information Regarding City of Baltimore, Maryland**

**CERTAIN INFORMATION REGARDING CITY OF BALTIMORE**  
**Statement of General Obligation Debt and Other Financing Arrangements**  
**As of June 30<sup>th</sup>**

	2017	2016	2015	2014	2013
<b>General Obligation Bonds:</b>					
Education	\$186,440,644	\$197,809,693	\$193,487,576	\$176,329,704	\$186,640,763
Highways	1,310,669	1,657,558	1,090,664	1,283,040	6,012,916
Parking	5,513,907	5,968,107	6,403,107	6,537,807	7,011,907
Public Buildings & Facilities	69,919,491	74,435,634	62,483,195	61,026,131	65,237,455
Public Health	1,896,677	2,170,869	2,373,871	2,579,817	2,800,421
Public Safety	2,247,638	3,058,949	3,805,882	4,115,202	4,877,871
Recreation & Parks	31,931,298	34,627,284	28,815,266	24,862,151	26,764,808
Storm Water	3,290,961	3,602,043	3,800,480	4,061,000	-
Unallocated	4,561,280	5,204,060	5,923,570	6,576,825	7,327,105
Urban Renewal & Development	223,227,434	250,860,820	248,512,359	240,626,403	262,423,703
<b>Total General Obligation Bonds</b>	<b>\$530,340,000</b>	<b>\$579,395,016</b>	<b>\$556,695,970</b>	<b>\$527,998,080</b>	<b>\$569,096,949</b>
<b>Revenue Obligations - City Facilities:</b>					
Convention Center Revenue Bonds	\$281,415,000	\$306,955,000	\$313,770,000	\$320,000,000	\$325,680,000
County Transportation Bonds	83,270,634	93,288,531	87,860,000	94,930,000	101,685,000
Parking Facilities Revenue Bonds	123,020,000	133,980,000	144,330,000	154,130,000	163,410,000
Stormwater Special Revenue Bonds	27,337,885	29,108,505	2,534,105	2,894,732	3,253,922
Wastewater Utility Revenue Bonds	1,064,546,338	1,004,061,907	919,931,301	859,672,757	717,549,287
Water Utility Revenue Bonds	912,410,140	697,173,749	713,054,032	627,793,629	509,023,481
<b>Total Revenue Obligations - City Facilities</b>	<b>\$2,491,999,996</b>	<b>\$2,264,567,691</b>	<b>\$2,181,479,438</b>	<b>\$2,059,421,118</b>	<b>\$1,820,601,690</b>
<b>Special Obligation Bonds</b>					
Tax Increment Financing	\$199,875,908	\$146,010,788	\$149,154,859	\$149,823,973	\$114,434,997
<b>Tax Special Obligation Bonds</b>	<b>\$199,875,908</b>	<b>\$146,010,788</b>	<b>\$149,154,859</b>	<b>\$149,823,973</b>	<b>\$114,434,997</b>
<b>Financings with State of Maryland:*</b>					
Urban Renewal & Development (a)			\$201,961	\$384,166	\$567,762
<b>Total Financings with State of Maryland</b>	<b>\$0</b>	<b>\$0</b>	<b>\$201,961</b>	<b>\$384,166</b>	<b>\$567,762</b>
<b>Financings with the Federal Government:*</b>					
Urban Renewal & Development	23,792,000	27,132,000	30,357,000	33,461,000	36,461,000
<b>Total Federal Government Financings:</b>	<b>\$23,792,000</b>	<b>\$27,132,000</b>	<b>\$30,357,000</b>	<b>\$33,461,000</b>	<b>\$36,461,000</b>
<b>Conditional Purchase Agreements:*</b>					
Certificates of Participation	\$7,275,000	\$12,635,000	\$18,835,000	\$24,745,000	\$34,405,000
Other	138,780,570	140,737,751	128,210,650	143,249,198	128,608,760
CPA's Financed by LD.A.	0	8,421,834	16,270,491	23,845,385	32,981,895
<b>Total Conditional Purchase Agreements</b>	<b>\$146,055,570</b>	<b>\$161,794,585</b>	<b>\$163,316,141</b>	<b>\$191,839,583</b>	<b>\$195,995,655</b>
<b>Total - All Financing Obligations</b>	<b>\$3,392,063,474</b>	<b>\$3,178,900,080</b>	<b>\$3,081,003,409</b>	<b>\$2,962,543,754</b>	<b>\$2,737,158,053</b>

(a). Represents borrowing from the State for (i) Maryland Industrial Land Act (MILA) loans for industrial parks owned by the City or industrial facilities financed for private enterprises; and (ii) Maryland Industrial and Commercial Redevelopment Fund (MICRF) loans for industrial and commercial development.

Source: Bureau of Treasury Management, Department of Finance.

## Taxable Retail Sales

Since the sales tax is not a City revenue source, the City's own sources of revenues are unaffected by cyclical sales tax shifts. Taxable retail sales in the City for Fiscal Years 2013 through 2017 are set forth below:

### Taxable Retail Sales in the City

<u>Fiscal Year</u>	<u>Total</u>	<u>% Change</u>
2017	\$ 6,268,905,063	8.2 %
2016	5,793,919,073	-0.8
2015	5,841,344,541	1.8
2014	5,739,088,058	2.1
2013	5,621,029,135	1.8

Source: Revenue Accounting Division, Comptroller of Maryland

## **SECTION SIX**

### **Environmental Compliance**

## ENVIRONMENTAL COMPLIANCE

The Water Utility is currently taking the necessary steps to meet the requirements of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and the Stage 2 Disinfectants and Disinfection Byproducts Rule (STAGE2 DBPR). Under the Stage2 DBPR the City must monitor additional sites in the distribution system for disinfection byproducts which include total Trihalomethanes and Haloacetic Acid compounds formed by chlorinating drinking water during the disinfection process. Under the rule the City must monitor multiple sites in the distribution system and determine the running average annual concentration of disinfection byproducts at each monitoring site. Areas of the distribution system not meeting federal regulations will prompt corrective action by the Water Utility. This may lead to future requirements to alter the disinfection processes; however, the Water Utility does not expect this rule to produce a major impact.

The LT2ESWTR primarily focuses on protecting the municipal water supply from microbial pathogens, specifically Cryptosporidium. Long term monitoring of Baltimore's raw water sources indicate Cryptosporidium and other microbial pathogens are only occasionally detected (two times in five years), and they have not been found at levels of concern. Other than required monitoring, this portion of the LT2ESWTR is not an issue for future compliance; however, this rule also requires the covering or replacement of all open finished water reservoirs to guard against the reintroduction of microbial contaminants. Because Baltimore's distribution system utilizes several open finished water reservoirs, this portion of the rule poses a significant financial obligation. Historically, the distribution system utilized six (6) open finished water reservoirs. Currently two (Pikesville and Towson) have been covered and are fully in service. Montebello was completed on May 27, 2014 and is in service, having met the LT2ESWTR compliance schedule. The remaining three (3) are: design complete (Guilford and Druid Lake); and completion of study (Ashburton Lake). Under LT2ESWTR open finished water reservoirs must be covered or replaced under an EPA-approved compliance schedule. The City has elected to convert all open finished water reservoirs to enclosed storage tanks. In August 2014, the Water Utility formally petitioned EPA for additional time to complete construction of the Guilford Reservoir and design and construction of the Druid Lake and Ashburton Reservoirs. EPA's response was received on March 31, 2015, and the City's approved schedule for the remaining work is shown below:

<u>Reservoir</u>	<u>Contract</u>	<u>Design Complete</u>	<u>Construction Start</u>	<u>Completion</u>
Guilford	WC-1173	1/10/2014	2/01/2016	7/01/2019
Druid Lake	WC-1204	12/31/2015	8/31/2016	8/31/2021
Ashburton Lake	WC-1211	4/01/2016	1/01/2017	12/31/2021

## **Non-Revenue Water**

The percentage of non-revenue water for Fiscal Year 2016 was 22.3.0%. While the level of non-revenue water is influenced by external factors such as breaks and leaks, the City is making a significant effort to reduce real (water) losses through a comprehensive program of water main rehabilitation, leak detection, system audits, and AMI. The City is assessing and rehabilitating approximately one percent of the distribution system annually through its capital improvement program and O&M Program. In addition, the City continues systematic leak detection efforts to reduce real losses and to identify small leaks before they develop into major leaks and/or breaks.

The Advanced Meter Infrastructure/Automated Meter Reading project and associated billing system is instrumental in reducing apparent water losses due to billing and metering errors. It also identifies changes in consumption, which may indicate under-registering meters, in a timely fashion. As of November 2016, the City's meter replacement project is considered substantially complete and the County AMR project is scheduled to complete in December of 2018.

The City has secured fire hydrants, in areas where they are frequently opened by unauthorized individuals, to prevent this unauthorized consumption. This reduces the non-revenue water. In addition, in 2010, the City audited large meters for open bypasses, which is another source of unauthorized and non-revenue water. In Fiscal Year 2017, the City will complete the installation of data loggers throughout the distribution system to obtain accurate data about how the water is transferred between the pressure zones, which, coupled with the new CIS (Customer Information System), will result in a more accurate and robust water audit.

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**SECTION SEVEN**

**Litigation**

## **LITIGATION**

There are various lawsuits pending against the City relating to the Utilities. The City believes that, individually and in the aggregate, these actions will have no material adverse effect on the financial position of the City or the future operations of the Utilities.