

In the opinion of Bond Counsel, based upon an analysis of existing laws, regulations, rulings and court decisions, interest on the Bonds (including, in the case of Bonds sold at an original issue discount, the difference between the initial offering price and par) is excluded from gross income for Federal income tax purposes. Bond Counsel is also of the opinion that interest on the Bonds is not a specific item of tax preference under §57 of the Internal Revenue Code of 1986, as amended (the “Code”) for purposes of Federal individual or corporate alternative minimum taxes. The Bonds, and the interest income therefrom, are free from taxation for purposes of personal income, corporate net income and personal property taxes within the Commonwealth of Pennsylvania. (See “TAX MATTERS” herein.)

The Authority has designated the Bonds as “Qualified Tax-Exempt Obligations” pursuant to §265(b)(3) of the Code (relating to the deductibility of interest expense by certain financial institutions).

\$10,000,000
MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
Beaver County, Pennsylvania
Water and Sewer Revenue Bonds, Series of 2019

Dated: Date of Delivery
Principal Due: November 15, as shown on inside cover
Denomination: Integral multiples of \$5,000

Interest Payable: May 15 and November 15
First Interest Payment: May 15, 2019
Form: Book-Entry Only

Payable: The Water and Sewer Revenue Bonds, Series of 2019, in the aggregate principal amount of \$10,000,000 (the “Bonds”) of the Municipal Water Authority of Aliquippa, Beaver County, Pennsylvania (the “Authority”), will be issued as fully registered bonds and, when issued, will be registered in the name of and held by Cede & Co., as nominee for The Depository Trust Company, New York, New York (“DTC”). DTC will act as securities depository for the Bonds. Purchases of the Bonds will be made only in book-entry form, and purchasers will not receive certificates representing their interests in the Bonds. So long as DTC, or its nominee, Cede & Co., is the registered owner of the Bonds, payments of the principal of and interest on the Bonds will be made by The Bank of New York Mellon Trust Company, N.A. as Trustee (the “Trustee”), located in Pittsburgh, Pennsylvania, directly to Cede & Co. Disbursement of such payments to DTC Participants is the responsibility of DTC, and the further disbursement of such payments to Beneficial Owners of the Bonds is the responsibility of the applicable DTC Participants and Indirect Participants. See “BOOK-ENTRY ONLY SYSTEM” herein.

Security for the Bonds: The Bonds are payable from the Pledged Revenues as provided in the Trust Indenture from the Authority to the Trustee, dated as of November 15, 2017 (the “2017 Indenture”), as amended and supplemented by the First Supplemental Indenture dated as of October 11, 2018 and the Second Supplemental Indenture dated as of the date of delivery of the Bonds, and as further amended and supplemented from time to time (the “Indenture”). Under the Indenture, the Authority must establish rates and other charges which, together with other revenues received in connection with the operation of its water system (the “Water System”) and its sanitary sewer system (the “Sewer System,” and together with the Water System, the “Utility System”) and other available funds, will be sufficient in each fiscal year of the Authority to produce revenues in an amount equal to the Administrative Expenses of the Authority, plus 110 percent of the Debt Service Requirements on the Bonds and all other bonds issued on a parity with the Bonds and then outstanding under the Indenture, plus funds sufficient to cure any deficiency in the Debt Service Reserve Fund, plus all amounts due in such fiscal year on subordinate debt and other payment obligations of the Authority (See “SECURITY FOR THE BONDS” and “SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE” herein.)

Optional Redemption: The Bonds maturing on or after November 15, 2024 are subject to redemption prior to maturity at the option of the Authority at any time on or after May 15, 2024 (see “REDEMPTION PROVISIONS” herein).

Purpose: Proceeds of the Bonds will be used to provide funds for and towards various capital projects of the Authority, funding capitalized interest on the Bonds and paying the costs of issuing and insuring the Bonds.

The Bonds are limited obligations of the Authority payable solely from Pledged Revenues as provided in the Indenture. The Authority has no taxing power. Neither the credit nor the taxing power of the United States of America, the Commonwealth of Pennsylvania (the “Commonwealth”) or any political subdivision of the Commonwealth (including the County of Beaver and the City of Aliquippa) is pledged for the payment of the principal of or interest on the Bonds, or any redemption premium payable upon redemption of Bonds prior to maturity; nor shall any of the Bonds be deemed to be obligations of the United States of America, the Commonwealth or any political subdivision of the Commonwealth.

Authorization for Issuance: The Bonds are being issued in accordance with the Pennsylvania Municipality Authorities Act, as amended, 53 Pa. C.S. §5601 et seq. (the “Act”), and pursuant to both the Indenture and a Resolution duly adopted by the Board of the Authority on September 19, 2018 (the “Resolution”).

Bond Insurance: The scheduled payment of principal of and interest on the Bonds when due will be guaranteed under an insurance policy to be issued concurrently with the delivery of the Bonds by MUNICIPAL ASSURANCE CORP.



Continuing Disclosure Undertaking: The Authority has agreed to provide, or cause to be provided, in a timely manner, certain information and notices in accordance with the requirements of Rule 15c2-12, as promulgated under the Securities Exchange Act of 1934. (See “CONTINUING DISCLOSURE UNDERTAKING” herein.)

Approvals: The Bonds are offered for delivery when, as and if issued by the Authority and received by the Underwriter and subject to the approval of certain legal matters by Law Offices of Wayne D. Gerhold, Pittsburgh, Pennsylvania, Bond Counsel. Certain legal matters will be passed upon for the Authority by its Solicitor, Myron Sainovich, Esquire, Beaver, Pennsylvania and for the Underwriter by its Limited Scope Underwriter’s Counsel, McNeese Wallace & Nurick LLC, Lancaster, Pennsylvania. CIM Investment Management, Inc., Pittsburgh, Pennsylvania, serves as Financial Advisor to the Authority in connection with the Bonds. It is expected that the Bonds in definitive form will be available for delivery in New York, New York on or about January 3, 2019.



RBC Capital Markets

\$10,000,000
MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
Beaver County, Pennsylvania
Water and Sewer Revenue Bonds, Series of 2019

Dated: Date of Delivery

Principal Due: November 15, as shown below

Denomination: Integral Multiples of \$5,000

Interest Payable: May 15 and November 15

First Interest Payment: May 15, 2019

Form: Book-Entry Only

MATURITY SCHEDULE

Year (November 15)	Principal Amount	Interest Rate	Yield	Price ⁽²⁾	CUSIP Numbers ⁽¹⁾
2024	\$50,000	3.00%	2.70%	101.487 ⁽³⁾	016332EJ3
2025	50,000	3.00	2.80	100.988 ⁽³⁾	016332EK0
2033	70,000 ⁽⁴⁾	3.40	3.55	98.275	016332EL8
2038	155,000 ⁽⁴⁾	3.70	3.83	98.199	016332EM6
2040	1,070,000 ⁽⁴⁾	4.00	4.00	100.000	016332EQ7
2043	3,360,000 ⁽⁴⁾	4.00	4.05	99.217	016332EN4
2047	5,245,000 ⁽⁴⁾	4.00	4.09	98.479	016332EP9

⁽¹⁾The CUSIP (Committee on Uniform Securities Identification Procedures) numbers have been assigned by an organization not affiliated with the Authority or the Underwriter, and such parties are not responsible for the selection or use of the CUSIP numbers. The CUSIP numbers are included solely for the convenience of bondholders and no representation is made as to the correctness of such CUSIP numbers. CUSIP numbers assigned to securities may be changed during the term of such securities based on a number of factors including, but not limited to, the refunding or defeasance of such issue or the use of secondary market financial products. Neither the Authority nor the Underwriter has agreed to, and there is no duty or obligation to, update this Official Statement to reflect any change or correction in the CUSIP numbers set forth above.

⁽²⁾Based on a settlement date of January 3, 2019.

⁽³⁾Priced to the first optional call date (May 15, 2024).

⁽⁴⁾Term Bonds. See "Redemption Provisions – Mandatory Redemption" herein

No dealer, broker, salesman or other person has been authorized by the Authority or the Underwriter to give any information or to make any representation, other than that given or made in this Official Statement, and if given or made, any such other information or representation may not be relied upon as having been authorized by the Authority or the Underwriter. This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of the Bonds by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale. This Official Statement has been approved by the Authority and, while the information set forth in this Official Statement has been furnished by the Authority and other sources which are believed to be reliable, such information is not guaranteed as to accuracy or completeness, and is not to be construed as a representation by the Underwriter or, as to information obtained from other sources, by the Authority. The information and expressions of opinion set forth in this Official Statement are subject to change without notice and neither the delivery of this Official Statement nor any sale made under this Official Statement shall, under any circumstances, create any implication that the affairs of the Authority have remained unchanged since the date of this Official Statement or the earliest date of which certain information contained herein is given.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITER MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME, WITHOUT NOTICE.

THE ORDER AND PLACEMENT OF MATERIALS IN THIS OFFICIAL STATEMENT, INCLUDING THE APPENDICES, ARE NOT TO BE DEEMED A DETERMINATION OF RELEVANCE, MATERIALITY OR IMPORTANCE, AND THIS OFFICIAL STATEMENT, INCLUDING THE APPENDICES MUST BE CONSIDERED IN ITS ENTIRETY. THE OFFERING OF THE BONDS IS MADE ONLY BY THE MEANS OF THIS ENTIRE OFFICIAL STATEMENT.

THE UNDERWRITER HAS PROVIDED THE FOLLOWING SENTENCE FOR INCLUSION IN THIS OFFICIAL STATEMENT:

THE UNDERWRITER HAS REVIEWED THE INFORMATION IN THIS OFFICIAL STATEMENT PURSUANT TO ITS RESPONSIBILITIES TO INVESTORS UNDER THE FEDERAL SECURITIES LAWS, BUT THE UNDERWRITER DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION.

THE BOND INSURER HAS PROVIDED THE FOLLOWING SENTENCE FOR INCLUSION IN THIS OFFICIAL STATEMENT:

Municipal Assurance Corp. ("MAC") makes no representation regarding the Bonds or the advisability of investing in the Bonds. In addition, MAC has not independently verified, makes no representation regarding, and does not accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein, or omitted herefrom, other than with respect to the accuracy of the information regarding MAC supplied by MAC and presented under the heading "Bond Insurance" and "Appendix G - Specimen Municipal Bond Insurance Policy".

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA

(Beaver County, Pennsylvania)

160 Hopewell Avenue
Aliquippa, Pennsylvania 15001

(724) 375-5525

Website: www.aliquippawater.com

MEMBERS OF THE AUTHORITY BOARD

Matthew J. Mottes	Chairman
Robert Steffes	Vice Chairman
Wilbur Moreland	Secretary
Jason Stauffer	Treasurer
William Lawbaugh	Assistant Secretary/Treasurer

GENERAL MANAGER

Robert J. Bible, P.E.

AUTHORITY SOLICITOR

Myron Sainovich, Esquire
Beaver, Pennsylvania

BOND COUNSEL

Law Offices of Wayne D. Gerhold
Pittsburgh, Pennsylvania

AUTHORITY CONSULTING ENGINEER

Lennon, Smith, Souleret Engineering, Inc.
Coraopolis, Pennsylvania

FINANCIAL ADVISOR

CIM Investment Management, Inc.
Pittsburgh, Pennsylvania

TRUSTEE

The Bank of New York Mellon Trust Company, N.A.
Pittsburgh, Pennsylvania

UNDERWRITER

RBC Capital Markets, LLC
Pittsburgh, Pennsylvania

LIMITED SCOPE UNDERWRITER'S COUNSEL

McNees Wallace & Nurick LLC
Lancaster, Pennsylvania

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OFFICIAL STATEMENT

\$10,000,000

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA Beaver County, Pennsylvania

Water and Sewer Revenue Bonds, Series of 2019

INTRODUCTION

The following information is submitted with respect to \$10,000,000 principal amount of Water and Sewer Revenue Bonds, Series of 2019, dated the date of delivery (the “Bonds”), proposed to be issued by the Municipal Water Authority of Aliquippa, Beaver County, Pennsylvania (the “Authority”), pursuant to and secured by a Trust Indenture dated as of November 15, 2017 (the “2017 Indenture”), as amended and supplemented by the First Supplemental Indenture dated as of October 11, 2018 (as so amended and supplemented, the “2018 Indenture”) and the Second Supplemental Indenture dated as of the date of initial issuance and delivery of the Bonds, and as further amended and supplemented from time to time (the “Indenture”), entered into between the Authority and Bank of New York Mellon Trust Company, N.A. (the “Trustee”).

The Bonds are being issued pursuant to the Pennsylvania Municipality Authorities Act, 53 Pa.C.S. § 5601 *et. Seq.* (the “Act”), and a resolution adopted by the Board of the Authority on September 19, 2018 (the “Resolution”).

The Bonds are secured pursuant to the provisions of the Indenture and are limited obligations of the Authority. The prompt payment when due of the principal of and interest on the Bonds, and any redemption premium payable upon redemption of Bonds prior to maturity, is payable solely from the Pledged Revenues derived by the Authority from the operation of its water system (the “Water System”) and its sanitary sewer system (the “Sewer System,” and together with the Water System, the “Utility System”), and certain funds held under the Indenture, to the extent and in the manner provided in the Indenture. (See “SECURITY OF THE BONDS” and “SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE” herein.)

The Authority has no taxing power. Neither the credit nor the taxing power of the United States of America, the Commonwealth of Pennsylvania (the “Commonwealth”) or any political subdivision of the Commonwealth (including the County of Beaver and the City of Aliquippa) is pledged for the payment when due of the principal of or interest on the Bonds, or any redemption premium payable upon redemption of Bonds prior to maturity; nor shall any of the Bonds be deemed to be obligations of the United States of America, the Commonwealth or any political subdivision of the Commonwealth.

Neither the delivery of this Official Statement nor any sale of the Bonds made hereunder shall, under any circumstances, create an implication that there have been no changes in the affairs of the Authority since the date of this Official Statement or the earliest date as of which certain information contained herein is given.

THE AUTHORITY

The Authority is a body corporate and politic created under the Municipality Authorities Act of May 2, 1945, P.L. 382, on September 4, 1953, and exists pursuant to the provisions of the Act. The Authority was incorporated pursuant to an ordinance of the Borough of Aliquippa, Beaver County, Pennsylvania. Pursuant to an Ordinance dated February 11, 1986, the Borough of Aliquippa was changed from a borough to a third class city, known now as the City of Aliquippa (the “City”). The life of the Authority was extended to June 16, 2026 pursuant to a City Ordinance enacted on June 16, 1986. The life of the Authority will be further extended to September 12, 2068, pursuant to a resolution of the City Council of the City adopted on August 29, 2018. Authorities existing under the Act may have lives of up to fifty years which may be extended by amendments to their articles of incorporation. The Authority is governed by a Board of five members appointed by the City for staggered five-year terms.

The Authority owns and operates the Utility System, providing water and sewer service within the City and to portions of adjacent Hopewell Township, Raccoon Township and nearby Potter Township, all located in Beaver County.

The Authority is empowered to exercise any and all powers conferred by the Act necessary for it to acquire, hold, construct, enlarge, improve, maintain, operate, own, lease either as lessor or lessee, water works, water supply works and water distribution systems and sewers, sewer systems or parts thereof, sewage treatment works, including works for treating and disposing of industrial waste for the Borough of Aliquippa, and for such other territory as it may lawfully serve.

OUTSTANDING DEBT OF THE AUTHORITY

On November 15, 2017, the Authority issued \$7,020,000 aggregate principal amount of its Water and Sewer Revenue Bonds, Series of 2017 (the “2017 Bonds”) under the 2017 Indenture, \$6,835,000 aggregate principal amount of which remain outstanding. The proceeds of the 2017 Bonds were used together with other funds of the Authority to refund or otherwise retire or defease all of the existing debt of the Authority, including a vehicle loan, a PennVest loan and revenue bonds issued in 1998 (the “1998 Bonds”), 2003 (the “2003 Bonds”) and 2013 under a trust indenture dated as of March 15, 1994, as subsequently supplemented (the “Prior Indenture”), which indenture was thereupon defeased. On October 11, 2018, the Authority issued \$10,000,000 aggregate principal amount of its Water and Sewer Revenue Bonds, Series of 2018 (the “2018 Bonds”) under the 2018 Indenture, all of which remain outstanding. The net proceeds of the 2018 Bonds are being used to pay costs of certain capital projects of the Authority (collectively, the “2018 Project”) and to provide for capitalized interest on the 2018 Bonds. Upon issuance of the Bonds, the Bonds, the 2018 Bonds and the 2017 Bonds will be the only outstanding debt of the Authority.

PURPOSE OF THE ISSUE

The proceeds of the Bonds will be used to provide funds for and towards paying the costs of various capital projects of the Authority (the “Project”), funding capitalized interest and paying the costs of issuing and insuring the Bonds.

Future Financing

The Authority anticipates future financing for additional capital projects within the next 2-5 years, but has not determined the full scope or timing of such future financing at this time. Additionally, the Authority is seeking grants and other funding for such additional capital projects, so it is not presently able to predict the amount of financing required.

SOURCES AND USES OF FUNDS

The proceeds from the sale of the Bonds are expected to be applied substantially in the following manner:

<u>Sources of Funds:</u>	<u>Total</u>
Par Amount of the Bonds	\$10,000,000.00
Less Net Original Issue Discount	(108,846.80)
Total Sources of Funds.....	\$ 9,891,153.20
<u>Uses of Funds:</u>	
Construction Fund Deposit.....	\$7,806,487.30
Capitalized Interest.....	1,828,011.38
Debt Service Reserve Fund Contribution/Surety	16,066.17
Costs of Issuance ⁽¹⁾	240,588.35
Total Use of Funds.....	\$9,891,153.20

⁽¹⁾Includes bond discount, legal, financial advisor, printing, rating, municipal bond insurance premium, CUSIP, Trustee and miscellaneous.

DESCRIPTION OF THE BONDS

The Bonds are being issued as fully registered bonds, without coupons, in the denominations of \$5,000 principal amount or any integral multiple thereof within a maturity. Principal and interest are payable as set forth below.

When issued, the Bonds will be registered in the name of Cede & Co., as nominee for The Depository Trust Company (“DTC”), New York, New York. Purchasers of the Bonds (the “Beneficial Owners”) will not receive any physical delivery of bond certificates, and beneficial ownership of the Bonds will be evidenced only by book entries. See “**BOOK-ENTRY ONLY SYSTEM**” herein.

Payment of Principal and Interest

So long as Cede & Co., as nominee of DTC, is the registered owner of the Bonds, payments of principal of and interest on the Bonds, when due, are to be made to DTC, and all such payments will be valid and effective to satisfy fully and to discharge the obligations of the Authority with respect to, and to the extent of, principal and interest so paid. If the use of the book-entry only system for the Bonds is discontinued for any reason, bond certificates will be issued and payment of principal and interest on the Bonds will be made as described in the following paragraphs.

The aggregate principal amount of the Bonds is \$10,000,000. The Bonds are initially dated as of the date of delivery, bear interest at the rates per annum, and mature in the amounts and on the dates, listed in the **MATURITY SCHEDULE** shown on the inside of the Cover Page of this Official Statement. Interest on the Bonds will be computed on the basis of a 30-day month and a 360-day year and is payable semiannually on May 15 and November 15 of each year (“Interest Payment Dates”), commencing May 15, 2019. Interest on each Bond is payable from the Interest Payment Date next preceding the date of authentication of such bond unless (a) such Bond is authenticated as of an Interest Payment Date, in which event it will bear interest from said Interest Payment Date, or (b) such Bond is registered and authenticated after a Record Date (as such term is hereinafter defined) and before the next succeeding Interest Payment Date, in which event such Bond will bear interest from such Interest Payment Date, or (c) such Bond is authenticated on or prior to the Record Date next preceding May 15, 2019, in which event such Bond will bear interest from the date of original delivery of the Bonds, or (d) as shown on the records of the Trustee, interest on such Bond is in default, in which event such Bond will bear interest from the date to which interest was last paid on such Bond, or, if no interest has been paid, from the said original date of delivery.

Upon the occurrence of an Event of Default, as defined in the Indenture, the principal of all bonds, including the Bonds, then outstanding under the Indenture, may be declared or may become due and payable upon the conditions, in the manner and with the effect provided in the Indenture. (See “**SECURITY FOR THE BONDS**” and “**SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE**” herein.)

The Bonds are issued only as fully registered bonds in the denomination of \$5,000 and integral multiples thereof within a maturity. The principal of each of the Bonds is payable to the registered owner thereof, when due, upon surrender of such Bond at the designated trust office of the Trustee or its designee. Interest on each of the Bonds is payable by check mailed to the person in whose name such Bond is

registered at the address of such person appearing on the registration books maintained by or on behalf of the Authority (the “Bond Register”) at the close of business on the first day of the month (whether or not a business day) in which the applicable Interest Payment Date falls (the “Record Date” for such Interest Payment Date), irrespective of any transfer or exchange of such Bond subsequent to such Record Date and prior to such Interest Payment Date, unless the Authority defaults in the payment of interest due on such Interest Payment Date. In the event of any such default, such defaulted interest will be payable to the person in whose name such Bond is registered at the close of business on a special record date for the payment of such defaulted interest fixed by the Trustee, such date to be not more than fifteen (15), nor less than ten (10), days prior to the date of proposed payment (whether or not a business day). The Indenture requires the Trustee, at the expense of the Authority, to cause notice of the proposed payment of such defaulted interest and the special record date therefor to be mailed, first class postage prepaid, to each such registered owner at least ten days before such special record date, at his address as it appears in the Bond Register at the close of business of the Trustee on the fifteenth day next preceding such special record date.

Transfer, Exchange and Registration of Bonds

Subject to the provisions described below under “BOOK-ENTRY-ONLY SYSTEM”, the Bonds may be transferred or exchanged only on the Bond Register, which will be maintained at a designated office of the Trustee or its duly authorized successor. No transfer or exchange of any Bond will be valid unless made at such office and registered on the Bond Register.

The Authority and the Trustee will not be required: (i) to issue or to register the transfer of or to exchange any Bonds then considered for redemption during a period beginning at the close of business on the fifteenth day next preceding any date of selection of Bonds to be redeemed and ending at the close of business on the day on which the applicable notice of redemption is given, (ii) to issue or register the transfer of or to exchange any portion of any Bond selected for redemption, in whole or in part, except for the issuance of Bonds in exchange for the unredeemed portions of Bonds duly redeemed in part, or (iii) to issue or register the transfer of or to exchange any Bond after the record date pertaining to any interest payment date therefor and before such interest payment date. Bonds may be exchanged for a like aggregate principal amount of Bonds of other authorized denominations of the same maturity and interest rate.

Any Bond may be transferred or exchanged by the registered owner thereof upon surrender thereof to the Trustee, at its designated trust office, accompanied by a written instrument or instruments in form, with instructions, and with guaranty of signature satisfactory to the Trustee, duly executed by the registered owner thereof or his attorney-in-fact or legal representative. The Trustee will enter any transfer of ownership of Bonds in the Bond Register and will authenticate and deliver in the name of the transferee or transferees new fully registered Bonds in authorized denominations of the same maturity for the aggregate amount which the transferee or transferees are entitled to receive at the earliest practicable time.

The Bonds originally will be issued solely in book-entry form, registered in the name of Cede & Co. as nominee for The Depository Trust Company (“DTC”). So long as the Bonds are held in the book-entry only system, DTC or its nominee will be the registered owner of all of the Bonds for all purposes of the Resolution, the Indenture, the Bonds and this Official Statement. For purposes of this Official Statement, DTC or its nominee, and its successors and assigns, are referred to as the “Securities Depository.” See “**BOOK-ENTRY ONLY SYSTEM**” herein.

REDEMPTION PROVISIONS

Optional Redemption

Bonds stated to mature on or after November 15, 2024, are subject to redemption prior to maturity, at the option of the Authority, as a whole, or from time to time in part, in any order of maturity selected by the Authority and within a maturity as drawn by lot, on May 15, 2024, or on any date thereafter, upon payment of the principal amount redeemed, together with accrued interest thereon to the date fixed for redemption.

Mandatory Redemption

In the manner and upon the terms and conditions provided in the Indenture, the Bonds stated to mature on November 15 of the years 2033, 2038, 2040, 2043 and 2047 are subject to mandatory redemption, in part, prior to maturity, by lot within the maturity, at a redemption price equal to 100% of the principal amount thereof together with accrued interest thereon to the date fixed for redemption, on November 15 of the years and in the aggregate principal amounts set forth below:

As to Bonds Stated to Mature on November 15, 2033:		As to Bonds Stated to Mature on November 15, 2038:		As to Bonds Stated to Mature on November 15, 2040:		As to Bonds Stated to Mature on November 15, 2043:		As to Bonds Stated to Mature on November 15, 2047:	
Principal to be		Principal to be		Principal to be		Principal to be		Principal to be	
Year	Redeemed	Year	Redeemed	Year	Redeemed	Year	Redeemed	Year	Redeemed
2031	\$20,000	2034	\$25,000	2039	\$ 45,000	2041	\$1,070,000	2044	\$1,225,000
2032	25,000	2035	25,000	2040	1,025,000*	2042	1,120,000	2045	1,280,000
2033	25,000*	2036	30,000			2043	1,170,000*	2046	1,340,000
		2037	35,000					2047	1,400,000*
		2038	40,000*						

*Stated maturity.

Any such redemption will be upon application of money available for the purpose in the applicable sinking fund established within the Debt Service Fund under the Indenture. In lieu of such mandatory redemption, the Trustee, on behalf of the Authority, may purchase from money

in the said sinking fund, at a price not to exceed the principal amount plus accrued interest, or the Authority may tender to the Trustee for cancellation, all or part of the Bonds subject to mandatory redemption on any such date.

If any maturity of the Bonds which is subject to mandatory sinking fund redemption is retired in part, by purchase or optional redemption, the Authority will be entitled to designate whether the principal amount so retired is to be credited against the principal amount of Bonds of such maturity required to be called for mandatory sinking fund redemption on any particular future date or dates (and, in which case, the particular mandatory redemption date) or credited against the principal amount of such Bonds to be due and payable at stated maturity, in each case in whole multiples of \$5,000 principal amount.

Notice of Redemption

So long as Cede & Co., as nominee of DTC, is the registered owner of the Bonds, the Authority and the Trustee will send redemption notices only to Cede & Co. See "BOOK-ENTRY ONLY SYSTEM" herein for further information regarding conveyance of notices to Beneficial Owners.

Notice of any redemption will be given by depositing a copy of the redemption notice in first class mail not less than thirty (30) nor more than sixty (60) days prior to the date fixed for redemption, addressed to each of the registered owners of the Bonds to be redeemed, at their addresses shown on the Bond Register as of the date such Bonds are selected for redemption; provided, however, that failure to give such notice by mailing, or any defect therein or in the mailing thereof, with respect to any particular Bond or Bonds will not affect the validity of any proceeding for redemption of other Bonds so called for redemption as to which proper notice has been given.

On the date designated for redemption, notice having been provided as aforesaid, and money for payment of the applicable redemption price being held by the Trustee, interest on the Bonds or portions thereof so called for redemption will cease to accrue and such Bonds or portions thereof will cease to be entitled to any benefit or security under the Indenture, and registered owners of such Bonds or portions thereof so called for redemption will have no rights with respect thereto, except to receive payment of the principal to be redeemed and accrued interest thereon to the date fixed for redemption, together with any applicable redemption premium payable upon such redemption.

If at the time of mailing the notice of redemption the Authority has not deposited with the Trustee moneys sufficient to redeem all the Bonds called for redemption, such notice may state that it is conditional, that is, subject to the deposit of the redemption moneys with the Trustee by the designated redemption date, and if it includes such a statement such notice will be of no effect unless such moneys are so deposited.

Manner of Redemption

While Cede & Co., as nominee of DTC, is the registered owner of the Bonds, payment of the redemption price is expected to be made by Cede & Co. or DTC in accordance with the existing arrangements by and among the Authority, the Trustee and DTC and, if less than all of the Bonds in a particular maturity are to be redeemed, the amount of the interest of each DTC Participant, Indirect Participant and Beneficial Owner on such Bonds to be redeemed is expected to be determined by such entities according to the governing arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. See "BOOK-ENTRY ONLY SYSTEM" herein for further information regarding redemption of Bonds registered in the name of Cede & Co.

If a Bond is of a denomination larger than \$5,000, a portion of such Bond may be redeemed. For the purposes of redemption, a Bond will be treated as representing the number of Bonds that is equal to the principal amount thereof divided by \$5,000, each \$5,000 portion of such Bond being subject to redemption. In the case of partial redemption of a Bond, payment of the redemption price will be made only upon surrender of such Bond in exchange for a Bond or Bonds in authorized denominations of the same maturity and interest rate, in an aggregate principal amount equal to the unredeemed portion of the principal amount thereof.

If the redemption date for any Bond is a Saturday, Sunday, legal holiday or on a day on which banking institutions in the Commonwealth are authorized or required by law or executive order to close, then the date for payment of such principal, premium, if any, and interest payable upon such redemption will be the next succeeding day which is not a Saturday, Sunday, legal holiday or a day on which such banking institutions are authorized or required to close, and payment on such date will have the same force and effect as if made on the nominal date of redemption.

BOOK-ENTRY ONLY SYSTEM

The information under this heading has been obtained from materials provided by DTC for such purpose. The Issuer and RBC Capital Markets, LLC (herein referred to as the "Underwriter") do not guaranty the accuracy or completeness of such information and such information is not to be construed as a representation of the Issuer or the Underwriter.

DTC, New York, New York, will act as securities depository for the Bonds. The Bonds will be issued as fully-registered bonds registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered certificate will be issued for the Bonds of each separate maturity and interest rate, in the aggregate principal amount of such maturity and interest rate, and will be deposited with DTC.

DTC, the world's largest depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the

Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments from over 100 countries that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation all of which are registered clearing agencies. DTCC is owned by the users of its registered subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has a S&P Global Ratings rating: AA+. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchases of the Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Bonds on DTC's records. The ownership interest of each actual purchaser of each Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Bonds, except in the event that use of the book-entry system for the Bonds is discontinued.

To facilitate subsequent transfers, all Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not affect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices will be sent to DTC. If less than all of the Bonds of a maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such maturity to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Issuer as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Payments of principal, premium, if any, and interest on the Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the Issuer or the Trustee, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Issuer or the Trustee, subject to any statutory or regulatory requirements as may be in effect from time to time. Payments of principal, premium, if any, and interest on the Bonds to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the Issuer or the Trustee, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as depository with respect to the Bonds at any time by giving reasonable notice to the Issuer or the Trustee. Under such circumstances, in the event that a successor depository is not obtained, bond certificates are required to be printed and delivered.

The Issuer may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, bond certificates will be printed and delivered to DTC.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that Issuer believes to be reliable, but Issuer takes no responsibility for the accuracy thereof.

Disclaimer of Liability for Failures of DTC

The Issuer and the Underwriter cannot and do not give any assurances that DTC, the Direct and Indirect Participants or others will distribute payments of principal, interest or premium with respect to the Bonds paid to DTC or its nominee as the owner of Bonds, or will distribute any redemption or other notices, to the Beneficial Owners, or that they will do so on a timely basis or will serve and act in the manner described in this Official Statement. The Issuer and the Underwriter are not responsible or liable for the failure of DTC or any Participant to make any payment or give any notice to a Beneficial Owner with respect to the Bonds, or any error or delay relating thereto.

SECURITY FOR THE BONDS

Pledge of Utility System Revenues

The Bonds will be issued under and secured by the Indenture. The Indenture provides for the issuance of bonds in addition to the Bonds, the 2018 Bonds and the 2017 Bonds under the limitations therein set forth, and defines the duties and responsibilities of the parties with respect to the expenditure of the proceeds of the Bonds, the maintenance and operation of the Utility System, the conservation and application of all funds and accounts of the Authority created pursuant to the Indenture ("Funds"), the security for moneys on deposit, the provisions relating to reserves, the provisions relating to the redemption of the Bonds, and the provisions for the payment of the principal of and interest on the Bonds, and any redemption premium payable upon redemption of Bonds prior to maturity. The Bonds are equally and ratably secured, except as otherwise provided in the Indenture, with bonds of other series which may be issued and outstanding from time to time under the Indenture, including the 2017 Bonds and the 2018 Bonds (see "SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE" herein).

Payment of the principal of and interest on the Bonds, the 2017 Bonds, the 2018 Bonds and any other bonds outstanding under the Indenture issued from time to time on a parity with the Bonds (collectively, the "Parity Bonds") , and any redemption premium payable upon redemption of Parity Bonds prior to maturity, is equally and ratably secured under the Indenture by a first lien on, together with a pledge and assignment of, the Pledged Revenues (as such term is defined in the Indenture) of the Authority derived from the operation of its Utility System (the "Pledged Revenues").

Debt Service Reserve Fund

The Indenture provides for a Debt Service Reserve Fund which is required to be funded at all times in an amount equal to the Debt Service Reserve Requirement. The Debt Service Reserve Requirement means, at any time with respect to Parity Bonds outstanding under the Indenture ("Outstanding Parity Bonds"), the least of: (a) the aggregate Maximum Annual Debt Service Requirement (as such term is defined in the Indenture) with respect to the Outstanding Parity Bonds (the "Maximum Annual Debt Service Requirement"); (b) 125% of the Average Annual Debt Requirements (as such term is defined in the Indenture) with respect to the Outstanding Parity Bonds; or (c) 10% of the principal amount of the Outstanding Parity Bonds (or of the issue price of the Outstanding Parity Bonds, if more than a de minimis amount of original issue discount or premium exists). The Debt Service Reserve Fund may be funded with any combination of cash, investments or one or more reserve policies or surety bonds meeting the requirements of the Indenture.

Bondholder Rights and Remedies

The remedies available to holders of the Bonds upon failure to pay the principal of and interest on the Bonds, and any redemption premium payable upon redemption of Bonds prior to maturity, when due, include those prescribed by the Act and as set forth in the Indenture.

As provided in the Indenture, upon the happening and during continuance of any Event of Default, as defined in the Indenture ("Event of Default"), then and in every case the Trustee may declare, and upon written request of holders of not less than 25% in aggregate principal amount of the Outstanding Parity Bonds, or (but in each case only if such entity then insures Outstanding Parity Bonds) either Build America Mutual Assurance Company ("BAM") as bond insurer of the 2017 Bonds (the "2017 Bond Insurer") , Municipal Assurance Corp. ("MAC") as bond insurer of the 2018 Bonds (the "2018 Bond Insurer"), MAC as bond insurer of the Bonds (the "Bond Insurer") or (to the extent given the applicable right under the applicable supplemental indenture) any bond insurer insuring Parity Bonds hereafter issued (collectively, as of any particular time, the "Current Bond Insurers" and each a "Current Bond Insurer"), provided such Current Bond Insurer is not in default under the applicable bond insurance policy, the Trustee is required to declare, by notice in writing delivered to the Authority and the Current Bond Insurers, the principal of all Outstanding Parity Bonds to be due and payable, and the interest accrued thereon to be due and payable immediately; and upon such declaration the same will become due and payable immediately; provided, however, that the consent of the Current Bond Insurers may be required for any such acceleration.

The foregoing provision, however, is subject to the condition that if, at any time, after the principal of said Parity Bonds has been so declared to be due and payable, the Authority pays all arrears of interest upon the Parity Bonds, and interest on overdue installments of interest at the annual rate of interest of such Parity Bonds, and performs all other things in respect of which it may have been in default under the Indenture, and pays the reasonable charges of the Trustee and its counsel and those of the registered owners of said Parity Bonds, including attorney's fees paid or incurred, then, in every such case, the registered owners of a majority in principal amount of the Outstanding Parity Bonds, by written notice to the Authority and to the Trustee, may waive such default and its consequences and such waiver will be binding upon the Trustee and upon all registered owners of Parity Bonds; but no such waiver will extend to or affect any subsequent default or impair any right or remedy consequent thereon.

Current Bond Insurers may have rights to direct, or to withhold required consent to, any action or remedy upon default. For a complete statement of the rights of the Current Bond Insurers, reference is hereby made to the Indenture. In particular, the Indenture provides that so long as it is not in default under the Policy the Bond Insurer will have the right to direct the Trustee in all matters concerning an Event of Default as though it were the sole owner and holder of the Bonds, notwithstanding any action or election to the contrary by Bondholders.

SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE

The Bonds are to be issued under the Indenture. The Bonds are secured under the Indenture by an assignment and pledge to the Trustee of the Pledged Revenues (as defined in the Indenture) from the Utility System and certain other funds held under the Indenture. The following summarizes certain provisions of the Indenture, but is not a full statement thereof.

Defined Terms

[Note: In these definitions the terms “Bond” and “Bonds” refer to Parity Bonds, including the Bonds but not only the Bonds, the term “2019 Bonds” refers to the Bonds, the term “2019 Bond Insurer” refers to the Bond Insurer and the term “Original Indenture” refers to the 2017 Indenture.]

The Indenture contains the following definitions for each of the following respective terms used therein:

“Additional Bonds” shall mean bonds authorized and issued pursuant to the Indenture in addition to the 2017 Bonds, secured thereunder equally and ratably with the 2017 Bonds, and shall, in connection with the issuance of particular Additional Bonds pursuant to the Indenture, mean the particular Additional Bonds at the time being issued.

“Administrative Expenses” shall mean the expenses reasonably incurred or to be incurred by the Authority in connection with its operation and administration of the Utility System and the Bonds including, without limitation, ordinary repairs and maintenance, insurance premiums, allocable labor costs, utilities, supplies, all taxes imposed upon the Authority or such assets or properties, auditing fees, legal fees, engineering fees, office expenses, general administrative expenses, compensation and expenses of the Trustee, the Rebate Amount and other costs and expenses which constitute costs of operation or administration of the Utility System. Administrative Expenses shall include costs of goods and services (not comprising capital expenditures) purchased from other governmental entities. Administrative Expenses shall not include depreciation, amortization or any other non-cash charges.

“Authorized Depository” shall mean any national banking association, incorporated bank or bank and trust company in good standing qualified and licensed to conduct business in the Commonwealth of Pennsylvania, subject to examination by federal or state authority, insured by the Federal Deposit Insurance Corporation (“FDIC”) or by any other agency of the United States of America performing functions similar to the FDIC, having a reported capital and surplus of not less than \$75,000,000, and which is not unsatisfactory to the Trustee.

“Average Annual Debt Service Requirements” shall mean, as to those Bonds under consideration, the sum of the debt service requirements for the fiscal years contained in the period under consideration with respect to such Bonds, divided by the number of fiscal years contained in such period. Unless specified otherwise, “Bonds under consideration” does not include any Subordinate Debt, or the debt service requirement on any Subordinate Debt. The term “period under consideration” means, as to a particular series of Bonds, the period beginning with the fiscal year within which the certificate containing such term shall be dated and ending with the fiscal year in which the final maturity of the Bonds of such series actually occurs.

“Bond” or “Bonds” shall mean: (a) the 2017 Bonds issued pursuant to the Indenture; and (b) Additional Bonds, all as issued and Outstanding from time to time under the Indenture.

“Capital Additions” shall mean new or additional property which is properly chargeable to fixed property accounts in accordance with generally accepted accounting principles (including, without limiting the generality of the foregoing, lands, rights-of-way, easements and similar interests in real property and all buildings, laboratories, improvements, tunnels, syphons, filters, flow meters, tanks, shops, structures, pumping stations, fixtures, ejector stations, engines, boilers, pumps, meters, other equipment, and any additions to existing transportation equipment) and any and all permanent improvements, additions, extensions and betterments to real or fixed property of the Authority, which new or additional property, permanent improvements, additions, extensions and betterments shall be hereafter constructed or otherwise acquired by the Authority by the use of moneys deposited with the Trustee under the Indenture and which shall be used or useful in connection with the Utility System.

“Consulting Engineer” shall mean such independent engineer or engineering firm as shall at the time be employed for the purpose of performing the functions and duties of the Consulting Engineer under the Indenture.

“Debt Service Requirements” shall mean, with respect to any period, the amounts required in said period to pay, or to be set aside for the payment of, the principal of, or interest on, Bonds, or required for sinking fund deposits or the restoration of the Debt Service Reserve Fund, or the reimbursement of any draws on a surety bond, insurance policy or letter of credit described in the Indenture, excepting amounts set aside out of proceeds of Bonds for payment of interest. For the purpose of ascertaining aggregate Debt Service Requirements, interest shall be computed to mandatory redemption dates to the extent that Bonds are required to be redeemed by mandatory redemption provisions, and otherwise computed to stated maturity dates.

“Debt Service Reserve Requirement” shall mean at any time with respect to the Outstanding Bonds or a series of Outstanding Bonds, the least of: (a) the aggregate Maximum Annual Debt Service Requirements with respect to the Outstanding Bonds; (b) 125% of the Average Annual Debt Service Requirements with respect to such Outstanding Bonds; or (c) 10% of the principal amount of all such Outstanding Bonds (or of the issue price of all such Outstanding Bonds, if more than a *de minimis* amount of original issue discount or premium exists). The initial Debt Service Reserve Requirement for the 2019 Bonds shall be \$1,456,000 and shall be satisfied by the issuance of a Reserve Fund Credit Instrument issued by the 2019 Bond Insurer. The Debt Service Reserve Fund created for the 2017 Bonds under the Original Indenture, the 2018 Debt Service Reserve Fund created for the 2018 Bonds under the First Supplemental Indenture and the 2019

Debt Service Reserve Fund created for the 2019 Bonds under the Second Supplemental Indenture, respectively, shall be separate funds with separate Debt Service Reserve Requirements.

“Maximum Annual Debt Service Requirements” shall mean with respect to the Bonds at the time under consideration the maximum Debt Service Requirements payable for any one fiscal year of the Authority during the remaining life of such Bonds.

“Net Revenues” shall mean Receipts and Revenues, less Administrative Expenses, for the time period under consideration.

“Outstanding” shall mean, with reference to Bonds as of any particular time, all Bonds executed, authenticated, issued and delivered under this Indenture, except:

- (a) Bonds cancelled at or prior to such time;
- (b) Bonds for payment of which funds have been deposited with the Trustee or shall have been set aside by the Trustee as provided in the Indenture for that purpose and which shall have matured by their express terms but which shall not have been surrendered for payment;
- (c) Bonds in substitution for which other Bonds shall have been authenticated and delivered pursuant to the Indenture;
- (d) Bonds for redemption of which funds then shall be held, in trust, by the Trustee; provided, however, that such redemption shall be required by provisions hereof without further action of the Authority, or that notice of such redemption shall have been mailed to the owners of such Bonds; and
- (e) Bonds which shall have been purchased and paid for by the Authority or by the Trustee on behalf of the Authority, but which shall not have been delivered for cancellation.

The foregoing, however, shall be subject to the condition that for purposes of reference to Registered Owners of a particular percentage of Bonds, there shall be excluded Bonds, if any, held by the Authority.

“Pledged Revenues” shall mean (a) Net Revenues, and (b) all moneys and securities (except moneys and securities held in the Rebate Fund), and the income, interest and profits received therefrom, from time to time held by the Trustee in the Funds established under the Indenture.

“Receipts and Revenues” shall mean all rates, receipts, fees, rents and charges established or to be established, levied and collected in connection with, and all other receipts, revenues and income of whatever kind and character (including, without limitation, all accounts, cell tower revenues, any insurance proceeds, condemnation or eminent domain awards, payments under performance bonds, grants and assessments not separately pledged) coming to, received by, collected by or otherwise owed or owing to, the Authority, arising from its use, employment, operation and ownership of the Utility System, or any part thereof, including all of the Authority’s available unrestricted cash and investments on hand.

“Reserve Fund Credit Instrument” shall mean a surety bond, letter of credit or municipal bond insurance policy payable to the Trustee for the benefit of the Bondholders credited to the respective Debt Service Reserve Fund.

“Sewer System” shall mean and include as of any particular time (i) all tangible property, fixed or movable, real or personal, then owned or operated by the Authority and used or useful in the provision of municipal sewer collection and treatment services by the Authority which was so owned or operated and used at the time of the execution of the Indenture, (ii) all Capital Additions constructed or otherwise acquired by the Authority, (iii) all other tangible property, fixed or movable, real or personal, then owned or operated by the Authority and used in the rendering of sewer collection and treatment services by the Authority and (iv) all franchises used or useful to the Authority at such particular time in the rendering of sewer collection and treatment services by the Authority.

“Subordinate Debt” shall mean any and all notes, bonds, loans or other similar certificates or warrants of indebtedness executed and delivered by the Authority which represent an obligation for the repayment of money borrowed or credit extended, which may be payable from the Receipts and Revenues of the Utility System, but which have not obtained a first lien on such Receipts and Revenues in the manner of, or on a parity with, the Bonds, but which are payable on a subordinate basis, following current payment of the Bonds.

“Tax-Exempt”, when used in reference to bonds, notes or other debt instruments, shall mean and refer to the exclusion from gross income for the interest payable in respect of such obligations to the holder thereof, pursuant to Section 103 and related sections of the Code.

“Utility System” shall mean, collectively, the Sewer System and the Water System.

“Water System” shall mean and include as of any particular time (i) all tangible property, fixed or movable, real or personal, then owned or operated by the Authority and used in the water treatment and distribution services by the Authority which was so owned or operated and used at the time of the execution of this Indenture, (ii) all Capital Additions constructed or otherwise acquired by the Authority, (iii) all other tangible property, fixed or movable, real or personal, then owned or operated by the Authority and used in the rendering of water treatment and distribution services by the Authority and (iv) all franchises used or useful to the Authority at such particular time in the rendering of water treatment and distribution services by the Authority.

“2019 Bond Insurance Policy” shall mean the insurance policy issued by the 2019 Bond Insurer guaranteeing the scheduled payment of the principal of, and interest on, the 2019 Bonds when due, as provided therein.

“2019 Bond Insurer” shall mean Municipal Assurance Corp. as issuer of the 2019 Bond Insurance Policy and the 2019 Reserve Policy, or any successor thereto or assignee thereof, as such.

“2019 Reserve Policy” shall mean the municipal bond debt service reserve insurance policy issued by the 2019 Bond Insurer to the credit of the 2019 Debt Service Reserve Fund created for the 2019 Bonds under the Second Supplemental Indenture. For purposes of the Indenture the 2019 Reserve Policy is a Reserve Fund Credit Instrument.

Application of Bond Proceeds

The proceeds of the sale of the Bonds, including interest thereon if any, accrued to their date of delivery, will be paid over to the Trustee and deposited by the Trustee in a clearing account established under the Indenture (the “Clearing Fund”). From the Clearing Fund the Trustee will make the payments, disbursements and deposits as set forth in an Authority settlement certificate; including deposits to the Construction Fund (hereinafter defined) which are to be applied to payment of the acquisition, construction and other capital costs of the Project. Any reserves established in the Clearing Fund will be disbursed from time to time by the Trustee pursuant to further written directions of the Chairman or Vice-Chairman of the Board of the Authority.

Construction Fund

The Indenture establishes a construction fund (the “Construction Fund”) to be held in trust by the Trustee. The portion of the proceeds of the Bonds which are to be applied to (a) capitalized interest and (b) the payment of capital costs of the Project will be held on deposit therein until disbursed pursuant to the terms of the Indenture.

Rate Covenant

The Authority covenants in the Indenture that it has adopted or will adopt, and will charge, maintain and collect throughout its service area in each fiscal year so long as any Parity Bonds remain Outstanding and funds for their payment have not been provided, rates, rents and other charges with respect to the Utility System which will result in the collection of revenues in each fiscal year, together with amounts representing Receipts and Revenues received in prior fiscal years, currently on deposit in the Operating Fund and not required for any other purpose, such as an undesignated fund balance, at the beginning of the applicable fiscal year, that are at least sufficient to provide in such fiscal year the sum of:

- (i) funds to pay the Administrative Expenses of the Authority, plus
- (ii) an amount equal to 110% of the Debt Service Requirements in such fiscal year with respect to its Outstanding Parity Bonds, plus
- (iii) funds sufficient to cure any deficiency in the Debt Service Reserve Fund (including payment of any policy costs due and owing), plus
- (iv) funds sufficient to pay the amount due in such fiscal year on all Subordinate Debt and other payment obligations of the Authority and the Utility System, if any.

Operating Fund

The Authority covenants in the Indenture to maintain an operating fund (the “Operating Fund”) and to deposit to the Operating Fund, immediately upon receipt thereof, all Receipts and Revenues (as defined in the Indenture) from the Utility System received by the Authority. The Operating Fund will be maintained with an Authorized Depository (as defined in the Indenture), which may but need not be the Trustee.

The moneys at any time on deposit in the Operating Fund will be applied by the Authority to the following purposes in the following order of priority:

- (i) on or before the first day of each month, to the payment of Administrative Expenses including amounts budgeted by the Authority with respect to such month;
- (ii) to the deposits set forth in the Indenture for the payment of debt service on the Outstanding Parity Bonds, provided, however, that the Authority may elect, in its discretion, to make monthly deposits of 1/6 of the interest due on the next Interest Payment Date and 1/12 of the principal due on the appropriate Interest Payment Date in order to satisfy the deposit requirements of the Indenture;
- (iii) if necessary, to restore the Debt Service Reserve Fund to an amount equal to the Debt Service Reserve Requirement;
- (iv) to the payment of Subordinate Debt, if any;
- (v) to the cost of constructing or acquiring Capital Additions or making extraordinary repairs or expenditures for extraordinary maintenance or the payment of indebtedness incurred by the Authority for such purposes;

- (vi) to the payment of any liabilities of the Authority arising out of its ownership of the Utility System which are not properly payable out of any other Fund established by the Indenture; and
- (vii) no later than the last business day of each fiscal year, the transfer to the Surplus Fund of all remaining amounts on deposit in the Operating Fund other than an amount equal to 1/4 of the estimated annual Administrative Expenses of the Authority, based upon the budget of current expenses, plus any excess amount that the Authority determines to use to redeem Parity Bonds pursuant to the provisions of the Indenture.

Debt Service Fund

The Indenture creates a special fund known as the “Debt Service Fund” (the “Debt Service Fund”) to be held in trust by the Trustee until applied as therein provided to the payment of the principal of and interest on the Parity Bonds. Subject to the provisions contained in the Indenture, the Authority will (as stated in (ii) above) transfer from the Operating Fund on or before the fourth business day prior to May 15 and November 15 of each year to the Debt Service Fund, moneys sufficient to provide for the payment therefrom of all interest and principal due on the next succeeding May 15 or November 15 on all Outstanding Parity Bonds.

Debt Service Reserve Fund

The Indenture creates a special fund known as the “Debt Service Reserve Fund” (the “Debt Service Reserve Fund”) to be held in trust by the Trustee until applied as therein provided. On the date of issuance of the Bonds, the Authority will deposit in the Debt Service Reserve Fund a surety policy (the “2019 DSR Surety”) issued by Municipal Assurance Corp. with a value of \$1,456,000, as set forth in the Authority’s settlement certificate for the Bonds. The 2019 DSR Surety will constitute a “Reserve Fund Credit Instrument” within the meaning of the Indenture.

The Debt Service Reserve Fund will be available to pay the interest and principal on the Bonds in case there is a deficiency in the Debt Service Fund in any year. The Indenture requires any investments in the Debt Service Reserve Fund to be valued by the Trustee on the last business day of each fiscal year of the Authority (which fiscal year will be deemed to end on December 31 of each year, unless and until the Authority notifies the Trustee in writing of a change in the Authority’s fiscal year) and at the time of any withdrawal from the Debt Service Reserve Fund, at the lesser of the face amount or the market value thereof. Under the Indenture, if the amount on deposit in the Debt Service Reserve Fund at any such time is less than the Debt Service Reserve Requirement, the Trustee is required to notify the Authority of the deficiency, and the Authority is required to make up such deficiency by making payment sufficient to cure such deficiency, immediately in the case of a valuation deficiency and in twelve (12) equal monthly installments in the case of a withdrawal, directly to the Trustee for deposit in the Debt Service Reserve Fund; provided, however, that if each Current Bond Insurer approves a longer schedule of periodic payment and all Outstanding Parity Bonds are then insured by a Current Bond Insurer not in default under the applicable policy, the amount of such deficiency may be paid to the Trustee in accordance with such schedule. If the Trustee has determined that the funds in the Debt Service Reserve Fund are in excess of the Debt Service Reserve Requirement, then it will transfer, without direction from the Authority, such excess to the Debt Service Fund.

Also on deposit in the Debt Service Reserve Fund is a surety policy issued by BAM in respect of the 2017 Bonds (the “2017 DSR Surety”) and a surety policy issued by MAC in respect of the 2018 Bonds (the “2018 DSR Surety”). Any amounts drawn down upon the 2017 DSR Surety will be available only to pay debt service on the 2017 Bonds, any amounts drawn down upon the 2018 DSR Surety will be available only to pay debt service on the 2018 Bonds, and any amounts drawn down upon the 2019 DSR Surety will be available only to pay debt service on the Bonds.

Surplus Fund

The Indenture creates a special fund known as the “Surplus Fund” (the “Surplus Fund”) to be held by the Trustee until applied as therein provided. To the extent not paid out of any other Fund, the moneys at any time on deposit in the Surplus Fund may be applied by the Trustee or paid to the Authority (as applicable), so long as no Event of Default has occurred and is outstanding, to any one or more of the following purposes as the Authority may direct in writing:

- (i) the cost of constructing or acquiring Capital Additions or making extraordinary repairs or expenditures for extraordinary maintenance or the payment of indebtedness incurred by the Authority for such purposes;
- (ii) the payment of any liabilities of the Authority arising out of its ownership of the Utility System (including any liabilities arising out of collective bargaining agreements or employment agreements) which are not properly payable out of any other Fund established by the Indenture including, without limitation, Subordinate Debt;
- (iii) the transfer to the Operating Fund to satisfy the rate covenant requirements; or
- (iv) the redemption or purchase of Parity Bonds.

The Trustee is authorized under the Indenture, without any direction from the Authority, to transfer moneys from the Surplus Fund to the Debt Service Fund to the extent that the moneys in the Debt Service Fund may at any time be insufficient to pay the principal of and interest on the Parity Bonds as the same become due.

Rebate Fund

The Indenture creates a special fund known as the “Rebate Fund” for the deposit and management of excess investment proceeds which may be subject to arbitrage rebate pursuant to applicable provisions of the Internal Revenue Code.

Issuance of Additional Bonds

The Authority may issue from time to time, and the Trustee will authenticate, Parity Bonds in addition to the 2017 Bonds (“Additional Bonds”) for the purpose of providing (a) all or part of the funds necessary to refund Parity Bonds, including accrued and unpaid interest and redemption premium, if any, and all costs and expenses incidental to redemption and (b) all or part of the funds required to construct or acquire Capital Additions (as defined in the Indenture), in each case including capitalized interest and financing costs. The 2018 Bonds and the Bonds are Additional Bonds.

The issuance of Additional Bonds is subject to various and certain tests and requirements, as set forth in the Indenture, to which reference is hereby made. In particular, in the case of Additional Bonds to be issued to construct or acquire Capital Additions, such Additional Bonds may only be issued upon, among other things, the production of a certificate of the Consulting Engineer (as defined in the Indenture) stating as follows:

(A) his estimate as to the cost of constructing, acquiring or completing Capital Additions, as the case may be, (B) that the Capital Additions are necessary or advisable to preserve, develop or improve the Utility System, (C) his estimate as to the amount and sources of the moneys to be deposited with the Trustee for credit to the Construction Fund or a special construction fund established under the Indenture, including, if any, any tapping fees, grants, connection fees, assessments or capital contributions to be received, (D) his estimate of the amount, if any, of said cost that is to be assessed against the properties benefited, improved or accommodated by reason of the construction of such Capital Additions, (E) his estimate as to the annual net revenues, if any, which will be derived by the Authority from the Capital Additions, which estimate is to be based upon a period of twenty-four consecutive calendar months immediately following the date of completion of such Capital Additions.

Prior to and as a condition precedent to the issuance of Additional Bonds, such as the Bonds, to fund Capital additions, the Authority must also deliver a certificate of an Authorized Officer of the Authority (as such term is defined in the Indenture) stating (A) the forecast as to the Net Revenues (as such term is defined in the Indenture) of the Utility System (including the Capital Additions) for the 12 month period following the completion of the Capital Additions, (B) the percentage derived by dividing the amount shown pursuant to clause (A) by the Maximum Annual Debt Service Requirements on all Parity Bonds which will be Outstanding (as such term is defined in the Indenture) immediately after the issuance of such Additional Bonds, which percentage may not be less than 110%, and (C) that the Authority’s Net Revenues as determined under clause (A) as forecasted for the 12 months following the issuance of the Additional Bonds equals at least one times the sum of debt service requirements for the next 12 consecutive months on (i) all Parity Bonds, (including such Additional Bonds); and (ii) all Subordinate Debt obligations of the Authority.

Scope of the Indenture – Separate Financing

Nothing in the Indenture limits the power of the Authority to issue other bonds under other indentures or resolutions for the purpose of financing other projects (which may be secured by excess moneys transferred to the Authority pursuant to the terms of the Indenture) or from pledging the revenues of such other projects for the payment of the bonds issued to finance such other projects so long as such projects do not fall within the definition of Utility System and are not secured by Receipts and Revenues or any amounts held by the Trustee pursuant to the Indenture other than liens on Receipts and Revenues which secure Subordinate Debt. The Indenture provides for the Administrative Expenses of the Authority to be allocated equitably among the various projects of the Authority which are so financed.

Particular Covenants

Under the Indenture, the Authority makes a number of covenants regarding the operation of the Utility System and its financial affairs, for the benefit and further security of the holders of the Bonds, including covenants to avoid the creation or imposition of liens on Pledged Revenues, to engage an accountant to perform an annual audit, to engage the Consulting Engineer to provide advice and reports on the operation of the Utility System, to maintain public liability and property damage insurance, to maintain and repair the Utility System, to comply with federal arbitrage laws related to investment and use of the proceeds of the Bonds and to undertake its continuing disclosure obligations under Federal securities laws.

Defaults and Remedies

The Indenture sets forth remedies available to the Trustee and the Bondholders in the event of a default under the Indenture. Among other things, Events of Default are defined in the Indenture to be the failure to pay the principal of and interest on the Bonds as and when the same become due.

Under the Indenture, upon the happening of an Event of Default as therein defined, the Trustee may enforce, and upon the written request of the holders of not less than 25% of principal amount of the Outstanding Parity Bonds then outstanding or any Current Bond Insurer not in default under its policy, accompanied by indemnity as provided in the Indenture must enforce, for the benefit of all Parity Bondholders, all Parity Bondholders’ rights provided under the Indenture and the Act, including the right of entry, of bringing suit, action or proceeding at law or in equity, and of having a receiver appointed. For a more precise statement of the Events of Default as defined in the Indenture and of the rights and remedies of the Trustee and Bondholders provided therein upon the happening of such an Event of Default, reference is made to the Indenture.

No Personal Liability

No recourse exists or will exist for the payment of the principal of or the interest on any Bond, or for any claim based thereon or on the Indenture, against any member of the Board of the Authority, or any officer or agent or employee of the Authority, past, present or future or of any successor body, as such, either directly or through the Authority or any such successor body, under any constitutional provision, statute or rule of law, or by the enforcement of any assessment or penalty or otherwise.

LIMITED OBLIGATIONS

The Bonds are limited obligations of the Authority payable solely from the Pledged Revenues pledged under the Indenture. Neither the credit nor the taxing power of the United States of America, the Commonwealth of Pennsylvania or any political subdivision of the Commonwealth of Pennsylvania is pledged for the payment of the Bonds. The Authority has no taxing power.

CERTAIN BONDHOLDERS' RISKS AND CONSIDERATIONS

Investment in the Bonds may involve certain risks and each investor should carefully consider the risks involved to determine whether to purchase any of the Bonds. Prospective investors should carefully examine this Official Statement and their individual financial condition (including the diversification of investment portfolio) in order to make a judgment as to whether the Bonds are an appropriate investment.

The Authority has identified and summarized below certain "bondholders' risks" that could adversely affect the finances of the Authority, the operation of the Utility System and/or the funds available for payment of the Bonds, which should be considered by prospective investors. The following discussion is not intended to be exhaustive, but includes certain major factors, which should be considered along with other factors set forth elsewhere in this Official Statement, including the Appendices hereto.

Geographic Concentration

The number of customers using the Utility System may be adversely affected by regional and local economic conditions, competitive conditions, changes in population and general economic conditions. There can be no assurance that the Utility System will be able to maintain the current number of existing users, if there are changes in the resident and/or commercial population of the service area.

Governmental Regulation

The Federal and local government significantly regulates providers of water and sewer systems. Future regulations and conditions affecting the acquisition, development ownership and operation of the Utility System could increase the operating expenses of the Utility System or could otherwise have a material adverse effect on the financial condition of the Authority.

Bankruptcy

Although there is currently no statutory authority under Pennsylvania law for the Authority to file for bankruptcy under Chapter 9, there can be no assurance that the General Assembly will not in the future provide the Authority, or all similarly situated authorities in Pennsylvania, with the power to file for bankruptcy under Chapter 9.

Liquidity

The Bonds are subject to liquidity risks such as acceleration (in the event of default), surety bond provider downgrades, etc. These risks may result in a lack of access to capital.

BOND INSURANCE

BOND INSURANCE POLICY

Concurrently with the issuance of the Bonds, Municipal Assurance Corp. ("MAC") will issue its Municipal Bond Insurance Policy for the Bonds (the "Policy"). The Policy guarantees the scheduled payment of principal of and interest on the Bonds when due as set forth in the form of the Policy included as an exhibit to this Official Statement.

The Policy is not covered by any insurance security or guaranty fund established under New York or Connecticut insurance law.

MUNICIPAL ASSURANCE CORP.

MAC is a New York domiciled financial guaranty insurance company and an indirect subsidiary of Assured Guaranty Ltd. ("AGL"), a Bermuda-based holding company whose shares are publicly traded and are listed on the New York Stock Exchange under the symbol "AGO". AGL, through its operating subsidiaries, provides credit enhancement products to the U.S. and global public finance, infrastructure and structured finance markets. Neither AGL nor any of the shareholders or affiliates of AGL, other than MAC, is obligated to pay any debts of MAC or any claims under any insurance policy issued by MAC.

MAC is wholly owned by Municipal Assurance Holdings Inc., which, in turn, is owned 61% by Assured Guaranty Municipal Corp. and 39% by Assured Guaranty Corp.

MAC's financial strength is rated "AA" (stable outlook) by S&P Global Ratings, a business unit of Standard & Poor's Financial Services LLC ("S&P") and "AA+" (stable outlook) by Kroll Bond Rating Agency, Inc. ("KBRA"). Each rating of MAC should be evaluated independently. An explanation of the significance of the above ratings may be obtained from the applicable rating agency. The above ratings are not recommendations to buy, sell or hold any security, and such ratings are subject to revision or withdrawal at any time by the rating agencies, including withdrawal initiated at the request of MAC in its sole discretion. In addition, the rating agencies may at any time change MAC's long-term rating outlooks or place such ratings on a watch list for possible downgrade in the near term. Any downward revision or withdrawal of any of the above ratings, the assignment of a negative outlook to such ratings or the placement of such ratings on a negative watch list may have an adverse effect on the market price of any security guaranteed by MAC. MAC only guarantees scheduled principal and scheduled interest payments payable by the issuer of bonds insured by MAC on the date(s) when such amounts were initially scheduled to become due and payable (subject to and in accordance with the terms of the relevant insurance policy), and does not guarantee the market price or liquidity of the securities it insures, nor does it guarantee that the ratings on such securities will not be revised or withdrawn.

Current Financial Strength Ratings

On July 12, 2018, KBRA announced it had affirmed MAC's financial strength rating of "AA+" (stable outlook). MAC can give no assurance as to any further ratings action that KBRA may take.

On June 26, 2018, S&P announced it had affirmed MAC's financial strength rating of "AA" (stable outlook). MAC can give no assurance as to any further ratings action that S&P may take.

For more information regarding MAC's financial strength ratings and the risks relating thereto, see AGL's Annual Report on Form 10-K for the fiscal year ended December 31, 2017.

Capitalization of MAC

As of September 30, 2018, MAC's policyholders' surplus and contingency reserve were approximately \$509 million and its unearned premium reserve was approximately \$207 million, in each case, determined in accordance with statutory accounting principles.

Incorporation of Certain Documents by Reference

Portions of the following documents filed by AGL with the Securities and Exchange Commission (the "SEC") that relate to MAC are incorporated by reference into this Official Statement and shall be deemed to be a part hereof:

- (i) the Annual Report on Form 10-K for the fiscal year ended December 31, 2017 (filed by AGL with the SEC on February 23, 2018);
- (ii) the Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2018 (filed by AGL with the SEC on May 4, 2018);
- (iii) the Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2018 (filed by AGL with the SEC on August 2, 2018); and
- (iv) the Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2018 (filed by AGL with the SEC on November 9, 2018).

All financial statements of MAC and all other information relating to MAC included in, or as exhibits to, documents filed by AGL with the SEC pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, excluding Current Reports or portions thereof "furnished" under Item 2.02 or Item 7.01 of Form 8-K, after the filing of the last document referred to above and before the termination of the offering of the Bonds shall be deemed incorporated by reference into this Official Statement and to be a part hereof from the respective dates of filing such documents. Copies of materials incorporated by reference are available over the internet at the SEC's website at <http://www.sec.gov>, at AGL's website at <http://www.assuredguaranty.com>, or will be provided upon request to Municipal Assurance Corp.: 1633 Broadway, New York, New York 10019, Attention: Communications Department (telephone (212) 974-0100). Except for the information referred to above, no information available on or through AGL's website shall be deemed to be part of or incorporated in this Official Statement.

Any information regarding MAC included herein under the caption "BOND INSURANCE – Municipal Assurance Corp." or included in a document incorporated by reference herein (collectively, the "MAC Information") shall be modified or superseded to the extent that any subsequently included MAC Information (either directly or through incorporation by reference) modifies or supersedes such previously included MAC Information. Any MAC Information so modified or superseded shall not constitute a part of this Official Statement, except as so modified or superseded.

Miscellaneous Matters

MAC makes no representation regarding the Bonds or the advisability of investing in the Bonds. In addition, MAC has not independently verified, makes no representation regarding, and does not accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein, or omitted herefrom, other than with respect to the accuracy of the information regarding MAC supplied by MAC and presented under the heading "BOND INSURANCE".

BOND INSURANCE RISK FACTORS

In the event of default of the payment of principal or interest with respect to the Bonds when all or some becomes due, any owner of the Bonds will have a claim under the applicable Bond Insurance Policy (the “Policy”) for such payments. However, in the event of any acceleration of the due date of such principal by reason of mandatory or optional redemption or acceleration resulting from default or otherwise, other than any advancement of maturity pursuant to a mandatory sinking fund payment, the payments are to be made in such amounts and at such times as such payments would have been due had there not been any such acceleration. The Policy does not insure against redemption premium, if any. The payment of principal and interest in connection with mandatory or optional prepayment of the Bonds by the issuer which is recovered by the issuer from the bond owner as a voidable preference under applicable bankruptcy law is covered by the insurance policy, however, such payments will be made by the Insurer at such time and in such amounts as would have been due absent such prepayment by the Authority unless the Bond Insurer chooses to pay such amounts at an earlier date.

Under most circumstances, default of payment of principal and interest does not obligate acceleration of the obligations of the Bond Insurer without appropriate consent. The Bond Insurer may direct and must consent to any remedies and the Bond Insurer’s consent may be required in connection with amendments to any applicable bond documents.

In the event the Bond Insurer is unable to make payment of principal and interest as such payments become due under the Policy, the Bonds are payable solely from the money received pursuant to the applicable bond documents. In the event the Bond Insurer becomes obligated to make payments with respect to the Bonds, no assurance is given that such event will not adversely affect the market price of the Bonds or the marketability (liquidity) for the Bonds.

The long-term ratings on the Bonds are dependent in part on the financial strength of the Bond Insurer and its claims paying ability. The Bond Insurer’s financial strength and claims paying ability are predicated upon a number of factors which could change over time. No assurance is given that the long-term ratings of the Bond Insurer and of the ratings on the Bonds insured by the Bond Insurer will not be subject to downgrade and such event could adversely affect the market price of the Bonds or the marketability (liquidity) for the Bonds. See description of “Ratings” herein.

The obligations of the Bond Insurer are contractual obligations and in an event of default by the Bond Insurer, the remedies available may be limited by applicable bankruptcy law or state law related to insolvency of insurance companies.

Neither the Authority or Underwriter have made independent investigation into the claims paying ability of the Bond Insurer and no assurance or representation regarding the financial strength or projected financial strength of the Bond Insurer is given. Thus, when making an investment decision, potential investors should carefully consider the ability of the Authority to pay principal and interest on the Bonds and the claims paying ability of the Bond Insurer, particularly over the life of the investment. See “Bond Insurance” herein for further information provided by the Bond Insurer and the Policy, which includes further instructions for obtaining current financial information concerning the Bond Insurer.

CONTINUING DISCLOSURE UNDERTAKING

In accordance with the requirements of Rule 15c2-12 (the “Rule”) and promulgated by the Securities and Exchange Commission (the “SEC”), the Authority will agree to file with the Municipal Securities Rulemaking Board (the “MSRB”), in such electronic format as is prescribed by the MSRB, either directly or through a designated agent, such information as set forth in the form of Continuing Disclosure Certificate (the “Agreement”) as attached hereto as Appendix D.

Under the terms of the Agreement, the Authority will undertake to file with the MSRB financial and other information concerning the Authority, all as set forth in Appendix D. The Authority’s obligations with respect to continuing disclosure, as it relates to the Bonds, will terminate upon the prior redemption or payment in full of all of the Bonds.

The MSRB has been designated by the SEC to be the central and sole repository for continuing disclosure information filed by issuers of municipal securities since July 1, 2009. Information and notices filed by municipal issuers (and other “obligated persons” with respect to municipal securities issues) are made available through the MSRB’s Electronic Municipal Market Access (EMMA) System, which may be accessed on the internet at <http://www.emma.msrb.org>.

The Authority may modify from time to time the specific types of information provided or the format of the presentation of such information, to the extent necessary as a result of a change in legal requirements or change in the nature of the Authority; provided that any such modification will be done in a manner consistent with the Rule and will not, in the opinion of the Authority (which may rely on an opinion of counsel) substantially impair the interest of the holders of the Bonds. The Authority acknowledges that its undertaking pursuant to the Rule described under this heading is intended to be for the benefit for the holders of the Bonds. Breach of the undertaking will not be a default under the Indenture or the Bonds.

The Authority reserves the right to terminate its obligation to provide annual financial information and notices of material events, as set forth above, if and when such Authority no longer remains an “obligated person” with respect to the Bonds within the meaning of the Rule. The Authority acknowledges that its undertaking pursuant to the Rule described under this heading is intended to be for the benefit of the holders of the Bonds and is enforceable by the holders of such Bonds; provided that the Bondholders’ right to enforce the provisions of the said undertaking is limited to a right to obtain specific enforcement of the Authority’s obligations thereunder, and any failure by the Authority to comply with the provisions of such undertaking will not be an event of default with respect to the Bonds or under the Indenture.

Under the Authority’s prior and existing continuing disclosure agreements under the Rule, the Authority undertook to provide EMMA with its audited financial statements, together with specified financial and operational information and notices of material events relating to the Authority and its outstanding bonds, within specific timeframes. Within the past five years, the Authority has missed the

deadlines for filing certain annual financial information and operating data in a timely fashion as required under the aforementioned agreements, including its audited financial statements for fiscal years ending December 31, 2013, 2014 and 2015, its budget reports for fiscal years ending December 31, 2014, 2015 and 2016; and its Consulting Engineer's Annual Report for 2013, Consulting Engineer's Annual Report for the 2014 Operating Year and Consulting Engineer's Annual Report for the 2015 Operating Year (and through October 31, 2016). This information has since been filed. The Authority has filed a separate notice with EMMA setting forth the Authority's failure to timely file such audited financial statements and operational and financial information. This notice was not timely filed.

Further, the Authority failed to file with EMMA in a timely fashion notice of a rating change by S&P Global Ratings, a business unit of Standard & Poor's Financial Services LLC ("S&P"), specifically S&P's April 2, 2015 bond insurer rating upgrade of Radian Asset Assurance Inc. ("Radian") from B+ to AA after Radian's acquisition by Assured Guaranty Corp. on April 1, 2015. This notice was not timely filed.

The Authority has procedures in place to ensure ongoing timely filings of its continuing disclosure requirements, including the Authority's retention of Digital Assurance Certification, LLC ("DAC") as its dissemination agent.

TAX MATTERS

State Tax Matters

In the opinion of Bond Counsel, the Bonds, and the interest income therefrom, are free from taxation for purposes of personal income, corporate net income and personal property taxes within the Commonwealth of Pennsylvania.

The residence of a holder of a Bond in a state other than Pennsylvania, or being subject to tax in a state other than Pennsylvania, may result in income or other tax liabilities being imposed by such other state or its political subdivisions based on the interest or other income from the Bonds.

Federal Income Tax Matters

In the opinion of Bond Counsel, based upon an analysis of existing laws, regulations, rulings and court decisions, interest on the Bonds (including, in the case of Bonds sold at an original issue discount, the difference between the initial offering price and par) is excluded from gross income for Federal income tax purposes. Bond Counsel is also of the opinion that interest on the Bonds is not a specific item of tax preference under Section 57 of the Internal Revenue Code of 1986, as amended (the "Code") for purposes of Federal individual or corporate alternative minimum taxes.

Original Issue Discount

The Bonds that mature on November 15, 2033, 2038, 2043 and 2047 (collectively, the "Tax-Exempt Discount Bonds") are being offered and sold to the public at an original issue discount ("OID") from the amounts payable at their maturity. OID is the excess of the stated redemption price of a bond at maturity (par) over the price to the public at which a substantial amount of bonds of the same maturity are sold pursuant to the initial offering. Under the Code, OID on each Tax-Exempt Discount Bond will accrue over its term and the amount of such accrual will be based on the yield to maturity, compounded semi-annually. The amount of OID that accrues during each semi-annual period will do so ratably within that period on a daily basis. With respect to an initial purchaser of a Tax-Exempt Discount Bond at its initial offering price, the portion of OID that accrues during the period that such purchaser owns such Bond is added to the purchaser's tax basis for purposes of determining gain or loss at the maturity, redemption, sale, or other disposition of that Tax-Exempt Discount Bond and thus, in practical effect, is treated as interest, which is excludable from gross income for Federal income tax purposes.

Holders of Tax-Exempt Discount Bonds should consult their own tax advisors as to the effect of OID with respect to their Federal tax liability.

Original Issue Premium

The Bonds that mature on November 15, 2024 and 2025 (collectively, the "Tax-Exempt Premium Bonds") are being sold at an original issue premium ("OIP"). An amount equal to the excess of the issue price of a Tax-Exempt Premium Bond over its stated redemption price at maturity constitutes OIP on such Tax-Exempt Premium Bond. An initial purchaser of a Tax-Exempt Premium Bond must amortize any OIP over such Tax-Exempt Premium Bond's term using constant yield principles, based on the purchaser's yield to maturity (or, in the case of Tax-Exempt Premium Bonds callable prior to their maturity, by amortizing the OIP to the call date, based on the purchaser's yield to the call date and giving effect to any call premium). As OIP is amortized, the amount of the amortization offsets a corresponding amount of interest for the period and the purchaser's basis in such Tax-Exempt Premium Bond is reduced by a corresponding amount resulting in an increase in the gain (or decrease in the loss) to be recognized for Federal income tax purposes upon a sale or disposition of such Tax-Exempt Premium Bond prior to its maturity. Even though the purchaser's basis may be reduced, no Federal income tax deduction is allowed. Purchasers of the Tax-Exempt Premium Bonds should consult with their tax advisors with respect to the determination and treatment of OIP for Federal income tax purposes and with respect to the state and local tax consequences of owning a Tax-Exempt Premium Bond.

Interest Expense Deductions for Financial Institutions

Under Section 265 of the Code, financial institutions are denied any deduction for interest expenses that are allocable, by a formula, to tax-exempt obligations acquired after August 7, 1986. An exception, which permits a deduction for 80% of such interest expenses, is

provided in respect of certain tax-exempt obligations issued by a qualified issuer that specifically designates such obligations as “qualified tax-exempt obligations” under Section 265 of the Code.

The Authority is a qualified issuer and the Authority has designated the Bonds as “qualified tax-exempt obligations” for the purposes and effect contemplated by Section 265 of the Code.

Financial institutions intending to purchase Bonds should consult their own tax advisors to determine the effect of the interest expense deduction on their Federal tax liability.

Continuing Compliance

The Code imposes various terms, restrictions, conditions and requirements relating to the exclusion from gross income for Federal income tax purposes of interest on obligations such as the Bonds. The Authority has covenanted to comply with all such requirements, including non-arbitrage requirements under Section 148 of the Code, that are necessary to ensure that interest on the Bonds will not be includable in gross income for Federal income tax purposes. Failure to comply with these covenants could result in interest on the Bonds being includable in gross income for Federal income tax purposes and such inclusion could be required retroactively to the date of issuance of the Bonds. The opinion of Bond Counsel assumes compliance with the aforesaid covenants. Moreover, Bond Counsel has not undertaken to determine (or to inform any person) whether any actions taken (or not taken) or events occurring (or not occurring) after the date of issuance of the Bonds may adversely affect the tax-exempt status of the interest on the Bonds.

Certain requirements and procedures contained or referred to in the Resolution and other relevant documents may be changed and certain actions (including, without limitation, defeasance of the Bonds) may be taken or omitted under the circumstances and subject to the terms and conditions set forth in such documents. Such changes or actions could constitute an exchange or other tax event with respect to the Bonds, which could result in gain or loss to the holder of a Bond, and a consequent tax liability.

Pursuant to its continuing disclosure obligations made pursuant to the Rule (see “Continuing Disclosure Undertaking” herein), the Authority may be required to provide notice of such changes or actions, as material events under said Rule. However, holders of the Bonds should consult their own tax advisors as to the effect of such changes or actions with respect to their Federal tax liability.

Collateral Tax Liabilities

Although Bond Counsel has rendered an opinion that interest on the Bonds is excludable from gross income for Federal and Pennsylvania income tax purposes, the ownership or disposition of, or the accrual or receipt of interest on, the Bonds may result in other collateral effects on a Bondholder’s Federal, state or local tax liabilities. The nature and extent of these other tax consequences may depend upon the particular tax status of the Bondholder or the Bondholder’s other items of income or deduction. Bond Counsel expresses no opinions regarding any tax consequences other than what is set forth in its opinion; each Bondholder or potential Bondholder is urged to consult with its own tax advisors with respect to the effects of purchasing, holding or disposing of the Bonds on its tax liabilities.

For example, corporations are required to include interest on the Bonds in determining “adjusted current earnings” under Section 56(c) of the Code, which may increase the amount of any alternative minimum tax owed. Other tax consequences for certain taxpayers include, without limitation, increasing the Federal tax liability of certain foreign corporations subject to the branch profits tax imposed by Section 884 of the Code, increasing the Federal tax liability of certain insurance companies under Section 832 of the Code, increasing the Federal tax liability of certain S corporations subject to Sections 1362 and 1375 of the Code, increasing the Federal tax liability of certain individual recipients of social security or railroad retirement benefits under Section 86 of the Code, limiting the use of the Earned Income Credit under Section 32 of the Code, limiting the use of the refundable credit for coverage under a qualified health plan under Section 36B of the Code, and denying an interest expense deduction to certain financial institutions under Section 265 of the Code (unless, as is the case for the Bonds, the obligations held have been effectively designated by their issuer as “qualified tax-exempt obligations”).

Change in Law; Adverse Determinations

From time to time, certain legislative proposals may be introduced, or be pending, in the Congress of the United States or the various state legislatures, including some that carry retroactive effective dates that, if enacted, could alter or amend the Federal and state tax matters described above or affect the market value of the Bonds. No prediction can be made whether or in what form any such proposal or proposals might be enacted into law or whether, if enacted, the same would apply to bonds issued prior to enactment. Prospective purchasers of the Bonds should consult their own tax advisors regarding any pending or proposed Federal tax legislation. Bond Counsel expresses no opinion regarding any pending or proposed Federal tax legislation.

The Internal Revenue Service (the “Service”) regularly audits tax-exempt obligations to determine whether, in the view of the Service, interest on such tax-exempt obligations is includible in the gross income of the owners thereof for Federal income tax purposes. No prediction can be made whether or not the Service will commence an audit of the Bonds. If an audit is commenced, under current procedures, the Service may treat the Authority as a taxpayer and the Bondholders may have no right to participate in such procedure. The commencement of an audit could adversely affect the market value and liquidity of the Bonds until such time as the audit is concluded, regardless of the ultimate outcome.

Payments of interest on, and proceeds of the sale, redemption or maturity of, tax-exempt obligations, such as the Bonds, are in certain cases required to be reported to the Service. Additionally, backup withholding may apply to any such payments to any Bondholder who fails to provide an accurate Form W-9 Request for Taxpayer Identification Number and Certification, or to any Bondholder who is notified by the Service of a failure to report any interest or dividends required to be shown on Federal income tax returns.

THE FOREGOING IS NOT INTENDED AS AN EXHAUSTIVE LIST OF THE PROVISIONS OF FEDERAL, STATE AND LOCAL TAX LAWS WHICH MAY HAVE AN EFFECT ON INDIVIDUALS AND CORPORATIONS HOLDING THE BONDS OR RECEIVING INTEREST THEREON, DIRECTLY OR INDIRECTLY. PROSPECTIVE PURCHASERS SHOULD CONSULT WITH THEIR OWN TAX ADVISORS REGARDING THE EFFECT ON THEIR FEDERAL, STATE OR LOCAL TAX LIABILITY AND GENERAL FINANCIAL AFFAIRS OF HOLDING THE BONDS OR RECEIVING INTEREST THEREON.

LEGAL MATTERS

Legal Investments

In the opinion of Bond Counsel, the Bonds are authorized investments for fiduciaries and personal representatives under the Pennsylvania Probate, Estates and Fiduciaries Code of the Commonwealth of Pennsylvania.

Negotiability of the Bonds

Under the Act, the Bonds have all the qualities of negotiable instruments under the Uniform Commercial Code of the Commonwealth of Pennsylvania relating to negotiable instruments.

Regarding the Obligation of the Bonds

Neither the general credit nor the taxing power of the Commonwealth of Pennsylvania, or of any political subdivision thereof, is pledged for payment of the Bonds, nor will the Bonds be or be deemed to be an obligation of the Commonwealth of Pennsylvania or any political subdivision thereof.

The Authority has no taxing power. Neither the credit nor the taxing power of the United States of America, the Commonwealth of Pennsylvania, or any political subdivision thereof, is pledged for the payment of the Bonds; nor shall any of the Bonds be deemed to be obligations of the United States of America, the Commonwealth of Pennsylvania or any political subdivision thereof.

Absence of Material Litigation

There is no litigation of any nature pending or threatened against the Authority at the date of this Official Statement which, if decided adversely to the Authority, would have a material adverse effect on the financial condition of the Authority, or to restrain or enjoin the issuance, sale, execution or delivery of the Bonds, or in any way contesting or affecting the validity of the Bonds or any proceedings of the Authority taken with respect to the issuance or sale thereof, or the pledge or application of any moneys or the security provided for the payment of the Bonds, or the existence or powers of the Authority.

Legality

All legal matters incident to the authorization, issuance and sale of the Bonds will be approved by Law Offices of Wayne D. Gerhold, Pittsburgh, Pennsylvania, Bond Counsel. Certain additional matters, as requested by Bond Counsel, will be passed upon for the Authority by its Solicitor, Myron Sainovich, Esquire, Beaver, Pennsylvania. Certain legal matters will be passed upon for the Underwriter by its Limited Scope Underwriter's Counsel, McNees Wallace & Nurick LLC, Lancaster, Pennsylvania.

RATINGS

S&P Global Ratings, a business unit of Standard & Poor's Financial Services LLC ("S&P") has assigned its municipal bond rating of "AA" (stable outlook) to the Bonds with the understanding that upon delivery of the Bonds, a municipal bond insurance policy guaranteeing the payment when due of principal of and interest on the Bonds will be issued by the Bond Insurer (Municipal Assurance Corp.). S&P has also assigned an underlying rating of "A" (stable outlook) to the Bonds. Any downward revision or withdrawal of either of the above ratings would likely have an adverse effect on the market price of the Bonds.

The above ratings are not recommendations to buy, sell or hold the Bonds, and such ratings may be subject to revision or withdrawal at any time by the rating agencies. Each of the rating agencies has recently issued press releases or reports stating that they are examining the potential effects of downturns in the market for structured finance (SF) instruments, including collateralized debt obligations ("CDOs"), on the claims-paying ability of the bond insurance companies, including the Bond Insurer, which could adversely affect the insured rating of the Bonds.

There can be no assurance that the views expressed in such press releases and reports represent the current views of the rating agencies or that those views will not change in the future. See **"BOND INSURANCE RISK FACTORS"** herein.

FINANCIAL ADVISOR

The Authority has retained CIM Investment Management, Inc., of Pittsburgh, Pennsylvania, as financial advisor (the "Financial Advisor") in connection with the authorization and issuance of the Bonds. The Financial Advisor is not obligated to perform an independent verification of, or to assume responsibility for the accuracy, completeness or fairness of, the information contained in this Official Statement, and has neither performed any such verification nor assumed any such responsibility. CIM Investment Management, Inc. is an independent advisory firm and is not engaged in the business of underwriting, trading or distributing municipal securities or other public securities.

UNDERWRITING

The underwriter of the Bonds is RBC Capital Markets, LLC (the "Underwriter"). The Underwriter has agreed to purchase the Bonds from the Authority, subject to certain conditions precedent, at an aggregate price of \$9,822,653.20 (representing the principal amount of \$10,000,000, less an underwriter's discount of \$68,500 and less a net original issue discount of \$108,846.80). The Underwriter may offer

and sell the Bonds to certain dealers (including dealers depositing Bonds into investment trusts) and others at prices lower than the initial public offering prices stated on the inside cover page hereof. After the Bonds are released, the public offering prices and other selling terms may be changed from time to time by the Underwriter without notice.

The Underwriter has provided the following information for inclusion in this Preliminary Official Statement:

The Underwriter and its affiliates are full service financial institutions engaged in various activities, that may include securities trading, commercial and investment banking, municipal advisory, brokerage and asset management. In the ordinary course of business, the Underwriter and their respective affiliates may actively trade debt and if applicable equity securities (or related derivative securities) and provide financial instruments (which may include bank loans, credit support or interest rate swaps). The Underwriter and its affiliates may engage in transactions for their own accounts involving the Bonds or other offering of the Authority. The Underwriter and its affiliates may also communicate independent investment recommendations, market color or trading ideas and publish independent research views in respect of the Bonds or other offerings of the Authority. The Underwriter does not make a market in credit default swaps with respect to municipal securities at this time but may do so in the future.

OTHER MATTERS

The execution and delivery of this Official Statement has been duly authorized by the Authority. Certain information contained in this Official Statement has been obtained from sources other than the Authority. All of the summaries and references to the provisions of the Bonds contained in this Official Statement, and all other summaries and references to the Act, the Indenture and other materials not purporting to quote the same in full, are only brief outlines of certain provisions thereof, and do not constitute complete statements.

This Official Statement is not to be construed as a contract or agreement between the Authority and the Underwriter or the purchasers or holders of any of the Bonds. Any statements made in this Official Statement involving matters of opinion, whether or not expressly so stated, are intended merely as opinions and not as representations of fact. The information and expressions of opinion herein are subject to change without notice and neither the delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the Authority since the date hereof. The information contained in this Official Statement that has been obtained from sources other than the Authority is not guaranteed as to accuracy or completeness.

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
(Beaver County, Pennsylvania)

By: /s/ Matthew J. Mottes

Matthew J. Mottes, Chairman

APPENDIX A
THE AUTHORITY, DESCRIPTION AND SUMMARIES OF
FINANCIAL FACTORS OF THE WATER AND SEWER SYSTEM

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THE AUTHORITY

Introduction

This Appendix A is a summary only and is not intended to be a complete report. For more complete information, the individual financial statements and the budget report of the Authority should be reviewed at the Authority building.

The Authority is a body corporate and politic created under the Municipality Authorities Act of May 2, 1945, P.L. 382, on September 4, 1953, and exists pursuant to the provisions of the Act. The Authority was incorporated pursuant to an ordinance of the Borough of Aliquippa, Beaver County, Pennsylvania. Pursuant to an Ordinance dated February 11, 1986, the Borough of Aliquippa was changed from a borough to a third class city, known now as the City of Aliquippa (the "City"). The life of the Authority was extended to June 16, 2026 pursuant to a City Ordinance enacted on June 16, 1986. The life of the Authority will be further extended to September 12, 2068, pursuant to a resolution of the City Council of the City adopted on August 29, 2018. Authorities existing under the Act may have lives of up to fifty years which may be extended by amendments to their articles of incorporation. The Authority is governed by a Board of five members appointed by the City for staggered five-year terms.

The Authority owns and operates the Utility System, providing water and sewer service within the City and to portions of adjacent Hopewell Township, Raccoon Township and nearby Potter Township, all located in Beaver County.

The Authority is empowered to exercise any and all powers conferred by the Act necessary for it to acquire, hold, construct, enlarge, improve, maintain, operate, own, lease either as lessor or lessee, water works, water supply works and water distribution systems and sewers, sewer systems or parts thereof, sewage treatment works, including works for treating and disposing of industrial waste for the Borough of Aliquippa, and for such other territory as it may lawfully serve.

The recommendations pertaining to the setting of rates are provided to the Authority by Lennon, Smith, Souleret Engineering, Inc., Coraopolis, Pennsylvania, Civil Engineers and Surveyors (the "Consulting Engineer").

ANNUAL REPORT OF THE CONSULTING ENGINEER

The Indenture requires the Authority to employ a Consulting Engineer to perform such duties as are imposed on the Consulting Engineer pursuant to the provisions of the Indenture. It is the duty of the Consulting Engineer, among other things, to prepare annually, and file with the Authority, an Annual Report setting forth the following:

- (a) the Consulting Engineer's advice and recommendations as to the proper maintenance, repair and operation of the Utility System during the next fiscal year of the Authority, its estimate for said next fiscal year of the amounts of money that will be required to be expended for current expenses and its estimate of the gross revenues of the Utility System for the said next fiscal year;
- (b) a statement that the form of budget for the next fiscal year of the Authority prepared by the Authority includes or fails to include the recommendations made in the report pursuant to (a) above;
- (c) the Consulting Engineer's advice and recommendation as to the capital additions and extraordinary repairs and maintenance that should be made during the next fiscal year of the Authority and its estimate of the amounts of money necessary for such purposes;
- (d) the Consulting Engineer's recommendations as to any necessary or advisable revision of rates and charges; and
- (e) the Consulting Engineer's findings as to whether the properties of the Utility System have been maintained in good repair, working order and sound operating condition and its estimate of the amount, if any, required to place such properties in such condition and the details of such expenditures and the approximate time required therefor.

The fees and expenses incurred by the Consulting Engineer in connection with its services performed pursuant to the Indenture are payable out of moneys in the Operating Fund. The aforesaid Annual Report of the Consulting Engineer will be used by the Authority as the basis for the preparation of that part of the budget for the next succeeding fiscal year of the Authority appertaining to the Utility System.

In accordance with the foregoing, the Consulting Engineer has prepared its Consulting Engineer's Annual Report – 2017/2018 Operating Year (November 1, 2017 - October 31, 2018). This Report, among other things, provides information with respect to the following major categories: Maintenance, Repair and Operation, the 2017, 2018 and 2019 Budgets, Capital Additions, and Actual Revenues and Expenses for the Authority's fiscal year ending December 31, 2017 and for the eight months ending August 31, 2018. Reference is hereby made to Appendix E of this Official Statement, which contains a complete copy of the aforementioned Report.

THE WATER AND SEWER SYSTEM OF THE AUTHORITY

Description of the Area Served by the Authority

The Authority provides water and sewer services to the City of Aliquippa and portions of adjacent Hopewell Township and water service to the City of Aliquippa and portions of Hopewell Township, Raccoon Township and Potter Township, all located in Beaver County, Pennsylvania, approximately 20 miles northwest of the City of Pittsburgh on the south bank of the Ohio River. The Area is easily accessible (30 minutes) to Pittsburgh by way of the Beaver Valley Expressway (Route 60), a four-lane, limited access highway and by Route 51, a four-lane highway along the Ohio River. Greater Pittsburgh International Airport is a ten minute drive from the Area.

The area has become stable over the past decade or so due to its available amenities, prime location, superior road network and easy access to the rest of Southwest Pennsylvania and major centers in Ohio and West Virginia. Aiding this has been the development of a nearly large retail complex consisting of the Beaver Valley Mall and two adjacent shopping centers in the neighboring Township of Center. The triple complex includes two major department stores -- J.C. Penney's and Boscov's Department Store. Also among over 100 other stores, there is a Wal-Mart, a multi-screen theater, CVS, Eckerd, Lowe's Home Center, Pier One, PetSmart, Giant Eagle, Target, all major banks, and numerous restaurants.

In addition there is an extension campus of the Penn State University and the Beaver County Community College Campus nearby.

The Authority operates the water softening plant, which has a rated capacity of 4 million gallons per day. The primary sources of water are two radial collector wells near the Ohio River. Together these wells can pump in excess of 4 million gallons per day to the softening plant for treatment. Five vertical wells are also available to provide reserve capacity. The Authority maintains over 70 miles of distribution lines and services approximately 6,700 residential, commercial and industrial customers. There are seven (7) storage tanks in service with a combined capacity of 9.678 million gallons.

The Authority also operates a Wastewater Treatment Plant which serves both the City of Aliquippa and Hopewell Township. The wastewater treatment plant has a design hydraulic capacity of 3.4 MGD. The maximum wet weather hydraulic capacity is 7.0 MGD. The plant discharges treated effluent to the Ohio River.

The sources of water for the Authority are two (2) radial collector groundwater wells. An average of 2,994,950 gallons of water is withdrawn each day. The MWAA property is approximately 2.1 square miles and is within the municipalities of Aliquippa, Hopewell and Center Townships. The water system serves a population of approximately 15,685 people including some residential and commercial customers from Hopewell, Raccoon and Potter Townships.

Water pumped from the wells is treated before entering the distribution system. Treatment includes iron and manganese removal, softening and disinfection.

For further information on the System refer to the Consulting Engineer's Annual Report in Appendix E.

Largest Customers

The following tables depict both, the ten largest customers and annual volume purchased for water and sewer services of the Authority.

Customer (Water System)	2017 (Water)
USG	\$ 511,611.96
Linmar Homes	128,946.72
Aliquippa Valley	112,016.24
Beaver County Jail.....	84,724.68
Aliquippa School District.....	53,238.56
Hyman Group	45,306.40
Brunton Dairy	32,136.90
Precision Kidd.....	27,695.60
Hyman Group	22,475.73
Mt. Vernon.....	16,938.56

Source: Authority officials.

Customer (Sewer System)	2017 (Sewer)
Hopewell Township	\$ 432,966.10
Housing Authority	53,442.62
Linmar Homes	48,122.02
Aliquippa Valley.....	38,225.45
Beaver County Jail.....	11,660.76
Hyman Group	11,598.26
Mt. Vernon.....	8,381.54
Aliquippa School District.....	7,415.91
Maple Valley.....	6,377.24
Versatex	5,324.00

Source: Authority officials.

Over the past five years, the ten largest Authority customers have accounted for the following percentage of total Authority operating revenues:

Year	Percent (%) of Revenue (Water System)	Percent (%) of Revenue (Sewer System)
2013	36.0%	43.0%
2014	35.0%	43.0%
2015	36.0%	42.0%
2016	22.0%	44.0%
2017	23.9%	41.2%

Source: Authority officials.

Customer Base and Growth

The following table depicts the growth of the Authority's customer base over the past five years.

Account (Water System)	2013	2014	2015	2016	2017
Residential	6,273	6,247	6,282	6,282	6,196
Commercial/Institutional	411	356	361	362	419
Total	6,684	6,603	6,643	6,644	6,615

Account (Sewer System)	2013	2014	2015	2016	2017
Residential	4,099	4,047	4,068	4,054	3,986
Commercial/Institutional	320	309	300	310	318
Total	4,419	4,356	4,368	4,364	4,304

Source: Authority officials.

Rate Schedules – Quarterly Residential Charges*

WATER DIVISION

Assumes an average water use of 11,000 gallons per quarter	
First 6,000 Gallons	\$75.00/Minimum
Over 6,000 Gallons	\$12.50/1,000

*Rate structure increased as of January 1, 2016, for previous rate structures see Consulting Engineer's Annual Report herein – Appendix E.

Source: Consulting Engineer.

SEWER DIVISION

Assumes an average water use of 11,000 gallons per quarter	
First 6,000 Gallons	\$39.08/Minimum
Next 12,000 Gallons	\$ 5.24/1,000
Next 42,000 Gallons	\$ 4.53/1,000
Over 60,000 Gallons	\$ 3.62/1,000

*Rate structure increased as of January 1, 2012, for previous rate structures see Consulting Engineer's Annual Report herein – Appendix E.

Source: Consulting Engineer.

Billings and Collection Experience

The following table indicates the billings and percentages of collections for the last five years.

Account (Water System)	2013	2014	2015	2016	2017
Billings	\$2,733,401.09	\$2,774,776.13	\$2,758,776.77	\$4,360,962.12	\$4,340,583.43
Collections	2,734,974.00	2,727,247.00	2,819,712.00	4,426,552.00	4,326,213.00
% Collected	100.06%	98.29%	102.21%	101.50%	99.67%

Source: Authority officials.

Account (Sewer System)	2013	2014	2015	2016	2017
Billings	\$1,785,630.62	\$1,800,410.36	\$1,797,569.97	\$1,730,606.50	\$1,542,300.45
Collections	1,753,095.00	1,752,515.00	1,760,681.00	1,697,316.00	1,512,527.00
% Collected	98.18%	97.34%	97.95%	98.08%	98.07%

Source: Authority officials.

FINANCIAL REVIEW

The following schedules summarize the Authority's Water and Sewer financial condition and net position, as well as a summary of net operating revenues available for debt service coverage for the fiscal years ending December 31, 2014 through 2017. The figures have been arranged in a form believed to be convenient for the purposes of this Official Statement.

The Authority's governmental and fiduciary fund types utilize cash basis of accounting. Under this method, certain revenue and related assets are recognized when received rather than when earned and certain expenditures are recognized when paid rather than when the obligation is incurred.

The Accounting Firm of Mark C. Turnley, Certified Public Accountants, New Brighton, Pennsylvania, currently serves as the Authority's auditor, but such auditor has not been engaged to perform, and has not performed, since the date of its report included as an Appendix to this Official Statement, any procedure on the financial statements addressed in that report. Such auditor also has not performed any procedures related to this Official Statement.

Water and Sewer Statement of Operating Revenue, Expenses and Changes in Net Position

	Actual			
	As of Fiscal Year End December 31,			
	2014	2015	2016	2017
OPERATING REVENUE				
Domestic consumer	\$2,656,992	\$2,703,361 ⁽¹⁾	\$3,825,323	\$3,847,845
Commercial consumer	548,074	562,020 ⁽¹⁾	735,515	607,267
Industrial consumer	358,643	371,726	567,848	571,774
Sales to public	163,787	166,237	150,173	88,836
Fire protection	242,996	270,484	310,637	232,332
Sales to public authority and other utilities.....	509,270	506,566	534,372	490,685
Customer penalties	99,040	98,698	128,257	127,114
Turn on charges and NSF checks	4,765	5,044	5,763	5,312
Tap Fees	19,840	45,732	14,412	28,494
Total Operating Revenue	\$4,603,407	\$4,729,868	\$6,272,300	\$5,999,659
OPERATING EXPENSES				
Source of supply	\$57,220	\$57,560	\$34,187	\$91,351
Power and pumping	555,544	571,151	571,102	533,713
Purification and laboratory	436,659	545,363	382,760	508,071
Sewage treatment.....	232,079	274,707	268,600	450,961
Transmission and distribution.....	632,343	543,437	796,433	808,939
Accounting and collection	207,976	196,534	0	0
General and administrative	1,190,420	1,260,888	1,366,318	1,365,576
Depreciation	652,053	653,969	793,888	809,179
Total operating expenses	\$3,964,294	\$4,103,609	\$4,213,288	\$4,567,790
Total operating income	\$639,113	\$626,259	\$2,059,012	\$1,431,869
NONOPERATING REVENUES (EXPENSES)				
Non-operating revenue	\$78,438	\$95,549	\$91,591	\$87,630
Non-operating expenses	(562,862)	(522,176)	(463,251)	(608,502)
Total non-operating revenues (expenses).....	\$(484,424)	\$(426,627)	\$(371,660)	\$(520,872)
Net Income (Loss)	\$154,689	\$199,632	\$1,687,352	\$910,997
Net Position - January 1	\$5,516,769	\$6,878,275 ⁽²⁾	\$7,077,907	\$8,765,259
Net Position - December 31	\$5,671,458	\$7,077,907	\$8,765,259	\$9,676,256

⁽¹⁾Rate increases went into effect January 1, 2016.

⁽²⁾Effective January 1, 2015, the Municipal Water Authority of Aliquippa implemented Government Accounting Standards Board (GASB) Statements No. 67, 68 and 71, which require the accounting for unfunded pension liability pension plan. Accordingly, the Authority's net position as of January 1, 2015 was restated as follows: Net Pension Liability (Measurement date 12/31/15, \$1,206,818).

Source: Authority Audits.

Historical Summary of Net Revenues Available for Debt Service

Fiscal Year End 12/31/2014	Revenues	Expenses⁽¹⁾	Net Revenue
Water.....	\$2,876,275	\$2,506,977	\$ 369,298
Sewer	<u>1,805,569</u>	<u>805,265</u>	<u>1,000,304</u>
	\$4,681,844	\$3,312,242	\$1,369,602
Debt Services:			2014 Payments
2014 Debt Service Payments: Total Debt			\$1,359,644
Senior Debt ⁽²⁾			\$969,924
Total Required Annual Debt Service Cover ⁽³⁾			\$96,992
Net Revenue Excess (Deficiency) ⁽⁴⁾			\$(87,034)
2014 Actual Coverage Factor	1.01 x Total Debt Service	1.01 x Senior Debt Service	
Requirement Coverage Factor	1.07 x Total Debt Service	1.10 x Senior Debt Service	

Fiscal Year End 12/31/2015	Revenues	Expenses⁽¹⁾	Net Revenue
Water.....	\$3,012,096	\$2,572,586	\$439,510
Sewer	<u>1,811,321</u>	<u>877,052</u>	<u>936,269</u>
	\$4,825,417	\$3,449,638	\$1,375,779
Debt Services:			2015 Payments
2015 Debt Service Payments: Total Debt			\$1,312,586
Senior Debt ⁽²⁾			\$973,046
Total Required Annual Debt Service Cover ⁽³⁾			\$97,305
Net Revenue Excess (Deficiency) ⁽⁴⁾			\$(34,112)
2015 Actual Coverage Factor	1.05 x Total Debt Service	1.06 x Senior Debt Service	
Requirement Coverage Factor	1.07 x Total Debt Service	1.10 x Senior Debt Service	

Fiscal Year End 12/31/2016	Revenues	Expenses⁽¹⁾	Net Revenue
Water.....	\$4,616,727	\$2,520,757	\$2,095,970
Sewer	<u>1,747,164</u>	<u>898,644</u>	<u>848,520</u>
	\$6,363,891	\$3,419,401	\$2,944,490
Debt Services:			2016 Payments
2016 Debt Service Payments: Total Debt			\$1,292,703
Senior Debt ⁽²⁾			\$969,551
Total Required Annual Debt Service Cover ⁽³⁾			\$96,955
Net Revenue Excess (Deficiency) ⁽⁴⁾			\$1,554,832
2016 Actual Coverage Factor	2.28 x Total Debt Service	2.70 x Senior Debt Service	
Requirement Coverage Factor	1.08 x Total Debt Service	1.10 x Senior Debt Service	

Fiscal Year End 12/31/2017	Revenues	Expenses⁽¹⁾	Net Revenue
Water.....	\$4,514,592	\$2,622,647	\$1,891,945
Sewer	<u>1,572,698</u>	<u>1,135,964</u>	<u>436,734</u>
	\$6,087,290	\$3,758,611	\$2,328,679
Debt Services:			2017 Payments
2017 Debt Service Payments: Total Debt			\$1,374,328
Senior Debt ⁽²⁾			\$969,570
Total Required Annual Debt Service Cover ⁽³⁾			\$96,957
Net Revenue Excess (Deficiency) ⁽⁴⁾			\$857,394
2017 Actual (Budget) Coverage Factor (See Note)	1.69 x Total Debt Service	1.98 x Senior Debt Service	
Requirement Coverage Factor	1.07 x Total Debt Service	1.10 x Senior Debt Service	

⁽¹⁾Excludes Depreciation and Debt Service.

⁽³⁾Debt Service Coverage is 10%, for Senior Debt only.

⁽²⁾1998 and 2003 Revenue Bonds and PennVest Loans

⁽⁴⁾Over Total Debt Service plus Required Coverage

Note: 2017 figures are based on scheduled debt service absent the 2017 refunding. Actual 2017 coverage was 2.11 x Total Debt Service (2.37 x Senior Debt Service) due to a \$268,654 debt service reduction in 2017 resulting from the refunding.

Source: The Prior Indenture and Authority Official Statements and Audits.

The foregoing table shows the extent to which the Authority achieved or exceeded the debt service coverage requirements of the Prior Indenture over the last four full fiscal years. The Prior Indenture required that the money received by the Authority in the normal course of business each year (including receipts and revenues broadly defined but not such items as borrowed money) be sufficient to pay all of its current obligations payable from those receipts and revenues in that year (including debt service) plus 10% of that year's debt service on its senior debt (comprising, during the four years shown in the table, the 1998 Bonds, the 2003 Bonds and the outstanding PennVest loan). The current Indenture requires the Authority's annual receipts and revenues, plus any accumulated surplus receipts and revenues from prior years, to cover its current year's obligations (including debt service) plus 10% of that year's debt service on its on Parity Bonds (i.e. the Bonds, the 2017 Bonds, the 2018 Bonds and any future debt issued on a parity with the Bonds).

LABOR RELATIONS AND PENSION

Authority Employment and Labor Relations

The Authority presently has 21 full-time employees. The full time positions are comprised of the following: General Manager, (4) WTP Operators / Maintenance Personnel, (6) WWTP Operators / Maintenance Personnel, (6) System Maintenance Personnel, and (4) Office Personnel.

Classified personnel of the Authority are represented for purposes of collective bargaining by the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union, Local 1211-02. The current collective bargaining agreement between the Authority and its classified personnel expires on December 31, 2020. The Authority generally considers its labor relations to be excellent; no work stoppages by the classified personnel have ever occurred.

Pension

An officers and managers defined benefit pension plan was established on August 1, 1978 with plan assets being managed by the Principal Financial Group. In order to participate in the plan, officers and managers of the Authority must have attained the age of 21 but not age 60 and have completed 1 year of continuous service with the Authority. Retirement benefits equal 60 percent of average compensation over the last 5 years of employment times an accrued benefit adjustment reduced by the participant's paid up annuity. Vesting at 100 percent occurs after completion of 5 years of service.

A defined benefit pension plan covering all employees of the Authority, other than officers and managers, was established on December 1, 1975 with plan assets being managed by the Principal Financial Group. In order to participate in this plan, eligible employees must complete 1000 hours of continuous service with the Authority. Monthly retirement benefits are equal to \$30 multiplied by years of service as of July 1, 2003, payable for life. The vesting schedule is 40 percent after 4 years of service, increasing 5 percent the next 2 years and increasing by 10 percent per year after. This plan was frozen on July 1, 2003.

On July 1, 2003, the Authority entered into a trust agreement with the Steelworkers Pension Trust to contribute a fixed dollar amount for each covered employee. This plan covers staff other than officers and managers. Detailed financial information regarding this plan can be attained by contacting the Steelworkers Pension Trust, Seven Neshaminy Interplex, Suite 301, Trevose, PA 19053.

The Authority established a deferred compensation plan on January 21, 1993 in accordance with Section 457 of the Internal Revenue Code for all full-time employees.

For further description and funding of the pension, please refer to the accompanying financial statement in Appendix F.

APPENDIX B
ECONOMIC AND DEMOGRAPHIC INFORMATION
ON THE SERVICE AREA MUNICIPALITIES

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ECONOMIC AND DEMOGRAPHIC DESCRIPTION OF THE MUNICIPAL WATER AUTHORITY OF ALIQUIPPA SERVICE AREA

General

Municipal Water Authority of Aliquippa (the “Authority”) serves the City of Aliquippa and portions of Hopewell, Raccoon and Potter Townships, all located in Beaver County, Pennsylvania (collectively, the “Service Area Municipalities”). The Service Area Municipalities are located in the central portion of Beaver County, Pennsylvania in the Aliquippa School District (City of Aliquippa), the Hopewell Area School District (Hopewell and Raccoon Townships) and the Central Valley School District (Potter Township), approximately 20 miles northwest of Pittsburgh, Pennsylvania.

Population - 2010 Census vs. 2000 Census

	<u>2010</u>	<u>2000</u>
Beaver County.....	31,946	35,112
Commonwealth	12,702,379	12281,054

Source: U.S. Census Bureau

Age Composition – 2010 Census

	<u>Under 18</u>	<u>Percent</u>	<u>65 or Over</u>	<u>Percent</u>
Beaver County.....	6,651	20.82%	6,066	18.99%
Commonwealth	2,792,155	21.98%	1,959,307	15.42%

Source: U.S. Census Bureau

Occupied Housing – 2010 Census

	<u>Total Housing Units</u>	<u>Occupied Housing Units⁽¹⁾</u>	<u>Percent Occupied</u>	<u>Owner- Occupied Housing Units</u>	<u>Percent Owner Occupied</u>
Beaver County.....	17,585	13,693	77.87%	10,750	78.51%
Commonwealth	5,567,315	5,018,904	90.15%	3,491,722	69.57%

⁽¹⁾There are 1,164 (11.91%) residential properties for seasonal, recreational or occasional use in the School District.

Source: U.S. Census Bureau

Major Employers of Beaver County

<u>Company</u>	<u>Company</u>
Valley Medical Facilities Inc.	Beaver County
Passavant Memorial Homes	IPSCO Koppel Tubulars Corp.
Wal-Mart Associates, Inc.	McGuire Memorial
Great Arrow Builders LLC	Veka Inc.
FirstEnergy Nuclear Operating Co.	Heritage Valley Medical Group Inc.

Source: Center for Workforce Information and Analysis, Pennsylvania Dept. of Labor and Industry – 4th QTR – 2017.

Education

Higher education institutions in Beaver County include Geneva College, a four-year college located in Beaver Falls, the Pennsylvania State University's Beaver campus and Beaver County Community College and both two-year colleges, located in Center Township. Major colleges and universities located in Pittsburgh are within a 40 minute commute for Beaver County residents.

Transportation

The Beaver County Transit Authority (BCTA) provides bus service to the Beaver County area as well as to the Pittsburgh area. The Port Authority of Allegheny County provides bus service to the area from Pittsburgh and various locations throughout Allegheny County. The Parkway West (U.S. Routes 22-30) is five miles from the School District, and provides commuters with access to the downtown Pittsburgh area, connecting to the Beaver Valley Expressway at Pittsburgh International Airport.

Medical Facilities

Heritage Valley Health System was formed in 1996 from the merger of The Medical Center of Beaver County and Sewickley Valley Hospital (which, although located in Allegheny County, serves the southern part of Beaver County). Heritage Valley Health System is a 547-bed teaching facility and serves the majority of Beaver County residents.

APPENDIX C

FORM OF BOND COUNSEL OPINION

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The proposed form of the legal opinion of the Law Offices of Wayne D. Gerhold, bond counsel is set forth below. The actual opinion will be delivered on the date of delivery of the bonds referred to therein and may vary from the form to reflect circumstances both factual and legal at the time of delivery. Recirculation of the Official Statement following the date hereof shall create no implication that the Law Offices of Wayne D. Gerhold has reviewed any of the matters set forth in such opinion subsequent to the date of such opinion.

To the Parties Referenced above and the Purchasers of the
Below-Described Bonds:

**RE: \$10,000,000
 MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
 BEAVER COUNTY, PENNSYLVANIA
 WATER AND SEWER REVENUE BONDS
 SERIES OF 2019**

I have acted as Bond Counsel in connection with the issuance and sale by the Municipal Water Authority of Aliquippa, Beaver County, Pennsylvania (the "Authority") of the above referenced Water and Sewer Revenue Bonds, Series of 2019 (the "Bonds") in the aggregate principal amount of \$10,000,000. I have examined the law and such certified proceedings and other papers as I deemed necessary to render this opinion including original counterparts or certified copies of the Indenture, hereinafter defined, the opinion of Authority Solicitor and a Tax Certificate (the "Tax Certificate") of the Authority setting forth the Authority's reasonable expectation as of the date of issuance of the Bonds that the proceeds of the Bonds will not be used in a manner that would cause such obligations to be "arbitrage bonds" within the meaning of Sections 103(b)(2) and 148 of the Internal Revenue Code of 1986, as amended (the "Code"), and the regulations promulgated thereunder.

I have not been engaged or undertaken to review the accuracy, completeness or sufficiency of the Official Statement or other offering material relating to the Bonds (except to the extent, if any, stated in the Official Statement) and I express no opinion relating thereto (excepting only the matters set forth as my opinion in the Official Statement).

The Bonds have been issued under a Trust Indenture dated as of November 15, 2017 (the "Original Indenture") between the Authority and The Bank of New York Mellon Trust Company, N.A., Pittsburgh, Pennsylvania as Trustee (the "Trustee") and the First Supplemental Trust Indenture between the Authority and the Trustee dated as of October 11, 2018, (the "First Supplemental Indenture") and the Second Supplemental Trust Indenture between the Authority and the Trustee dated as of January 3, 2019, (the "Second Supplemental Indenture," and collectively with the Original Indenture and the First Supplemental Indenture the "Indenture"). The Bonds have been issued in order to: (a) fund certain capital projects of the Authority (the "2019 Capital Improvements Program"), (b) fund capitalized interest, (c) make any required deposit to the Debt Service Reserve Fund under the Indenture and (d) pay the costs and expenses related to the issuance of the 2019 Bonds.

The Bonds are equally and ratably secured, together with any additional bonds which the Authority has and may hereafter issue under the Indenture, by the assignment and pledge to the Trustee of the Trust Estate including the Receipts and Revenues (both as defined in the Indenture) derived by the Authority from and in connection with the Water System (subject to the claims of bonds of any series hereafter issued under the Indenture to any special sinking fund, account or other fund which may be provided therefor, as set forth in the Indenture). Payment of principal of and interest on the Bonds will be made pursuant to the Second Supplemental Indenture.

In rendering the opinions set forth below, I have relied upon the genuineness, authenticity, truthfulness and completeness of all documents, records and other instruments examined by me. Except as set forth in Paragraph 5 below, my opinions are given only with respect to the laws of the Commonwealth of Pennsylvania as enacted and construed on the date hereof. All capitalized terms used herein not otherwise defined are used with the meaning set forth in the Second Supplemental Indenture.

As to questions of fact material to this opinion, I have relied upon the certified proceedings and other certifications of public officials furnished to me without undertaking to verify those facts by independent investigation.

Based on my examination, I am of the opinion, as of the date hereof and under existing law, as follows:

(1) The Authority is a public instrumentality and body corporate and politic duly organized pursuant to the Municipality Authorities Act, Act of June 19, 2001, P.L. 287, No.22, as amended (53 Pa. C.S. § 5601 et seq.) (the "Act") and is validly existing and in good standing under the Act. The Authority has full legal right, power and authority to enter into the Indenture, to issue, sell and deliver the Bonds and to carry out and consummate all other transactions to be carried out and consummated by it as contemplated by the Second Supplemental Indenture.

(2) The proceedings of the Authority authorizing the execution and delivery of the Second Supplemental Indenture are valid and legally sufficient and the Second Supplemental Indenture has been duly authorized, executed and delivered by the Authority, and is a legal, binding and enforceable instrument in accordance with its terms, except as may be limited by bankruptcy, insolvency, reorganization or other laws or equitable principles affecting creditors' rights generally.

(3) The proceedings of the Authority authorizing the execution, sale and delivery of the Bonds are valid and legally sufficient and the Bonds have been duly and validly authorized, executed, issued and delivered by the Authority and constitute valid and binding obligations of the Authority enforceable in accordance with their terms and are entitled to the benefits and security of the Indenture. The Bonds are payable from and secured by a valid lien on and pledge of the Receipts and Revenues in the manner and to the extent provided in the Indenture. The Authority is duly authorized to pledge such Receipts and Revenues, and no further action on the part of the Authority or any other party is required to perfect the same or the interest of the holders of the Bonds therein.

(4) All conditions precedent and concurrent, provided in the Indenture, to the authentication of the Bonds, by the Trustee, have been complied with and the Bonds have been duly authenticated and delivered.

(5) Interest on the Bonds (including any accruals of original issue discount properly allocable to a beneficial owner) (a) is excluded from gross income for Federal income tax purposes and (b) is not an item of tax preference within the meaning of Section 57 of the Internal Revenue Code of 1986, as amended (the "Code"), for purposes of the federal alternative minimum tax imposed by Section 55 of the Code on individuals and corporations; however, it should be noted that, with respect to corporations (as defined for federal income tax purposes), such interest is taken into account in determining adjusted current earnings for the purposes of computing the alternative minimum tax imposed by Section 55 of the Code on such corporations. The difference between the final public offering price of certain of the Bonds maturing on November 15 of the years 2033, 2038, 2043 and 2047, (the "OID Bonds") and the maturity value thereof is the original issue discount. Accruals of original issue discount with respect to an OID Bond allocable to an owner of that Bond under a constant yield method of accrual (x) are not included in gross income for federal income tax purposes and (y) are added to such owner's tax basis in the OID Bond for the purpose of determining gain or loss for federal income tax purposes upon sale, exchange, redemption or other disposition of the OID Bond. Generally, an appropriate portion (depending on the holding period of the OID Bond by each purchaser) of the total amount of original issue discount payable at the maturity of the OID Bond will, upon disposition or payment of an OID Bond, be treated as a recovery of basis, rather than as taxable gain, for federal income tax purposes. The portion so treated will be determined by allocating the original issue discount over the term of each OID Bond through a series of adjustments to the issue price for each semiannual accrual period. The opinions hereinbefore set forth in this Paragraph 5 are subject to the condition that the Authority comply with all requirements of the Code that must be satisfied subsequent to the issuance of the Bonds in order that interest thereon be (or continue to be) excluded from gross income for federal income tax purposes. Failure to comply with such requirements could cause the interest on the Bonds to be included in gross income retroactively to the date of issuance of the Bonds. The Authority has covenanted to comply with all such requirements and has the power to comply with such covenants. I express no opinion regarding other federal tax consequences arising with respect to the Bonds.

(6) The Bonds are exempt from personal property taxes in Pennsylvania; the interest on the Bonds is exempt from Pennsylvania Corporate Net Income Tax and from Pennsylvania state and local personal income tax but such exemption does not extend to gift, estate, succession or inheritance taxes or any taxes not levied directly on the Bonds, the transfer thereof, the income therefrom or the realization of profits on the sale thereof.

(7) Under the Probate, Estates and Fiduciaries Code of Pennsylvania, the Bonds are authorized investments for fiduciaries and personal representatives, as defined in said Code, in Pennsylvania.

(8) Upon their initial issuance and delivery, the Bonds will be "qualified tax-exempt obligations" within the meaning of Section 265(b) of the Code.

(9) The Bonds are not arbitrage bonds within the meaning of Section 148 of the Code assuming compliance by the Authority with certain covenants made in the Indenture or other certificates of the Authority provided in connection with the authorization, issuance and sale of the Bonds.

(10) The Bonds are securities within the meaning of, and are negotiable as provided in, the Pennsylvania Uniform Commercial Code - Investment Securities.

(11) The Bonds are exempt from registration under the provisions of the Securities Act of 1933, as amended, and the Indenture is not required to be qualified under the Trust Indenture Act of 1939, as amended.

The accrual or receipt of interest on the Bonds may otherwise affect the federal income tax liability of the recipient. The extent of these other tax consequences will depend upon the recipient's particular status or other items of income or deduction. I express no opinion regarding any such consequences.

Purchasers of the Bonds, particularly purchasers that are corporations (including S corporations, foreign corporations, operating branches in the United States and corporations subject to the environmental tax imposed by Section 59A of the Code), property or casualty insurance companies, banks, thrifts or other financial institutions or certain recipients of Social Security or Railroad Retirement benefits and taxpayers who may be deemed to have incurred (or continued) indebtedness to purchase or carry tax-exempt obligations are advised to consult their tax advisors as to the tax consequences of purchasing or holding the Bonds.

The Code imposes certain requirements which must be met on a continuing basis subsequent to the issuance of the Bonds for the interest paid thereon to be excluded from gross income for federal income tax purposes. The Authority has covenanted to comply with certain requirements designed to assure that interest paid on the Bonds will not become includable in gross income. The opinions set forth herein are subject to continuing compliance by the Authority with such covenants. Moreover, failure to comply with such covenants could cause interest on the Bonds to be included in gross income retroactively to the date of issuance of such Bonds.

It is to be understood that the rights of the owners of the Bonds and the enforceability of the Bonds and the Indenture may be subject to bankruptcy, insolvency, reorganization, moratorium and other similar laws affecting creditors' rights heretofore or hereafter enacted and that their enforcement may also be subject to the exercise of judicial discretion in appropriate cases.

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APPENDIX D

FORM OF CONTINUING DISCLOSURE CERTIFICATE

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\$10,000,000
MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
(Beaver County, Pennsylvania)
Dated _____, 2019 -- Final Maturity November 15, 20____
WATER AND SEWER REVENUE BONDS, SERIES OF 2019

CONTINUING DISCLOSURE CERTIFICATE

THIS CONTINUING DISCLOSURE CERTIFICATE (the "Certificate") is executed and delivered the 3rd day of January, 2019 by the Municipal Water Authority of Aliquippa (the "Issuer") in connection with the issuance of \$10,000,000 Water and sewer Revenue Bonds, Series of 2019 (the "Bonds"). The Bonds are being issued pursuant to a resolution adopted by the Board of Directors of the Issuer on September 19, 2018 (the "Authorizing Legislation") which provides for the issuance of the Bonds. The Issuer certifies, covenants and agrees as follows:

Section 1. Purpose of the Certificate.

This Certificate is being executed and delivered by the Issuer to provide for the disclosure of certain information concerning the Bonds on an on-going basis as set forth herein for the benefit of Bondholders (as hereinafter defined) in accordance with the provisions of Securities and Exchange Commission Rule 15c2-12 under the Securities Exchange Act of 1934 (17 C.F.R. Part 240, §240.15c2-12), as amended and in effect on the date hereof (the "Rule");

Section 2. Definitions; Scope of this Certificate.

All terms capitalized but not otherwise defined herein shall have the meanings assigned to those terms in the Authorizing Legislation and the Bonds. Notwithstanding the foregoing, the term "Disclosure Agent" shall mean the Issuer, or any disclosure agent appointed or engaged by the Issuer; any successor disclosure agent shall automatically succeed to the rights and duties of the Disclosure Agent hereunder, without any amendment hereto. The following capitalized terms shall have the following meanings:

"Annual Financial Information" shall mean a copy of the annual audited financial information prepared for the Issuer which shall include, if prepared, a balance sheet, a statement of revenue and expenditure and a statement of changes in fund balances. If any of the foregoing is not included in applicable audited financial statements of the Issuer timely made pursuant to Section 3 hereof, "Annual Financial Information" shall include an unaudited version thereof. All such financial information shall be prepared using a modified accrual basis of accounting, provided, however, that the Issuer may change the accounting principles used for preparation of such financial information so long as the Issuer includes as information provided to the public a statement to the effect that different accounting principles are being used, stating the reason for such change and how to compare the financial information provided by the differing financial accounting principles. Any or all of the

items listed above may be incorporated by reference from other documents, including Offering Documents of debt issues of the Issuer or related public entities, which have been submitted to Municipal Securities Rulemaking Board's, hereinafter defined, Electronic Municipal Market Access System, hereinafter defined. If the document incorporated by reference is a final Offering Document, it must be available from the MSRB. The Issuer shall clearly identify each such other document so incorporated by reference.

"*Beneficial Owner*" shall mean any person which has the power, directly or indirectly, to vote or consent with respect to, or to dispose of ownership of, any Bonds (including persons holding Bonds through nominees, depositories or other intermediaries).

"*Bondholders*" shall mean any holder of the Bonds and any Beneficial Owner thereof.

"*EMMA*" shall mean the continuing disclosure service of the MSRB's Electronic Municipal Market Access system, as established by SEC Release No. 34-58256, as amended and approved by SEC Release No. 34-59061.

"*Event*" shall mean those events that shall be reported to the MSRB through EMMA no later than ten (10) days after each occurrence as listed in Schedule 2 attached hereto and made a part hereof.

"*MSRB*" shall mean the Municipal Securities Rulemaking Board.

"*Offering Document*" shall mean the Official Statement of the Issuer, dated December 6, 2018 2019 relating to the Bonds (the "Official Statement"), and any official statement or similar document of the Issuer, or a related public entity, relating to debt obligations other than the Bonds.

"*Operating Data*" "Operating Data" shall mean the financial information and operating data specified in Schedule 1 hereto, as such schedule may be amended as provided herein.

"*Participating Underwriter*" shall mean any of the original underwriters of the Bonds required to comply with the Rule in connection with the offering of the Bonds.

"*Release*" shall mean Securities and Exchange Commission Release No. 34-59061 and Release No. 34-59062 and Release No. 34-58256.

"*SEC*" shall mean the Securities and Exchange Commission.

Section 3. Disclosure of Information.

(A) Information Provided to the Public. Except to the extent this Certificate is modified or otherwise altered in accordance with Section 4 hereof, the Issuer shall make, or shall cause the Disclosure Agent to make, public the information set forth in subsections (1), (2) and (3) below:

(1) Annual Financial Information and Operating Data. Annual Financial Information and Operating Data at least annually not later than September 30 after the end of the Issuer's fiscal year commencing with the report for the Fiscal Year ending December 31, 2018 and continuing with each fiscal year thereafter. If the Disclosure Agent is an entity or person other than the Issuer, then the Issuer shall provide the Annual Financial Information and Operating Data to the Disclosure Agent not later than fifteen (15) Business Days prior to the disclosure date referenced above. The Annual Financial Information and Operating Data may be submitted as a single document or as separate documents comprising a package and may cross-reference other information; provided that the audited financial statements of the Issuer may be submitted separately from the balance of the Annual Financial Information and Operating Data.

(2) Event Notices. Notice of the occurrence of an Event.

(3) Failure to Provide Annual Financial Information or Operating Data. Notice of the failure of Issuer to provide the Annual Financial Information or Operating Data by the date required herein.

(B) Information Provided to Public.

Annual Financial Information, Operating Data and notice of all Event occurrences (the "Information") shall be made public on the same day as notice thereof is given to the Bondholders of outstanding Bonds, if required pursuant to the Authorizing Legislation or the Bonds.

(C) Means of Making Information Public.

(1) Information shall be deemed to be made public by the Issuer or the Disclosure Agent under this Certificate if it is transmitted to the MSRB, solely using the EMMA system created by the MSRB, by electronic transmissions in word searchable pdf format at www.emma.msrb.org.

(2) Information shall be transmitted to the following:

To the extent any Annual Financial Information or Operating Data is included in a document filed with the MSRB or in a final official statement (as that term is defined in Rule 15(c)2-12(f)(3)), the Issuer shall have been deemed to have provided that information if a statement specifically referencing the filed document or final official statement is filed with the MSRB using the EMMA system as part of the Issuer's obligation to file Annual Financial Information and Operating Data pursuant to this Certificate. Additionally, if the referenced document is a final official statement (as that term is defined in Rule 15c2-12(f)(3)), it must be available from the MSRB.

Section 4. Amendment or Modification.

Notwithstanding any other provision of this Certificate, the Issuer may amend this Certificate and any provision of this Certificate may be waived, if such amendment or waiver is supported by an opinion of nationally recognized bond counsel expert in federal securities laws to the effect that such amendment or waiver would not, in and of itself, cause the undertakings herein to violate the Rule if such amendment or waiver had been effective on the date hereof but taking into account any subsequent change in official interpretation of the Rule as well as any change in circumstance.

Section 5. Miscellaneous.

(A) Termination. The Issuer's obligations under this Certificate shall terminate when all of the Bonds are or are deemed to be no longer outstanding by reason of redemption or legal defeasance or at maturity.

(B) Additional Information. Nothing in this Certificate shall be deemed to prevent the Issuer from disseminating any other information, using the means of dissemination set forth in this Certificate or any other means of communication, or including any other information in any Annual Financial Statement or notice of occurrence of an Event, in addition to that which is required by this Certificate. If the Issuer chooses to include any information in any Annual Financial Statement or notice of occurrence of an Event in addition to that which is specifically required by this Certificate, the Issuer shall have no obligation under this Certificate to update such information or include it in any future Annual Financial Statement or notice of occurrence of an Event.

(C) Defaults: Remedies. In the event of a failure of the Issuer or the Disclosure Agent to comply with any provision of this Certificate any Bondholder may take such action as may be necessary and appropriate, including seeking an action in mandamus or specific performance to cause the Issuer or the Disclosure Agent to comply with its obligations under this Certificate. A default under this Certificate shall not constitute a default on the Bonds and the sole remedy available in any proceeding to enforce this Certificate shall be an action to compel specific performance.

(D) Beneficiaries. This Certificate shall inure solely to the benefit of the Issuer, the Disclosure Agent, the Participating Underwriter and Bondholders, and shall create no rights in any other person or entity.

Section 6 Additional Disclosure Obligations.

The Issuer acknowledges and understands that other state and federal laws, including but not limited to the Securities Act of 1933, the Securities Exchange Act of 1934 and Rule 10b-5 promulgated thereunder, may apply to the Issuer, and that under some circumstances compliance with this Certificate, without additional disclosures or other action, may not fully discharge all duties and obligations of the Issuer under such laws.

Section 7. Notices.

Any notices or communications to the Issuer may be given as follows:

To the Issuer:

Municipal Water Authority of Aliquippa
160 Hopewell Avenue
Aliquippa, PA 15001
Attention: General Manager

IN WITNESS WHEREOF, the Issuer has caused its duly authorized officer to execute this Certificate as of the day and year first above written.

MUNICIPAL WATER AUTHORITY OF
ALIQUIPPA

By:

Chairman

Schedule 1

Annual Financial Information

On or before September 30 following the end of each fiscal year of the Authority, beginning with its fiscal year ending in 2018, the Authority will provide the following:

1. Its annual financial statements for such fiscal year prepared in accordance with U.S. generally accepted accounting principles. Unless audited, such financial statements will be unaudited.
2. The annual budget of the Authority for the next succeeding fiscal year of the Authority.
3. The most recent Consulting Engineer's Report.
4. A Table depicting the Authority's largest customers, in the same format as provided on page A-2 of the Official Statement.
5. A Table depicting the Authority's customer base and growth in the same format as provided on page A-3 of the Official Statement.
6. Rate schedules in the same format as provided on page A-3 of the Official Statement.
7. A Table depicting the Authority's billing and collection experience, in the same format as provided on page A-3 of the Official Statement.

Schedule 2

Events

The following events with respect to the Bonds shall constitute Events and shall be provided to the MSRB no later than ten (10) business days after the occurrence:

1. Principal and interest payment delinquencies
2. Non-payment related defaults, if material
3. Unscheduled draws on debt service reserves reflecting financial difficulties
4. Unscheduled draws on credit enhancements reflecting financial difficulties
5. Substitution of credit or liquidity providers, or their failure to perform
6. Adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the Bonds or other material events affecting the tax-exempt status of the Bonds
7. Modifications to rights of holders of the Bonds, if material
8. Bond calls, if material, and tender offers
9. Defeasances
10. Release, substitution or sale of property securing repayment of the Bonds, if material
11. Rating changes
12. Bankruptcy, insolvency, receivership or similar event of the Obligated Person (or any other entity that is an obligated person within the meaning of the Rule with respect to the Bonds)
13. The consummation of a merger, consolidation, or acquisition involving the Obligated Person (or any other entity that is an obligated person within the meaning of the Rule with respect to the Bonds) or the sale of all or substantially all of the assets of the Obligated Person or any such obligated person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material
14. The appointment of a successor or additional trustee or the change of name of a trustee, if material; and
15. Failure to make an annual financial information filing on a timely basis.

The SEC requires the listing of (1) through (14) although some of such events may not be applicable to the Bonds.

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APPENDIX E
CONSULTING ENGINEER'S REPORT

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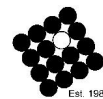
CONSULTING ENGINEER'S ANNUAL REPORT

**2017 / 2018 OPERATING YEAR
(November 1, 2017 - October 31, 2018)**

FOR

**THE MUNICIPAL WATER
AUTHORITY OF ALIQUIPPA**
160 HOPEWELL AVENUE
ALIQUIPPA, PENNSYLVANIA 15001

OCTOBER 2018



**Lennon, Smith, Souleret
Engineering, Inc.**

Civil Engineers and Surveyors

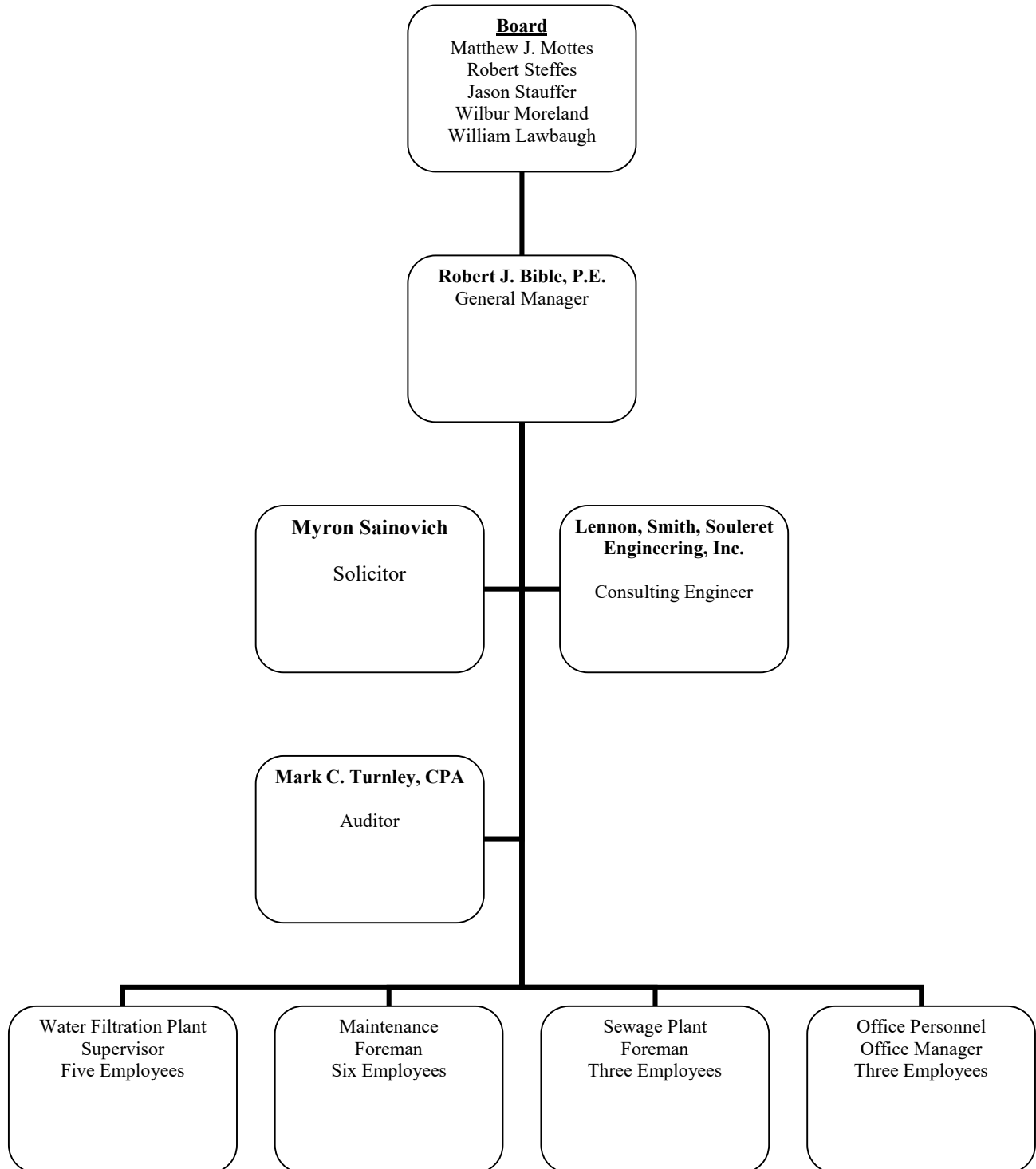
846 Fourth Avenue, Coraopolis, PA 15108
(412) 264-4400 • (412) 264-1200 Fax
info@lsse.com • www.lsse.com

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
OCTOBER 2018

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SEWER SYSTEM APPENDIX	Appended
FINANCIAL MANAGEMENT APPENDIX	Appended

**ORGANIZATIONAL CHART
MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
AS OF OCTOBER 31, 2018**



MUNICIPAL WATER AUTHORITY OF ALIQUIPPA

Aliquippa, Beaver County, Pennsylvania

724-375-5525

Identification No. 25-6007701

AUTHORITY BOARD MEMBER AS OF OCTOBER 31, 2018

Matthew J. Mottes.....Chairman
Robert Steffes.....Vice Chairman
Jason Stauffer.....Treasurer
Wilbur Moreland.....Secretary
William Lawbaugh.....Assistant Secretary/Treasurer

PROFESSIONAL APPOINTMENTS

Myron Sainovich.....Solicitor
Bank of New York, Mellon Trust No. N.A.....Trustee
Mark C. Turnley, CPA.....Auditor
WesBanco.....Depository
Lennon, Smith, Souleret Engineering, Inc.....Consulting Engineer

MANAGEMENT

Robert J. Bible, P.E.....General Manager
Denise McCoy.....Office Manager

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT

INTRODUCTION

We are pleased to submit the Consulting Engineer's Report of Operations for Fiscal Year 2018, through October 31, 2018 for the Municipal Water Authority of Aliquippa (MWAA).

DRINKING WATER SYSTEM

DESCRIPTION OF SYSTEM

The water system serves a population of approximately 13,892 within the City of Aliquippa, Hopewell Township, Potter Township, and Raccoon Township.

MWAA is located in Aliquippa, Pennsylvania. The primary source of water consists of six vertical wells (Wells 14, 18, 25, 26, 27, and 28), one Ranney Well, and one Collector Well, each located along the Ohio River. The Ranney Well and the Collector Well combined can pump approximately 4.0 MGD to the treatment plant. The treatment plant has a rated capacity of 4.0 MGD. The vertical wells were previously considered "backup" wells to provide additional capacity as needed. In 2014, the Pennsylvania Department of Environmental Protection (PaDEP) advised this was no longer allowed. The wells now need to be used for supply and sampled/permitted accordingly. In addition to the wells, there is a ready interconnect with the Center Township Water Authority system.

In February 2018, Wells 14, 26, and 27 were cleaned and new pumps installed. The Collector Well had its pumps rebuilt and the Collector and Rainey wells are scheduled to be cleaned. The motor in Well 18 pump failed in May 2018 and was replaced.

The treatment plant process includes iron and manganese removal, softening, and disinfection. The total amount of treated water storage is 9,678,000 gallons of water via seven storage tanks:

- Davidson Heights 1,078,000 Gallon Concrete Reservoir
- Davidson Heights 2,300,000 Gallon Steel Reservoir #1
- Davidson Heights 2,500,000 Gallon Steel Reservoir #2
- Sheffield Terrace 2,000,000 Gallon Steel Reservoir
- West Aliquippa 1,000,000 Gallon Steel Reservoir
- West Aliquippa 500,000 Gallon Reservoir
- Raccoon 300,000 Gallon Reservoir

Construction is currently underway for a new altitude valve for the West Tank as well as the rebuild of the pressure reducing valve (PRV) vault and the installation of a second PRV vault to serve West Aliquippa. It is anticipated this will stop overflows and reduce leaking currently experienced at the site. This project was initiated as a corrective measure in response to an Inspection Report issued by the Department of Environmental Protection (PADEP).

Lennon, Smith, Souleret Engineering, Inc. is currently evaluating the Water Plant operations in order to identify necessary future upgrades to maintain proper operation.

The Water Allocation Permit was renewed in 2014 for the next 50 years. Rules and Regulations were prepared and adopted in 2014.

The Raccoon Tank is the only tank supplying the Raccoon Township service area and provides less than one day's supply of potable water. MWAA staff installed meters and repaired valves in the system in 2014.

The distribution system is aging and the condition of the waterlines is commensurate with age. Waterlines are repaired as required to maintain service and stop leaks. Several other projects have been completed or are underway to replace aging waterlines.

- Approximately 3,000 linear feet of waterline was replaced on Edgewood Avenue in Hopewell in 2016.
- Approximately 850 linear feet of waterline was replaced on Adams Street in late 2016.
- A waterline on Golf Course Road was exposed and was replaced in July 2016.

Due to the age of the system, valves are often inoperable or do not properly seat when operated. When valves cannot be operated properly, the distribution system cannot be isolated into small areas to facilitate repair. The result is the temporary shut-down of service to large portions of the system to repair isolated waterline breaks or leaks causing a disruption of service to a large number of customers. Large scale disruptions of service could be more effectively mitigated if the valves were operable and the system could be properly isolated. In February 2018, the Authority resubmitted an application to the Commonwealth Financing Authority to seek funding through the PA Small Water and Sewer Program to replace many of these inoperable valves. The application was awarded funding in September 2018. These valve replacements are to increase system isolation capabilities and reduce water service outages for customers. Additionally, eliminating leaks and making repairs to the system will decrease the amount of unaccounted for water within the system. Design and construction phases are planned for 2019.

Geographic Information System based mapping of the water system was initiated in 2018.

In July 2018, the Authority contracted with a third party service to conduct inspections on the interior and exterior of the water storage tanks. Findings / recommendations of these inspections generally include miscellaneous repairs and maintenance to each tank.

The interior and exterior of the Sheffield Terrace, Raccoon and Davidson Heights Tank 2 require blast cleaning and painting.

WATER RATES

Table 1 indicates the current and previous water user rates charged by the MWAA to their customers. Rates were increased effective January 1, 2016 to account for increased costs and to provide for necessary capital improvements. Assuming an average water use of 11,000 gallons per quarter. The water rate is approximately 1.70% of the median household income based on 2016 U.S. Census data.

TABLE 1
SCHEDULE OF RATES – QUARTERLY RESIDENTIAL CHARGES

Current Rate Structure – January 1, 2016	
	Water
First 6,000 gallons	\$75.00 minimum
Over 6,000 gallons	12.50/1,000
Current Rate Structure – January 1, 2007	
	Water
First 6,000 gallons	\$46.27 minimum
Next 12,000 gallons	6.25/1,000
Next 42,000 gallons	5.41/1,000
Over 60,000 gallons	4.66/1,000
Previous Rate Structure – January 1, 2005	
	Water
First 6,000 gallons	\$38.56 minimum
Next 12,000 gallons	5.21/1,000
Next 42,000 gallons	4.51/1,000
Over 60,000 gallons	3.88/1,000
Previous Rate Structure – January 1, 2001	
	Water
First 6,000 gallons	\$34.43 minimum
Next 12,000 gallons	4.652/1,000
Next 42,000 gallons	4.03/1,000
Over 60,000 gallons	3.46/1,000

WATER WITHDRAWAL AND SALES

The data gathered for this section of the report was taken from official reports of MWAA.

The Daily Water Withdrawal/Instream Flow Requirement Report is a report prepared monthly and indicates the total amount of water pumped from the wells to the treatment plant on a daily basis. The Collector Well and Wells 25, 26, 27 and 28 have a common meter that was replaced in 2015. The total combined well output for 2017 was 1,153,832,330 gallons of water. A table has been included in the Water System Appendix using MWAA data which details the monthly water withdrawal from each well.

The Report of Operations records the amount of water coming into the treatment plant and the amount of finished water pumped into the distribution system for sale. In comparison, the raw water that entered the plant measured 1,142,734,000 gallons of water according to the report. The finished water leaving the plant was 1,092,508,000 gallons of water and is measured with a magnetic meter installed in 2015.

The Metered Sales of 360,713,440 gallons plus the estimated 73,255,500 gallons for maintenance and plant use compared to the finished water of 1,092,508,000 gallons pumped to the system indicates that about 40% of the water leaving the plant is not accounted for. This water loss is significant and is suspected to include undetected leaks, fires, and unreported hydrant usage. The Water System Appendix includes tables and charts which detail the above referenced data.

In early 2016, a “Distribution and Storage Control and Leak Repair Plan” was prepared by the Authority. Implementation of the plan is ongoing.

SEWER SYSTEM

DESCRIPTION OF SYSTEM

The MWAA Wastewater Treatment Plant (WWTP) serves both the City of Aliquippa and Hopewell Township. The wastewater treatment plant has a design hydraulic capacity of 3.4 MGD. The maximum wet weather hydraulic capacity is 7.0 MGD. The plant discharges treated effluent to the Ohio River under NPDES Permit (PA0025968) parameters. The WWTP was not hydraulically or organically overloaded during the 2017 operating year. The Report projects the 3-month maximum average will exceed the average annual design capacity in 2020. The 2017 Annual Wasteload Management Report was completed by MWAA. The hydraulic and organic loading charts from this report are provided in the Sewer Appendix.

As the result of the projected a hydraulic overload, regulations require a Corrective Action Plan (CAP). A CAP is currently being negotiated with the PADEP. CAP tasks include smoke and dye testing, flow monitoring, closed circuit televising, night time flow isolation measurements, and a cost effectiveness analysis.

The mechanical equipment in one of the primary clarifier tanks was replaced in 2016. The equipment in the second tank is scheduled to be replaced in late 2018/early 2019.

The NPDES Permit for the system was renewed for another 5 years in 2014. The new permit included a more stringent limit for total residual chlorine (TRC) which was evaluated by the Authority in a feasibility study. The project was bid in October 2017. Installation of a dechlorination facility and the rebuilding of the plant's existing bar screen was completed in August 2018.

Rules and Regulations were prepared and under review in 2014 and adopted in 2015. The NPDES Permit renewal application is currently being prepared.

There are seven sewage pump stations that contribute flow to the WWTP.

1. The Wye Lift Station serves Aliquippa and portions of Hopewell Township. It is equipped with four 3,000 gpm pumps powered by 75 HP motors.
2. The West Aliquippa Lift Station serves West Aliquippa and portions of Hopewell Township. It is equipped with two 500 gpm pumps powered by 10 HP motors.
3. The Golf Course Road Lift Station serves the Hospital Drive area. It is equipped with two 160 gpm pumps powered by 15 HP motors.
4. The Jail Pump Station serves the new Beaver County Jail. It is equipped with two 300 gpm pumps powered by 5 HP motors.
5. The Steel Street Lift Station is equipped with two 200 gpm pumps powered by 5 HP motors.
6. The pump station at the Woodlawn Park Area in Hopewell services 11 residential units. The assumed flow at this pump station is 11 gpm, and was designed to handle 85 gpm. (This pump station is owned and operated by Hopewell Township.)
7. The Woodlawn Pump Station is equipped with two 122 gpm pumps powered by 4 HP motors. Projected average future flows are only 6,000 gpd (30,000 gpd peak). The pumps are not installed at this time, but are stored for future use. There is no electrical power to the pump station presently. It has never been reported to operate.

The collection system is considered a separate sewer system and is relatively old. Its condition is commensurate with age. The system primarily consists of vitrified clay pipe and is subject to inflow and infiltration.

Replacement of the sewer main through the J&L Tunnel was bid in 2017 and the construction was completed in March 2018.

Geographic information system based mapping of the sewer system was initiated in 2018.

SEWER RATES

Table 2 indicates the current and previous sewer user rates charged by the MWAA to their customers. The last rate increase was in January 2018. Assuming an average water use of 11,000 gallons per quarter, the sewer rate is approximately 1.0% of the median household income based on 2016 U.S. Census data. A rate increase is expected for the 2019 fiscal year.

TABLE 2
SCHEDULE OF RATES – QUARTERLY RESIDENTIAL CHARGES

Current Rate Structure – January 1, 2018	
First 6,000 gallons	\$47.00 minimum
Over 6,000 gallons	6.25/1,000
Previous Rate Structure – January 1, 2012	
First 6,000 gallons	\$39.08 minimum
Next 12,000 gallons	5.24/1,000
Next 42,000 gallons	4.53/1,000
Over 60,000 gallons	3.62/1,000
Previous Rate Structure – January 1, 2007	
First 6,000 gallons	\$31.26 minimum
Next 12,000 gallons	4.19/1,000
Next 42,000 gallons	3.62/1,000
Over 60,000 gallons	2.89/1,000
Previous Rate Structure – January 1, 2005	
First 6,000 gallons	\$26.05 minimum
Next 12,000 gallons	3.49/1,000
Next 42,000 gallons	3.02/1,000
Over 60,000 gallons	2.41/1,000
Previous Rate Structure – January 1, 2001	
First 6,000 gallons	\$23.26 minimum
Next 12,000 gallons	3.11/1,000
Next 42,000 gallons	2.70/1,000
Over 60,000 gallons	2.15/1,000

FINANCIAL MANAGEMENT

The Financial Management Appendix provides a summary of significant historical data regarding expenses and revenues. The budget format was changed significantly in 2015

to update budget line items to match the current operations of the Authority. The budgets also provide the required Debt Service Ratio calculation in accordance with the Trust Indenture. A ratio of 1.54 was calculated for the 2017 Operating Year. A ratio of 1.20 is projected for the 2018 and 2019 Operating Year Approved Budget compared to the required ratio of 1.10.

In 2016, a delinquency policy was put in place by the Authority to address outstanding accounts receivable.

MWAA maintains various insurance policies, a listing of which is included in the Financial Management Appendix. As an “appropriate” level of insurance is not an engineering matter, we can only rely on the recommendation of the Authority’s insurance broker regarding the “adequacy” of the insurance coverage.

In September 2017, MWAA refinanced their existing bonds and is proposing to fund CAP tasks and additional capital improvements with a new bond issue.

SUMMARY AND RECOMMENDATIONS

WATER SYSTEM

- The supply of water appears to be adequate to accommodate current demand and modest expansions of the service area.
- If future demands require treated water in excess of 4.0 MGD, system updates will be required. Continue with proposed repairs of the recently permitted vertical wells.
- Development and implementation of a replacement program for both lines and valves is recommended. Grant funding was awarded in 2018 for this purpose.
- Storage capacity appears to be adequate for the Aliquippa service area with a total of seven (7) tanks in service.

- The following additional capital improvements are recommended:
 - Construction of new water treatment plant
 - Implement very aggressive leak detection program
 - Integrated SCADA system for wells, water treatment plant, booster stations, and storage facilities
 - Implement recommendations of water storage tank inspections conducted in 2018
 - Terrace Booster Station upgrade
 - Install an additional 500,000 gallon tank in the western end of the Raccoon service area
 - Green Street Waterline Replacement and other piping repairs

SEWER SYSTEM

- There appears to be adequate annual average hydraulic and organic capacity for the coming 5-year period at the WWTP. Efforts to reduce infiltration and inflow should be continued to maintain (and increase) this available capacity at the treatment plant and the collection and conveyance system as well.
- Infiltration/Inflow with past rehabilitation of sewer lines within many areas of the City is reported as successful. Continuing efforts to televise, clean and rehabilitate lines should continue. A more aggressive I/I program should be implemented to reduce flow storm response.
- Implement Corrective Action Plan, including the Sewer Flow Characterization / Flow Monitoring Program.
- The following additional capital improvements are recommended:
 - Miscellaneous plant upgrades including digester concrete repairs, grit removal system, primarily clarifier replacement
 - Integrated SCADA system for sewage pump stations and sewage treatment plant
 - Wye Lift Station Bar Screen Rehabilitation

FINANCIAL MANAGEMENT

- Monitor 2018 and 2019 expenses to ensure debt service factor of 1.10 is provided.
- Continued implementation of the delinquency policy.

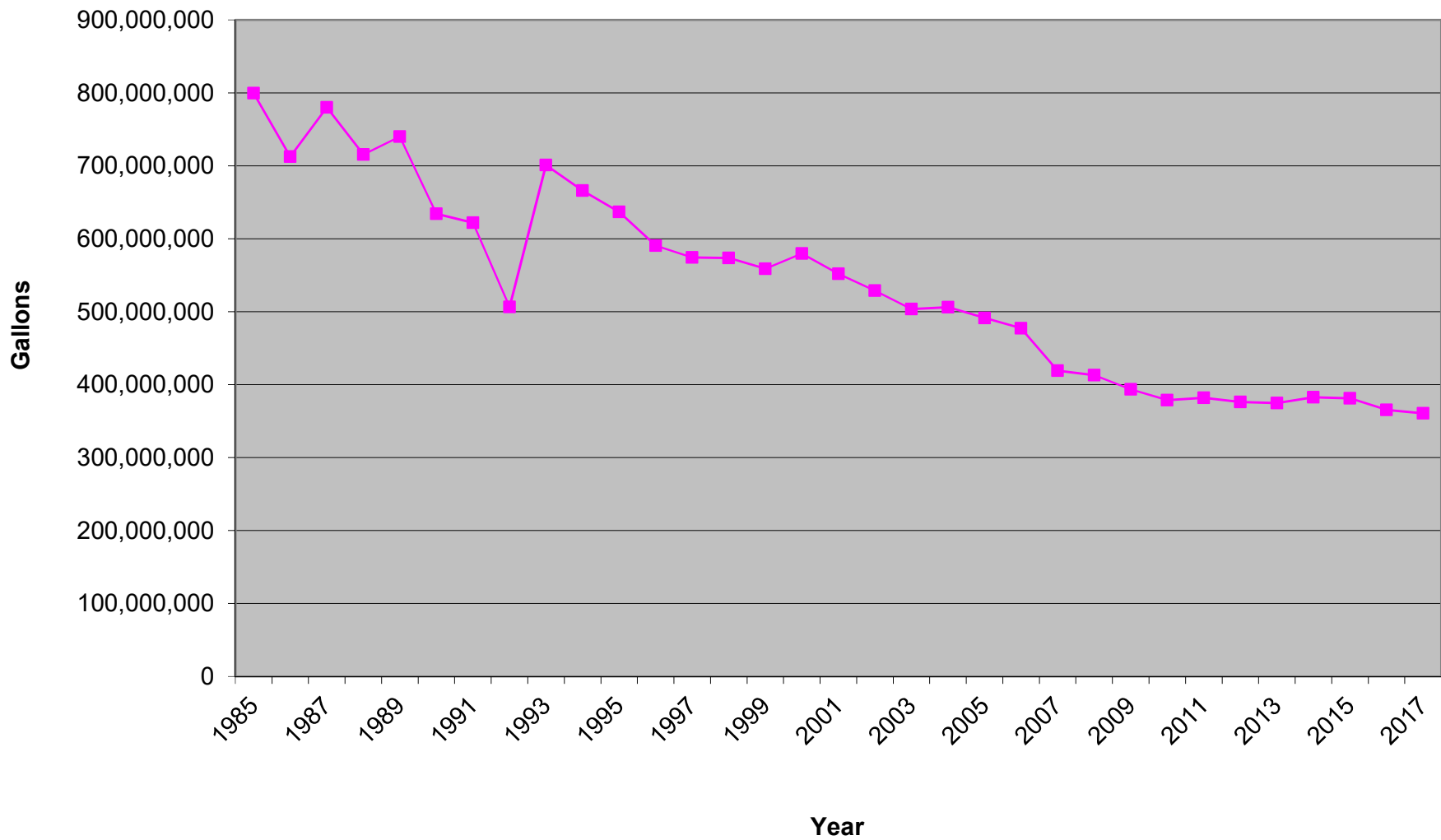
WATER SYSTEM APPENDIX

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA CONSULTING ENGINEER'S ANNUAL REPORT

ANNUAL WATER WITHDRAWAL REPORT - 2017

2017	Ranney Wells	Well 23	Collector Well	Well 25	Well 26	Well 27	Well 28	Total Well Production	TOTAL
	GALLONS							GALLONS	MGD
January	58,401,200	36,000	45,227,700	36,000	0	0	36,000	103,736,900	3.346
February	57,376,600	0	42,674,200	0	0	0	0	100,050,800	3.450
March	62,030,400	0	45,702,100	0	0	0	0	107,732,500	3.475
April	58,976,400	42,000	41,521,900	42,000	0	0	42,000	100,624,300	3.354
May	62,265,700	0	44,325,200	0	0	0	0	106,590,900	3.438
June	58,754,800	0	40,071,400	0	0	0	0	98,826,200	3.294
July	55,294,800	43,200	35,880,900	43,200	0	0	43,200	91,305,300	2.945
August	55,273,900	27,000	39,833,300	27,000	0	0	27,000	95,188,200	3.071
September	55,552,700	0	35,478,100	0	0	0	0	91,030,800	3.034
October	57,924,800	0	31,784,400	0	0	0	42,000	89,751,200	2.895
November	55,359,100	0	32,701,820	0	0	0	0	88,060,920	2.935
December	57,107,410	0	23,826,900	0	0	0	0	80,934,310	2.611
Total	694,317,810	148,200	459,027,920	148,200	0	0	190,200	1,153,832,330	37.85
DAILY AVE.	1,902,241	406	1,257,611	406	0	0	521	3,161,184	3.154

**Municipal Water Authority of Aliquippa
Annual Metered Water Sales**



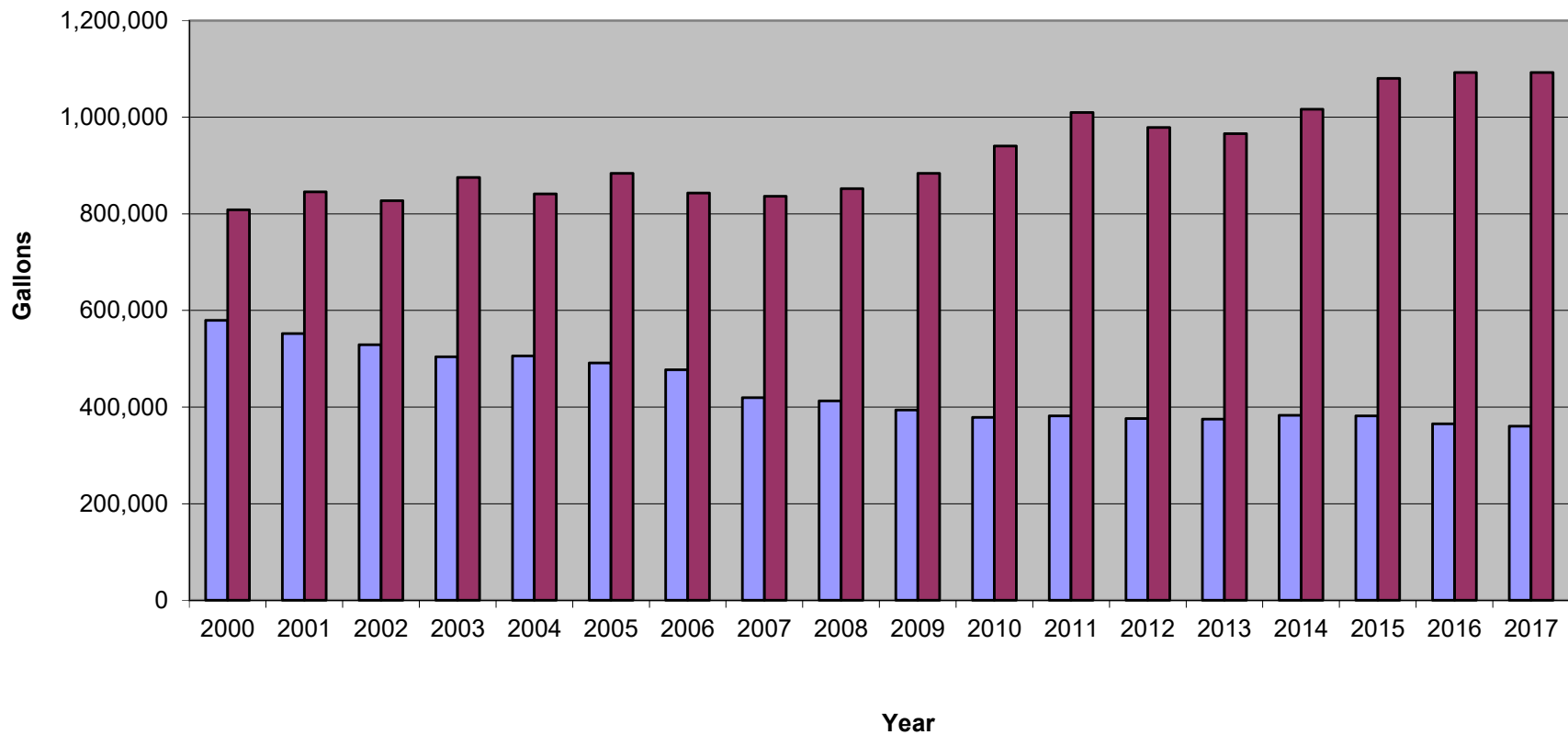
MUNICIPAL WATER AUTHORITY OF ALIQUIPPA CONSULTING ENGINEER'S ANNUAL REPORT

WATER WITHDRAWAL AND SALES - 2017 (GALLONS)

230,684							
	WATER WITHDRAWAL	REPORT OF OPERATIONS				Line Breaks and Flushing ⁽¹⁾	Metered Sales
Month	Combined Well Output	Raw Water Input	Finished Output				
			Finished	Rinse/Wash	Total		
Jan	103,736,900	101,330,000	96,972,000	5,001,300	101,973,300	7,151,204	
Feb	100,050,800	95,928,000	92,881,000	4,868,900	97,749,900	6,689,836	
Mar	107,732,500	106,159,000	101,721,000	5,543,900	107,264,900	7,151,204	
Apr	100,624,300	99,334,000	95,001,000	5,217,800	100,218,800	6,920,520	
May	106,590,900	104,883,000	100,765,000	5,698,400	106,463,400	7,151,204	
Jun	98,826,200	98,034,000	93,924,000	5,270,800	99,194,800	6,920,520	
Jul	91,305,300	89,271,000	84,732,000	5,119,600	89,851,600	7,151,204	
Aug	95,188,200	95,770,000	91,210,000	5,112,400	96,322,400	7,151,204	
Sept	91,030,800	86,934,000	82,479,000	5,080,900	87,559,900	6,920,520	
Oct	89,751,200	88,810,000	83,294,000	5,029,800	88,323,800	7,151,204	
Nov	88,060,920	86,421,000	83,255,000	4,766,700	88,021,700	6,920,520	
Dec	80,934,310	89,860,000	86,274,000	4,894,900	91,168,900	7,151,204	
TOTAL	1,153,832,330	1,142,734,000	1,092,508,000	61,605,400	1,154,113,400	84,430,344	360,713,440
DAILY AVG.	3,161,184	3,130,778	2,993,173	168,782	3,161,955	231,316	988,256

(1) Maintenance data includes water used to flush lines after line break repair operations and bi-annual line flushing water. These numbers are estimates only.

Municipal Water Authority of Aliquippa Historic Water Sales and Finished Water Produced



■ Thousand Gallons of Water Billed

■ Thousand Gallons of Finished Water Produced

SEWER SYSTEM APPENDIX

FIGURE 1
HYDRAULIC LOADING GRAPH
MWAA WASTEWATER TREATMENT PLANT

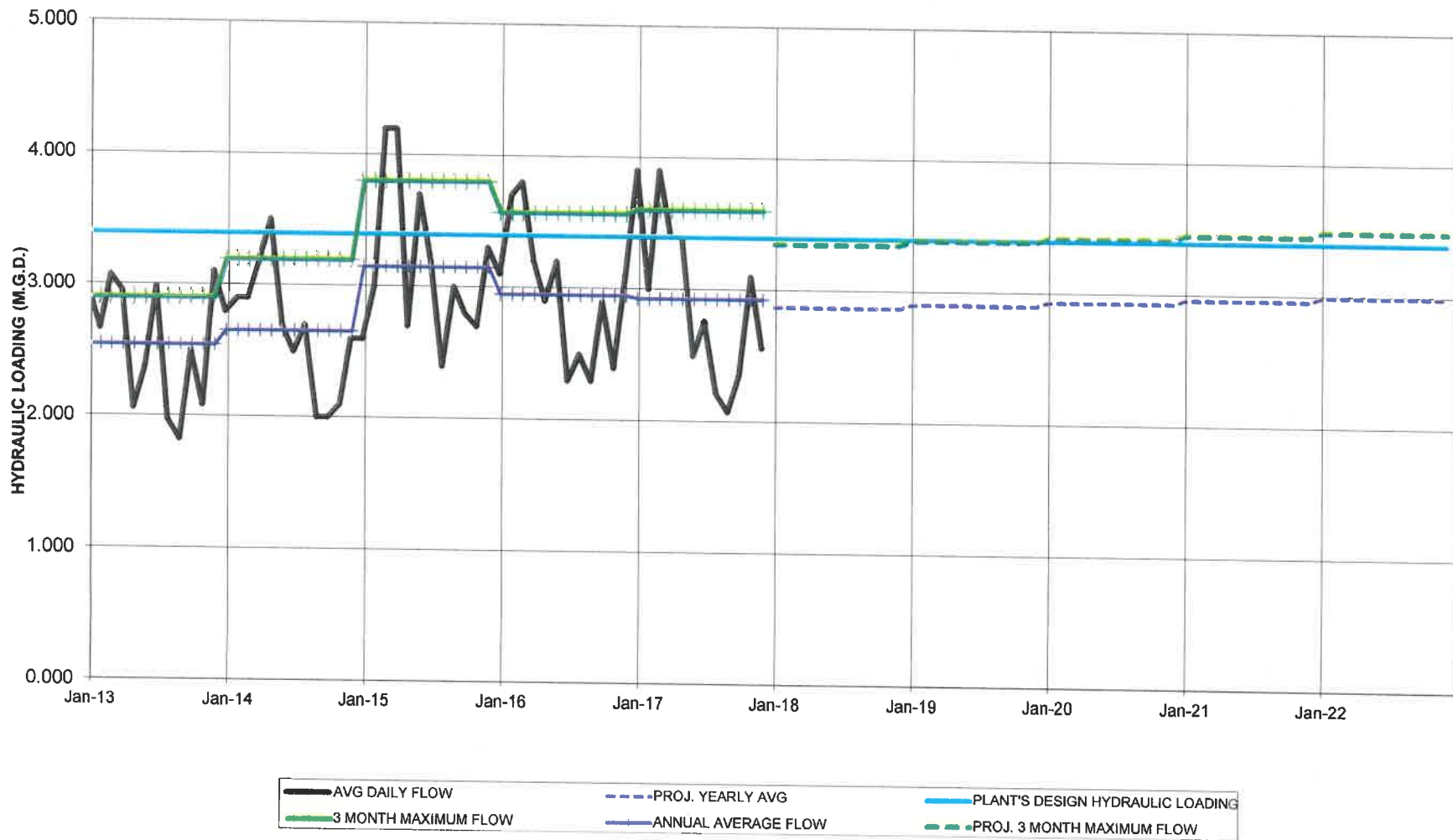
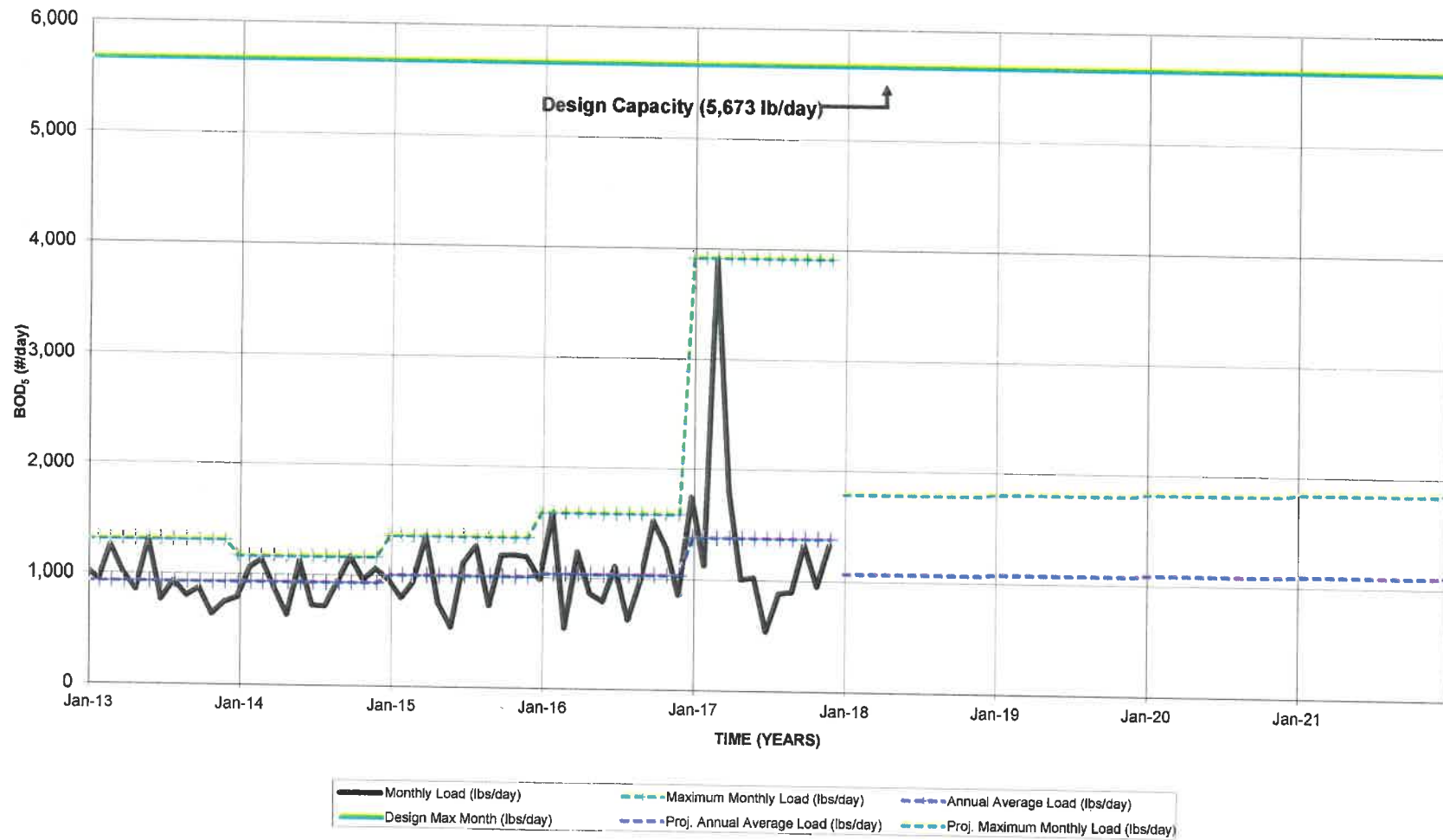


FIGURE 2
ORGANIC LOADING GRAPH
MWAA WASTEWATER TREATMENT PLANT



FINANCIAL MANAGEMENT APPENDIX

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
WATER FUND
BUDGET VS ACTUAL**

		2017 Budget	2017 Actual	2018 Budget	YTD As Of 8-31-18	2019 Budget
Revenue						
<u>Metered Sales</u>						
01.01. 430110	Metered Sales - Domestic	\$2,850,000.00	\$2,954,894.83	\$2,878,500.00	\$2,180,910.22	\$2,878,500.00
01.01. 430120	Metered Sales - Commercial	\$550,000.00	\$490,159.78	\$555,500.00	\$279,316.62	\$440,000.00
01.01. 430130	Metered Sales - Industrial	\$545,000.00	\$563,653.62	\$550,450.00	\$374,304.57	\$550,450.00
	Subtotal	\$3,945,000.00	\$4,008,708.23	\$3,984,450.00	\$2,834,531.41	\$3,868,950.00
<u>Fire Protection</u>						
01.01. 430410	Private Fire Protection	\$20,000.00	\$24,226.82	\$20,000.00	\$17,932.67	\$20,000.00
01.01. 430420	Public Fire Protection	\$290,000.00	\$229,443.32	\$265,000.00	\$26,045.80	\$45,000.00
	Subtotal	\$310,000.00	\$253,670.14	\$285,000.00	\$43,978.47	\$65,000.00
<u>Other Water Sales</u>						
01.01. 430610	Sales to Public Authority	\$60,000.00	\$67,034.16	\$60,600.00	\$55,104.58	\$60,600.00
	Subtotal	\$60,000.00	\$67,034.16	\$60,600.00	\$55,104.58	\$60,600.00
<u>Miscellaneous Revenue</u>						
01.01. 431210	Customer Penalties	\$75,000.00	\$92,500.31	\$75,000.00	\$63,785.00	\$75,000.00
01.01. 412520	Miscellaneous Water Revenue	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
01.01. 431230	Water Tap Fees	\$0.00	\$18,425.00	\$0.00	\$5,000.00	\$0.00
01.01. 431240	Turn on Charges & NSF Charge	\$5,000.00	\$5,312.42	\$5,000.00	\$4,274.00	\$5,000.00
	Subtotal	\$80,000.00	\$116,237.73	\$80,000.00	\$73,059.00	\$80,000.00
<u>Misc Non-Operating Revenue</u>						
01.01. 432010	Revenue from Frozen Meters	\$500.00	\$2,467.75	\$500.00	\$2,565.51	\$500.00
01.01. 432610	Misc Non-Operating Revenue	\$15,000.00	\$20,395.33	\$15,000.00	\$15,666.60	\$15,000.00
01.01. 432630	Employee Contribution	\$53,040.00	\$44,900.00	\$38,870.00	\$32,880.00	\$41,860.00
	Subtotal	\$68,540.00	\$67,763.08	\$54,370.00	\$51,112.11	\$57,360.00
	Total Revenue	\$4,463,540.00	\$4,513,413.34	\$4,464,420.00	\$3,057,785.57	\$4,131,910.00
Expenses						
<u>Power and Pumping</u>						
01.01. 542210	Non-Salary Compensation / Meals	\$10,000.00	\$1,060.68	\$1,500.00	\$637.95	\$1,500.00
01.01. 542410	Supplies and Expenses	\$10,000.00	\$12,508.44	\$15,000.00	\$13,563.99	\$20,000.00
01.01. 542610	Maintenance of Structures and Improvements	\$25,000.00	\$515.00	\$5,000.00	\$0.00	\$5,000.00
01.01. 542710	Maintenance of Power and Pumping Equip	\$25,000.00	\$24,874.38	\$40,000.00	\$8,400.00	\$40,000.00
01.01. 542910	Utility - Power - Wells	\$6,000.00	\$698.25	\$6,000.00	\$985.19	\$6,000.00
01.01. 542920	Power- Soft. Plant		\$0.00	\$0.00	\$0.00	\$0.00
01.01. 544910	Utility- Gas/Plant		\$0.00	\$0.00	\$0.00	\$0.00
01.01. 542930	Utility - Power - Collector Well	\$42,000.00	\$39,806.82	\$45,000.00	\$19,484.44	\$45,000.00
01.01. 542950	Utility - Power - Ranney Well	\$63,000.00	\$60,813.67	\$63,000.00	\$39,864.35	\$63,000.00
01.01. 542960	Utility - Power - Booster Station	\$15,000.00	\$22,602.36	\$30,000.00	\$6,498.78	\$25,000.00
01.01. 542970	Utility - Power - Raccoon Township	\$25,000.00	\$3,939.52	\$5,000.00	\$12,163.68	\$15,000.00
01.01. 542980	Utility - Power - West Reservoir / Jail	\$250.00	\$285.48	\$300.00	\$184.95	\$300.00
	Subtotal	\$221,250.00	\$167,104.60	\$210,800.00	\$101,783.33	\$220,800.00
<u>Purification and Lab</u>						
01.01. 544210	Operations Salaries	\$285,000.00	\$185,157.68	\$343,360.00	\$141,241.32	\$364,615.00
01.01. 544220	Water Testing	\$15,000.00	\$10,137.58	\$15,000.00	\$7,338.76	\$15,000.00
01.01. 544310	Supplies - Salt	\$150,000.00	\$120,129.38	\$150,000.00	\$88,814.94	\$150,000.00
01.01. 544320	Supplies - Chlorine	\$8,000.00	\$9,487.42	\$9,000.00	\$11,817.75	\$18,000.00
01.01. 544325	Supplies - Buffer	\$0.00	\$439.72	\$0.00	\$448.44	\$0.00
01.01. 544410	Outside Services	\$15,000.00	\$49,530.32	\$30,000.00	\$17,466.27	\$30,000.00
01.01. 544510	Maintenance of Structures and Improvements	\$25,000.00	\$9,233.26	\$5,000.00	\$40,482.02	\$5,000.00
01.01. 544710	Maintenance of Backwash	\$2,500.00	\$352.32	\$2,500.00	\$0.00	\$2,500.00
01.01. 544610	Maintenance of Equipment	\$100,000.00	\$121,187.25	\$100,000.00	\$67,027.52	\$100,000.00
01.01. 542920	Utility - Power	\$250,000.00	\$260,176.87	\$200,000.00	\$187,056.25	\$280,000.00
01.01. 544910	Utility - Gas	\$7,500.00	\$4,797.34	\$7,500.00	\$4,870.35	\$8,500.00
	Subtotal	\$858,000.00	\$770,629.14	\$862,360.00	\$566,563.62	\$973,615.00

		2017 Budget	2017 Actual	2018 Budget	YTD As Of 8-31-18	2019 Budget
<u>Transmission and Distribution</u>						
01.01. 545210	Operations Salaries	\$268,000.00	\$389,759.70	\$306,030.00	\$271,464.63	\$386,580.00
01.01. 545215	Outside Services	\$75,000.00	\$183,040.33	\$125,000.00	\$51,330.81	\$125,000.00
01.01. 545310	Maintenance of Lines	\$250,000.00	\$144,729.48	\$250,000.00	\$93,986.67	\$250,000.00
01.01. 545920	Maintenance of Meters	\$75,000.00	\$36,894.64	\$50,000.00	\$37,513.49	\$50,000.00
01.01. 545930	Maintenance of Hydrants	\$25,000.00	\$15,664.65	\$10,000.00	\$8,653.65	\$10,000.00
01.01. 545710	Maintenance of Structures and Improvements	\$25,000.00	\$5,487.96	\$10,000.00	\$24.84	\$10,000.00
	Subtotal	\$718,000.00	\$775,576.76	\$751,030.00	\$462,974.09	\$831,580.00
<u>Vehicles and Equipment</u>						
01.01. 546010	Rentals	\$2,000.00	\$100.00	\$1,000.00	\$3,700.00	\$6,400.00
01.01. 546110	Purchase	\$25,000.00	\$29,226.11	\$8,820.00	\$0.00	\$40,000.00
01.01. 546145	Maintenance	\$25,000.00	\$20,386.00	\$15,000.00	\$10,222.33	\$20,000.00
01.01. 546155	Fuel	\$20,000.00	\$17,787.60	\$20,000.00	\$10,126.53	\$20,000.00
	New Trucks #37 & #39		\$22,406.81	\$0.00	\$0.00	\$0.00
	Subtotal	\$72,000.00	\$89,906.52	\$44,820.00	\$24,048.86	\$86,400.00
<u>General Administration</u>						
01.01. 549010	Board Salaries	\$0.00	\$2,600.00	\$3,000.00	\$0.00	\$3,000.00
01.01. 549110	Office Salaries	\$90,000.00	\$86,511.72	\$111,410.00	\$62,811.66	\$94,370.00
01.01. 549020	Manager's Salary	\$84,000.00	\$74,776.98	\$47,500.00	\$32,882.40	\$82,500.00
01.01. 549310	Office Supplies and Expenses	\$30,000.00	\$26,628.20	\$30,000.00	\$14,828.47	\$30,000.00
01.01. 549410	Real Estate Taxes / Sohn Road	\$225.00	\$171.75	\$225.00	\$176.89	\$225.00
01.01. 549510	Auditor	\$4,000.00	\$3,392.00	\$4,000.00	\$3,542.00	\$3,500.00
01.01. 549890	Solicitor - Retainer	\$6,500.00	\$5,206.25	\$7,200.00	\$2,600.00	\$3,900.00
01.01. 549870	Solicitor - Expenses	\$9,000.00	\$0.00	\$6,000.00	\$10,206.25	\$6,000.00
01.01. 549610	Engineer - Retainer	\$1,200.00	\$1,100.00	\$1,200.00	\$700.00	\$1,200.00
01.01. 549620	Engineer - Expenses	\$20,000.00	\$42,732.71	\$35,000.00	\$30,709.96	\$35,000.00
01.01. 549720	Insurance - General Liability	\$25,000.00	\$21,234.00	\$25,000.00	\$0.00	\$25,500.00
01.01. 549730	Insurance - Workmen's Compensation	\$21,500.00	\$33,151.20	\$26,300.00	\$11,404.40	\$24,500.00
01.01. 549770	Insurance - Property / Equipment	\$16,000.00	\$17,792.50	\$17,900.00	\$13,633.50	\$18,500.00
01.01. 549810	Insurance - Bonds	\$0.00	\$300.00	\$300.00	\$300.00	\$300.00
01.01. 549820	Insurance Retirement	\$0.00	\$28,360.64	\$0.00	\$16,406.02	\$0.00
01.01. 549830	Hospitalization / Health Insurance	\$315,000.00	\$331,547.92	\$251,340.00	\$223,222.99	\$275,600.00
01.01. 549840	Employees Pension	\$104,000.00	\$93,512.78	\$88,440.00	\$68,162.93	\$93,600.00
01.01. 549841	Utilities - Telephone	\$6,000.00	\$5,700.86	\$6,000.00	\$3,627.04	\$6,000.00
01.01. 549845	Utilities - Power	\$5,000.00	\$5,147.84	\$5,000.00	\$2,752.44	\$5,000.00
01.01. 549855	Utilities - Gas	\$3,400.00	\$4,244.58	\$5,000.00	\$5,775.95	\$8,000.00
01.01. 549865	Utilities - Cellular	\$2,500.00	\$2,505.79	\$3,000.00	\$1,508.75	\$3,000.00
01.01. 549880	Postage	\$11,000.00	\$12,290.86	\$13,000.00	\$7,344.34	\$13,000.00
01.01. 549885	Uniforms / Clothing Allowance	\$5,000.00	\$10,465.95	\$12,000.00	\$8,693.04	\$14,000.00
01.01. 549895	Dues, Memberships, Subscriptions	\$1,600.00	\$3,735.00	\$3,500.00	\$3,084.50	\$5,000.00
01.01. 549905	Software	\$6,000.00	\$0.00	\$6,000.00	\$5,327.25	\$9,000.00
01.01. 549925	Office Equipment	\$2,500.00	\$589.50	\$2,500.00	\$0.00	\$2,500.00
01.01. 549920	Travel and Education	\$1,500.00	\$609.00	\$1,500.00	\$2,223.73	\$4,000.00
01.01. 549850	Miscellaneous General Expenses	\$25,000.00	\$27,049.71	\$25,000.00	\$11,454.86	\$25,000.00
01.01. 549860	Maintenance - Property	\$7,000.00	\$0.00	\$5,000.00	\$42.48	\$5,000.00
	Subtotal	\$802,925.00	\$841,357.74	\$742,315.00	\$543,421.85	\$797,195.00
<u>Capital Improvements</u>						
01.01. 545970	Capital Improvements	\$521,521.70	\$270,367.50	\$1,661,662.00	\$261,165.10	\$419,244.00
01.01.	Capital Improvements - Raccoon	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	Subtotal	\$521,521.70	\$270,367.50	\$1,661,662.00	\$261,165.10	\$419,244.00
<u>Debt Service</u>						
	2017 Bond Issue			\$174,030.00	\$40,765.13	\$530,531.00
	New Bond Issue			\$0.00	\$0.00	\$199,538.00
01.01. 549915	Debt Service Coverage	\$89,358.60	\$0.00	\$17,403.00	\$0.00	\$73,007.00
	Subtotal	\$1,269,843.30	\$903,840.48	\$191,433.00	\$40,765.13	\$803,076.00
Total Expenses		\$4,463,540.00	\$3,818,782.74	\$4,464,420.00	\$2,000,721.98	\$4,131,910.00
Net Income		\$0.00	\$694,630.60	\$0.00	\$1,057,063.59	\$0.00

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
SEWER FUND
BUDGET VS ACTUAL**

		2017 Budget	2017 Actuals	2018 Budget	YTD As Of 8-31-18	2019 Budget
Revenue						
<u>Metered Sales</u>						
01.02. 430110	Metered Sales - Domestic	\$875,000.00	\$846,065.20	\$1,120,818.50	\$772,371.25	\$1,453,338.00
01.02. 430120	Metered Sales - Commercial	\$205,000.00	\$131,349.45	\$277,493.50	\$83,449.05	\$167,144.00
01.02. 430130	Metered Sales - Industrial	\$30,000.00	\$8,120.74	\$58,007.89	\$14,108.88	\$26,838.00
01.02. 430140	Sales to Public Agencies	\$165,000.00	\$94,181.00	\$231,234.00	\$42,269.01	\$82,005.00
	Subtotal	\$1,275,000.00	\$1,079,716.39	\$1,687,553.89	\$912,198.19	\$1,729,325.00
<u>Public Authorities</u>						
01.02. 430610	Sales to Public Authorities (Hopewell)	\$470,000.00	\$432,966.10	\$378,299.11	\$295,404.09	\$378,299.00
	Subtotal	\$470,000.00	\$432,966.10	\$378,299.11	\$295,404.09	\$378,299.00
<u>Miscellaneous Revenue</u>						
01.02. 431110	Customer Penalties	\$35,000.00	-\$563.93	\$35,000.00	\$27,936.73	\$35,000.00
01.02. 431620	Sewer Tap Fees	\$0.00	\$10,069.08	\$0.00	\$1,000.00	\$0.00
01.02. 431630	Employee Contribution	\$12,480.00	\$12,360.00	\$32,110.00	\$8,800.00	\$34,580.00
	Subtotal	\$47,480.00	\$21,865.15	\$67,110.00	\$37,736.73	\$69,580.00
	Total Revenue	\$1,792,480.00	\$1,534,547.64	\$2,132,963.00	\$1,245,339.01	\$2,177,204.00
Expenses						
<u>Collection System</u>						
01.02. 540510	Maintenance of Collection System	\$55,000.00	\$48,889.17	\$55,000.00	\$29,338.84	\$50,000.00
01.02. 544515	Outside Services	\$50,000.00	\$35,377.84	\$50,000.00	\$48,569.86	\$50,000.00
	Subtotal	\$105,000.00	\$84,267.01	\$105,000.00	\$77,908.70	\$100,000.00
<u>Treatment Plant and Pump Stations</u>						
01.02. 542410	Utilities - Power - Treatment Plant	\$41,000.00	\$33,511.94	\$40,000.00	\$23,531.01	\$40,000.00
01.02. 542420	Utilities - Power - West LS	\$1,700.00	\$1,400.66	\$1,500.00	\$985.94	\$1,500.00
01.02. 542430	Utilities - Power - Wye LS	\$42,000.00	\$39,906.06	\$45,000.00	\$28,641.62	\$45,000.00
01.02. 542440	Utilities - Power - Golf Course LS	\$3,000.00	\$1,981.89	\$3,000.00	\$1,699.89	\$3,000.00
01.02. 545710	Utility - Gas - Treatment Plant	\$18,000.00	\$14,391.35	\$18,000.00	\$11,246.74	\$18,000.00
01.02. 542450	Utilities - Power - Steel Street LS	\$150.00	\$0.00	\$150.00	\$0.00	\$150.00
01.02. 542460	Utilities - Power - Jail LS	\$1,500.00	\$1,371.76	\$1,500.00	\$1,191.80	\$2,000.00
01.02. 542510	SUPPLIES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
01.02. 542710	Non-Salary Compensation / Meals	\$800.00	\$340.00	\$10,000.00	\$835.00	\$1,500.00
01.02. 542810	Maintenance of Pump Stations	\$20,000.00	\$20,929.53	\$20,000.00	\$50,146.02	\$15,000.00
01.02. 544210	Operations Salaries	\$305,000.00	\$262,763.97	\$301,430.00	\$156,205.41	\$274,220.00
01.02. 544220	Testing / Sampling	\$17,000.00	\$13,535.63	\$15,000.00	\$9,465.48	\$15,000.00
01.02. 544310	Supplies	\$20,000.00	\$6,154.03	\$10,000.00	\$3,959.77	\$10,000.00
01.02. 544320	Chlorine	\$10,000.00	\$4,648.50	\$10,000.00	\$5,015.36	\$10,000.00
01.02. 545215	Outside Services	\$5,000.00	\$30,554.50	\$30,000.00	\$496.01	\$15,000.00
01.02. 544510	Maintenance of Structures	\$1,000.00	\$0.00	\$1,000.00	\$112.38	\$1,000.00
01.02. 544610	Maintenance of Plant Equipment	\$25,000.00	\$18,826.59	\$25,000.00	\$490.31	\$20,000.00
01.02. 544710	Sludge Processing and Disposal	\$17,500.00	\$46,082.83	\$17,500.00	\$0.00	\$45,000.00
	Subtotal	\$528,650.00	\$496,399.24	\$549,080.00	\$294,022.74	\$516,370.00

		2017 Budget	2017 Actuals	2018 Budget	YTD As Of 8-31-18	2019 Budget
<u>Vehicles and Equipment</u>						
	Purchase			\$30,000.00	\$0.00	\$0.00
01.02. 546010	Rentals	\$500.00	\$0.00	\$500.00	\$3,600.00	\$5,900.00
01.02. 546145	Maintenance	\$7,500.00	\$19,620.75	\$5,000.00	\$14,152.80	\$7,500.00
01.02. 546155	Fuel	\$3,000.00	\$3,056.45	\$3,000.00	\$1,933.20	\$3,000.00
	Subtotal	\$26,000.00	\$74,310.11	\$38,500.00	\$19,686.00	\$16,400.00
<u>General Administration</u>						
01.02. 549010	Board Salaries	\$0.00	\$2,600.00	\$3,000.00	\$0.00	\$3,000.00
01.02. 549110	Office Salaries	\$107,000.00	\$86,511.59	\$111,410.00	\$62,811.64	\$94,370.00
01.02. 549120	Manager's Salary	\$84,000.00	\$74,776.98	\$47,500.00	\$32,882.40	\$82,500.00
01.02. 549310	Office Supplies and Expenses	\$30,000.00	\$19,943.95	\$20,000.00	\$10,113.64	\$20,000.00
01.02. 549510	Auditor	\$4,000.00	\$3,392.00	\$3,500.00	\$3,542.00	\$3,500.00
01.02. 549610	Engineer - Retainer	\$1,200.00	\$1,100.00	\$1,200.00	\$700.00	\$1,200.00
01.02. 549620	Engineer - Expenses	\$35,000.00	\$17,468.41	\$25,000.00	\$10,095.65	\$20,000.00
01.02. 549720	Insurance - General Liability	\$25,000.00	\$21,234.00	\$25,000.00	\$0.00	\$25,500.00
01.02. 549730	Insurance - Workmen's Compensation	\$21,500.00	\$22,100.80	\$21,900.00	\$9,715.60	\$24,500.00
01.02. 549770	Insurance - Property / Equipment	\$16,000.00	\$16,826.82	\$17,900.00	\$10,353.50	\$18,500.00
01.02. 549820	Insurance Retirement	\$0.00	\$12,154.56	\$0.00	\$7,031.15	\$0.00
01.02. 549830	Hospitalization / Health Insurance	\$315,000.00	\$105,985.41	\$213,500.00	\$71,611.48	\$234,600.00
01.02. 549840	Employees Pension	\$78,000.00	\$30,419.82	\$81,160.00	\$18,026.56	\$85,800.00
01.02. 549841	Utilities - Telephone	\$15,000.00	\$15,901.47	\$15,000.00	\$10,211.67	\$15,000.00
01.02. 549850	Miscellaneous General Expenses	\$7,000.00	\$9,855.05	\$8,000.00	\$8,248.84	\$8,000.00
01.02. 549855	Utilities - Gas	\$3,400.00	\$0.00	\$3,400.00	\$0.00	\$5,000.00
01.02. 549865	Utilities - Cellular	\$2,500.00	\$2,505.74	\$3,000.00	\$1,508.71	\$2,000.00
01.02. 549885	Uniforms / Clothing Allowance	\$1,500.00	\$3,675.17	\$4,500.00	\$3,906.90	\$5,000.00
01.02. 549860	Maintenance - Property	\$15,000.00	\$3,162.51	\$5,000.00	\$48,354.28	\$15,000.00
01.02. 549880	Postage	\$8,100.00	\$12,223.89	\$13,000.00	\$6,807.13	\$13,000.00
01.02. 549895	Dues, Memberships, Subscriptions	\$500.00	\$0.00	\$500.00	\$514.50	\$1,000.00
01.02. 549905	Software	\$6,000.00	\$0.00	\$6,000.00	\$5,327.25	\$7,000.00
01.02. 549920	Travel and Education	\$1,000.00	\$206.50	\$1,000.00	\$355.00	\$1,000.00
01.02. 549925	Office Equipment	\$2,500.00	\$589.48	\$2,500.00	\$0.00	\$2,500.00
01.02. 549420	Solicitor - Expenses	\$6,000.00	\$0.00	\$5,000.00	\$8,206.25	\$6,000.00
01.02. 549890	Solicitor - Retainer	\$7,200.00	\$4,943.75	\$3,900.00	\$2,600.00	\$3,900.00
	Subtotal	\$792,400.00	\$467,577.90	\$641,870.00	\$332,924.15	\$697,870.00
<u>Capital Improvements</u>						
01.02. 540620	Capital Improvements	\$140,000.00	\$65,237.08	\$607,080.00	\$82,930.12	\$43,488.00
	Subtotal	\$140,000.00	\$65,237.08	\$607,080.00	\$82,930.12	\$43,488.00
<u>Debt Service</u>						
	2017 Bond Issue			\$174,030.00	\$40,765.12	\$530,531.00
	New Bond Issue			\$0.00	\$0.00	\$199,538.00
01.02. 549915	Debt Service Coverage	\$17,500.00	\$0.00	\$17,403.00	\$0.00	\$73,007.00
	Subtotal	\$194,398.70	\$429,261.92	\$191,433.00	\$40,765.12	\$803,076.00
Total Expenses		\$1,786,448.70	\$1,617,053.26	\$2,132,963.00	\$848,236.83	\$2,177,204.00
Net Income		\$6,031.30	-\$82,505.62	\$0.00	\$397,102.18	\$0.00

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
DEBT SERVICE COVERAGE FACTOR CALCULATOR
2017 ACTUAL BUDGET**

	<u>REVENUES</u>	<u>EXPENSES</u> ⁽¹⁾	NET INCOME / (LOSS)
WATER	\$ 4,513,413	\$ 2,914,942	\$ 1,598,471
SEWER	\$ 1,534,548	\$ 1,187,791	\$ 346,756
	\$ 6,047,961	\$ 4,102,734	\$ 1,945,227

DEBT SERVICES:

2017 Debt Service Payments

2016 Payments

\$ 1,333,102

TOTAL ANNUAL DEBT SERVICE PAYMENT

\$ 1,333,102

TOTAL ANNUAL DEBT SERVICE COVERAGE ⁽²⁾

\$ 106,859

NET REVENUE ⁽³⁾

\$ 2,052,086

2017 BUDGETED COVERAGE FACTOR

1.54

REQUIRED COVERAGE FACTOR

1.10

⁽¹⁾ Excludes Depreciation and Debt Service

⁽²⁾ Debt Service Coverage for Bond Issue based on 2017 budget

⁽³⁾ Includes Net Income/(Loss) plus Debt Service Coverage

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
DEBT SERVICE COVERAGE FACTOR CALCULATOR
2018 APPROVED BUDGET**

	<u>REVENUES</u>	<u>EXPENSES</u> ⁽¹⁾	NET INCOME / (LOSS)
WATER	\$ 4,464,420	\$ 4,272,987	\$ 191,433
SEWER	\$ 2,132,963	\$ 1,941,530	\$ 191,433
	\$ 6,597,383	\$ 6,214,517	\$ 382,866

DEBT SERVICES:

2018 Debt Service Payments

2018 Payments

\$ 348,060

TOTAL ANNUAL DEBT SERVICE PAYMENT	\$ 348,060
TOTAL ANNUAL DEBT SERVICE COVERAGE ⁽²⁾	\$ 34,806
NET REVENUE ⁽³⁾	\$ 417,672
2018 BUDGETED COVERAGE FACTOR	1.20
REQUIRED COVERAGE FACTOR	1.10

⁽¹⁾ Excludes Depreciation and Debt Service

⁽²⁾ Debt Service Coverage for Bond Issue based on 2018 budget

⁽³⁾ Includes Net Income/(Loss) plus Debt Service Coverage

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
CONSULTING ENGINEER'S ANNUAL REPORT
DEBT SERVICE COVERAGE FACTOR CALCULATOR
2019 APPROVED BUDGET**

	<u>REVENUES</u>	<u>EXPENSES</u> ⁽¹⁾	NET INCOME / (LOSS)
WATER	\$ 4,131,910	\$ 3,328,834	\$ 803,076
SEWER	\$ 2,177,204	\$ 1,374,128	\$ 803,076
	\$ 6,309,114	\$ 4,702,962	\$ 1,606,152

<u>DEBT SERVICES:</u>	<u>2019 Payments</u>
2019 Debt Service Payments	\$ 1,460,138
TOTAL ANNUAL DEBT SERVICE PAYMENT	\$ 1,460,138
TOTAL ANNUAL DEBT SERVICE COVERAGE ⁽²⁾	\$ 146,014
NET REVENUE ⁽³⁾	\$ 1,752,166
2018 BUDGETED COVERAGE FACTOR	1.20
REQUIRED COVERAGE FACTOR	1.10

⁽¹⁾ Excludes Depreciation and Debt Service

⁽²⁾ Debt Service Coverage for Bond Issue based on 2019 budget

⁽³⁾ Includes Net Income/(Loss) plus Debt Service Coverage

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA

Year 2018/2019 – Schedule of Insurance

POLICY	% WATER	% SEWER	TOTAL PREMIUM AMOUNT	DATE
Selective Insurance Company – Commercial Property Policy No. 2242201	50	50	\$37,000.00	07/05/18 – 07/05/19
Selective Insurance Company – Inland Marine Policy No. 2242201	50	50	Included in Above	07/05/18 – 07/05/19
Selective Insurance Company – Crime Policy No. 2242201	50	50	Included in Above	07/05/18 – 07/05/19
State National Insurance – Auto Policy No. BPF-AU-101194-01	50	50	\$49,100.00	10/19/18 – 10/19/19
State National Insurance - Property Policy No. BPF-PK-101194-01	50	50		10/19/18 – 10/19/19
BCS Insurance Company – Cyber Policy No. RPS-P-0285408	50	50	\$1,900.00	10/19/18 – 10/19/19
Selective Insurance Company – Workers Compensation Policy No. WC 9036360	50	50	\$49,000.00	08/01/18 – 08/01/19

APPENDIX F
FINANCIAL STATEMENTS

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**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA
ALIQUIPPA, PENNSYLVANIA**

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FINANCIAL STATEMENTS

FOR THE YEAR ENDED DECEMBER 31, 2017

# **MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**

ALIQUIPPA, PENNSYLVANIA

FINANCIAL STATEMENTS

AND

WITH REPORT BY  
CERTIFIED PUBLIC ACCOUNTANT

**FOR THE YEAR ENDED  
DECEMBER 31, 2017**

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**ALIQUIPPA, PENNSYLVANIA**

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**Board of Directors  
Municipal Water Authority of Aliquippa**

**Independent Auditor's Report**

**Report on Financial Statements**

I have audited the accompanying basic financial statements of the Municipal Water Authority of Aliquippa as of and for the year ended December 31, 2017, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

**Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

**Auditor's Responsibility**

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Authority's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, I express no such opinion. An audit also includes evaluating the appropriateness of accounting principles used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

## **Opinion**

In my opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Municipal Water Authority of Aliquippa, Beaver County, Pennsylvania as of December 31, 2017 and the changes in financial position and cash flows thereof in accordance with accounting principles generally accepted in the United States of America.

## **Other Matters**

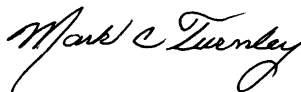
### ***Required Supplementary Information***

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages iii-vi and defined benefit trust funds' historical pension information on pages 18-20 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. I have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to my inquiries, the basic financial statements, and other knowledge I obtained during my audit of the basic financial statements. I do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### ***Other Information***

My audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise Municipal Water Authority of Aliquippa's basic financial statements. The supplementary information (Schedules 1 through 3) is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The supplementary information is the responsibility of management and was derived from and relate directly to the underlying accounting and other records use to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In my opinion, the supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.



Mark C. Turnley, CPA

August 6, 2018  
New Brighton, Pennsylvania

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA  
BEAVER COUNTY, PENNSYLVANIA  
MANAGEMENT'S DISCUSSION AND ANALYSIS (MD&A)  
Required Supplementary Information (RSI)  
December 31, 2017**

The discussion and analysis of the Municipal Water Authority of Aliquippa's financial performance provides an overall review of the Authority's financial activities for the year ended December 31, 2017. The intent of this discussion and analysis is to look at the Authority's financial performance as a whole; readers should also review the financial statements and notes to the financial statements to enhance their understanding of the Authority's financial performance.

The Management Discussion and Analysis (MD&A) is an element of the reporting model adopted by the Governmental Accounting Standards Board (GASB) in their Statement No. 34 Basic Financial Statements - and Management's Discussion and Analysis - for State and Local Governments issued June 1999.

## **FINANCIAL HIGHLIGHTS**

Key financial highlights for 2017 are as follows:

- Net position increased by \$910,996 in 2017.
- Total operating revenues were \$5,999,660 in 2017, a decrease of \$272,640 from 2016. Total operating expenses increased by \$354,502 in 2017 to \$4,567,790. Accordingly, the authority experienced a net operating gain of \$1,431,870 for 2017, which was an decrease of \$627,141.
- Water rates remained at a quarterly minimum of \$75.00 from 2016 to 2017. Quarterly sewer minimum rates remained at \$39.08 from 2016 to 2017.
- The Authority adopted the provisions of Governmental Accounting Standards Board (GASB) Statement No. 68 – “Accounting and Financial Reporting for Pensions” – during calendar year 2015. The Authority is now required to recognize an actuarially determined net pension liability on their statement of net position, along with deferred outflows and inflows related to their pension as a result of their employee pension plan. As of December 31, 2017, the net pension asset was \$1,380,176.

## **USING THE ANNUAL FINANCIAL REPORT (GASB 34)**

The Annual Financial Report consists of the Management Discussion and Analysis (this section), basic financial statements, notes to those statements and supplemental schedules (water and sewer) detailing operating expenses. The schedules compare the operating expenses with the budget and prior year amounts. The primary purposes of Municipal Water Authority of Aliquippa's basic financial statements are as follows:

- Exhibit A – Statement of Net Position – Provides a view of the financial condition of the Authority including its liquidity, capital assets, long-term debt obligations and net position. Over time, increases or decreases in the Authority's net position are an indication of whether its financial health is improving or deteriorating. To assess the overall health of the Authority, you need to consider additional non-financial factors, such as changes in the Authority's customer base and the condition of the Authority's infrastructure (sanitary sewers and water lines).
- Exhibit B – Statement of Revenues, Expenses and Changes in Net Position – Provides information with regard to the types of revenues earned and expenses incurred by the Authority on an annual basis. In addition, this statement indicates whether charges for services to customers were sufficient to meet the current operating costs, and potentially certain capital costs, necessary to operate the Authority, or whether the Authority had to draw on prior net asset reserves to meet its obligations.
- Exhibit C – Statement of Cash Flows – Provides relevant information about the cash receipts and cash payments of the Authority during the year, specifically, how much cash was generated for operating needs, and the amount of cash required for capital needs and debt service obligations.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA  
BEAVER COUNTY, PENNSYLVANIA**

**MANAGEMENT'S DISCUSSION AND ANALYSIS (MD&A)  
Required Supplementary Information (RSI)  
December 31, 2017**

**FINANCIAL ANALYSIS OF THE AUTHORITY**

A breakdown of the assets, liabilities and net position of the Authority for the years 2017 and 2016 is as follows:

|                                                                  | <b>2017</b>          | <b>2016</b>          | <b>INCREASE<br/>&lt;DECREASE&gt;</b> |
|------------------------------------------------------------------|----------------------|----------------------|--------------------------------------|
| Current Assets                                                   | \$ 3,625,533         | \$ 3,135,071         | \$ 490,462                           |
| Capital Assets                                                   | 11,021,105           | 11,174,722           | (153,617)                            |
| Restricted Assets                                                | 1,250,046            | 697,193              | 552,853                              |
| Deferred Outflows of Resources                                   | 132,466              | 26,497               | 105,969                              |
| <b>TOTAL ASSETS &amp; DEFERRED OUTFLOWS<br/>OF RESOURCES</b>     | <b>\$ 16,029,150</b> | <b>\$ 15,033,484</b> | <b>\$ 995,667</b>                    |
| Current Liabilities                                              | \$ 753,719           | \$ 1,321,918         | \$ (568,199)                         |
| Long-term Liabilities                                            | 5,425,789            | 4,926,331            | 499,458                              |
| Deferred Inflows of Resources                                    | 173,387              | 19,976               | 153,411                              |
| <b>TOTAL LIABILITIES &amp; DEFERRED INFLOWS<br/>OF RESOURCES</b> | <b>\$ 6,352,895</b>  | <b>\$ 6,268,226</b>  | <b>\$ 84,670</b>                     |
| Investment in Capital Assets                                     | \$ 4,030,140         | \$ 2,929,195         | \$ 1,100,945                         |
| Restricted for Debt Service                                      | 1,250,046            | 697,193              | 552,853                              |
| Unrestricted                                                     | 4,396,069            | 5,138,870            | (742,801)                            |
| <b>TOTAL NET POSITION</b>                                        | <b>\$ 9,676,255</b>  | <b>\$ 8,765,258</b>  | <b>\$ 910,997</b>                    |

The decrease in capital assets was due mainly to expenses related depreciation expense being more than capital purchases. There was \$655,562 in capital additions during the year. Current liabilities increased due to an in current portion of long-term debt. Long-term liabilities decreased due to a reduction in bonds and loans payable. Investment in Capital Assets (buildings, land, equipment and infrastructure) net of accumulated depreciation and related debt increased by \$1,100,945, due to an increase in bonds and loans payable.

A comparison of the Authority's revenues, expenses and changes in net position for the years 2017 and 2016 is as follows:

|                                 | <b>2017</b>         | <b>2016</b>         | <b>INCREASE<br/>&lt;DECREASE&gt;</b> |
|---------------------------------|---------------------|---------------------|--------------------------------------|
| Operating Revenues              | \$ 5,999,660        | \$ 6,272,300        | \$ (272,640)                         |
| Operating Expenses              | 4,567,790           | 4,213,288           | 354,502                              |
| <b>NET OPERATING INCOME</b>     | <b>\$ 1,431,870</b> | <b>\$ 2,059,012</b> | <b>\$ (627,142)</b>                  |
| NonOperating Revenues           | \$ 87,630           | \$ 91,591           | \$ (3,961)                           |
| NonOperating Expenses           | 608,502             | 463,251             | 145,251                              |
| <b>NET NONOPERATING REVENUE</b> | <b>\$ (520,874)</b> | <b>\$ (371,660)</b> | <b>\$ (149,212)</b>                  |
| <b>CHANGE IN NET ASSETS</b>     | <b>\$ 910,996</b>   | <b>\$ 1,687,351</b> | <b>\$ (776,354)</b>                  |

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA  
BEAVER COUNTY, PENNSYLVANIA**

**MANAGEMENT'S DISCUSSION AND ANALYSIS (MD&A)  
Required Supplementary Information (RSI)  
December 31, 2017**

**FINANCIAL ANALYSIS OF THE AUTHORITY (Continued)**

Actual water and sewer usage charges, a major component of operating revenues, decreased in 2017 by \$285,127 (4.7%), due to a decrease in consumption. In addition to water and sewer usage charges, operating revenue also contains penalties, water and sewer tap-in fees, and other miscellaneous water and sewer operating fees. Other operating revenues increased by \$12,487 from 2016 to 2017.

Non-Operating revenues decreased slightly by \$3,960. The increase in non-operating expenses is mainly attributable to bond issuance costs related to the issuance of Water and Sewer Revenue Bonds, Series of 2017.

A comparison of the operating expenses of the Authority for 2016 and 2017 is as follows:

|                                 | <b>2017</b>         | <b>2016</b>         | <b>INCREASE<br/>&lt;DECREASE&gt;</b> |
|---------------------------------|---------------------|---------------------|--------------------------------------|
| Source of Supply                | \$ 91,351           | \$ 34,187           | \$ 57,164                            |
| Power and Pumping               | 533,713             | 571,102             | (37,389)                             |
| Purification and Laboratory     | 508,071             | 382,760             | 125,311                              |
| Sewage Treatment                | 450,961             | 268,600             | 182,361                              |
| Transmission and Distribution   | 808,939             | 796,433             | 12,506                               |
| General and Administrative      | 1,365,576           | 1,366,318           | (742)                                |
| Depreciation                    | 809,179             | 793,888             | 15,291                               |
| <b>TOTAL OPERATING EXPENSES</b> | <b>\$ 4,567,790</b> | <b>\$ 4,213,288</b> | <b>\$ 354,502</b>                    |

**CAPITAL ASSET AND DEBT ADMINISTRATION**

**CAPITAL ASSETS**

At December 31, 2017, the Authority had \$11,021,105 invested in capital assets, including land, treatment plant, furniture and equipment and vehicles net of depreciation. This amount represents a net decrease (including additions, deletions, adjustments and depreciation) of \$153,617, or approximately 1.37% from last year. The Authority had \$655,562 in capital additions during the 2017 year which meters and hydrants, and various other capital expenses.

A summary of the Authority's capital assets net of accumulated depreciation for the past two years is as follows:

|                                      | <b>2017</b>          | <b>2016</b>          | <b>INCREASE<br/>&lt;DECREASE&gt;</b> |
|--------------------------------------|----------------------|----------------------|--------------------------------------|
| Wastewater Treatment Plant           | \$ 26,317,774        | \$ 25,827,896        | \$ 489,878                           |
| Water Plant                          | 27,671,892           | 27,304,852           | 367,040                              |
| Metering Project                     | 3,703,655            | 3,703,655            | -                                    |
| Administration Furniture & Equipment | 2,438,457            | 2,438,457            | -                                    |
| Work in Progress                     | 205,570              | 406,926              | (201,356)                            |
|                                      | \$ 60,337,348        | \$ 59,681,786        | \$ 655,562                           |
| Accumulated Depreciation             | (49,316,243)         | (48,507,064)         | (809,179)                            |
|                                      | <b>\$ 11,021,105</b> | <b>\$ 11,174,722</b> | <b>\$ (153,617)</b>                  |



**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA  
BEAVER COUNTY, PENNSYLVANIA**

**MANAGEMENT'S DISCUSSION AND ANALYSIS (MD&A)  
Required Supplementary Information (RSI)  
December 31, 2017**

**CAPITAL ASSET AND DEBT ADMINISTRATION (Continued)**

**DEBT ADMINISTRATION**

As of December 31, 2017, the Authority had total indebtedness outstanding of \$7,020,000. The Authority's debt obligation is comprised of one Water and Sewer Revenue Bond issue (2017) as follows:

On October 12, 2017, the Authority issued Water and Sewer Revenue Bonds - Series of 2017 in the amount of \$7,020,000. Proceeds from the issue will be used to provide funds for various capital projects of the Authority, to refund, on a current refunding basis, the Authority's Water and Sewer Revenue Bonds – Series of 1998, to refund, on a current refunding basis, the Authority's Pennvest Note, to refund on an advanced refunding basis, the Authority's Water and Sewer Revenue Bonds – Series of 2013, and to pay the costs of issuing and insuring the bonds. The bonds were issued in denominations of \$5,000 with interest payable on May 15 and November 15 each year through maturity. Interest rates range between 1.08% and 2.25% with the bonds maturing on May 15, 2026. The bonds provide for early redemption options for those bonds maturing on or after November 15, 2023 as detailed in the official statement of issue. The bonds are issued pursuant to the Trust Indenture dated March 15, 1994 as supplemented by a First Supplemental Trust Indenture dated as of June 1, 1995, the Second Supplemental Trust Indenture dated as of August 15, 1998, the Third Supplemental Trust Indenture dated August 15, 2003, and the Fourth Supplemental Trust Indenture dated April 18, 2013. The bonds are limited obligations of the Authority payable solely from the receipts and revenues of the Authority pledged under the Indenture.

The Authority is scheduled to make principal and interest payments on their bond obligation of approximately \$348,061 during the 2018 calendar year.

**ECONOMIC FACTORS**

Economic conditions in the Beaver County area have improved some during 2017.

**CONTACTING THE AUTHORITY FINANCIAL MANAGEMENT**

Our financial report is designed to provide our customers, investors and creditors with a general overview of the Authority's finances and to show the Board of Directors' accountability for the money they administer on behalf of the communities served by the Municipal Water Authority of Aliquippa. If you have questions about this report or wish to request additional financial information, please contact the Municipal Water Authority of Aliquippa offices at 160 Hopewell Avenue, Aliquippa, PA 15001, (724)-375-5525.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**STATEMENT OF NET POSITION**  
**DECEMBER 31,**

|                                                                          |                             |
|--------------------------------------------------------------------------|-----------------------------|
| <b>ASSETS AND DEFERRED OUFLOW OF RESOURCES:</b>                          | <b>2017</b>                 |
| <b><u>CURRENT ASSETS</u></b>                                             |                             |
| Cash and Cash Equivalents                                                | \$ 1,978,884                |
| Receivables (net of doubtful accounts)                                   | 916,263                     |
| Accrued Utility Revenues                                                 | 541,170                     |
| Inventory - Plant Materials                                              | 150,000                     |
| Prepaid Expenses                                                         | 39,216                      |
| <b>TOTAL CURRENT ASSETS</b>                                              | <b><u>\$ 3,625,533</u></b>  |
| <b><u>RESTRICTED ASSETS</u></b>                                          |                             |
| Investments                                                              | \$ 1,250,046                |
| <b>TOTAL RESTRICTED ASSETS</b>                                           | <b><u>\$ 1,250,046</u></b>  |
| <b><u>PROPERTY AND EQUIPMENT</u></b>                                     |                             |
| Investment in Facilities                                                 | \$ 60,131,778               |
| Work in Progress                                                         | 205,570                     |
| Less: Accumulated Depreciation                                           | (49,316,243)                |
| <b>TOTAL NET PROPERTY, PLANT AND EQUIPMENT</b>                           | <b><u>\$ 11,021,105</u></b> |
| <b><u>DEFERRED OUTFLOW OF RESOURCES</u></b>                              |                             |
| Deferred Outflow Related to Pension                                      | \$ 132,466                  |
| <b>TOTAL DEFERRED OUTFLOW OF RESOURCES</b>                               | <b><u>\$ 132,466</u></b>    |
| <b>TOTAL ASSETS &amp; DEFERRED OUTFLOW OF RESOURCES</b>                  | <b><u>\$ 16,029,150</u></b> |
| <b>LIABILITIES, DEFERRED INFLOW OF RESOURCES, AND NET POSITION:</b>      |                             |
| <b><u>CURRENT LIABILITIES</u></b>                                        |                             |
| Accounts Payable                                                         | \$ 403,404                  |
| Payroll Withholding                                                      | 5,372                       |
| Customer Deposits                                                        | 139,560                     |
| Accrued Interest Payable - Bonds                                         | 20,383                      |
| Current Portion - Long Term Debt                                         | 185,000                     |
| <b>TOTAL CURRENT LIABILITIES</b>                                         | <b><u>\$ 753,719</u></b>    |
| <b><u>LONG-TERM LIABILITIES</u></b>                                      |                             |
| Revenue Bonds Payable - Series of 2017                                   | \$ 7,020,000                |
| Unamortized Bond Premium - Series of 2017                                | 125,060                     |
| Net Pension Liability (Asset)                                            | (1,380,176)                 |
|                                                                          | <u>\$ 5,764,884</u>         |
| Less: Current Portion Long Term Debt                                     | (185,000)                   |
|                                                                          | <u>\$ 5,579,884</u>         |
| Less: Unamortized Loss on Early Retirement of Debt                       | (154,095)                   |
| <b>TOTAL LONG TERM DEBT AND OTHER LIABILITIES</b>                        | <b><u>\$ 5,425,789</u></b>  |
| <b><u>DEFERRED INFLOW OF RESOURCES</u></b>                               |                             |
| Deferred Inflow Related to Pension                                       | \$ 173,387                  |
| <b>TOTAL DEFERRED INFLOW OF RESOURCES</b>                                | <b><u>\$ 173,387</u></b>    |
| <b>NET POSITION:</b>                                                     |                             |
| Net Investment in Capital Assets                                         | \$ 4,030,140                |
| Restricted                                                               | 1,250,046                   |
| Unrestricted                                                             | 4,396,069                   |
| <b>TOTAL NET POSITION</b>                                                | <b><u>\$ 9,676,255</u></b>  |
| <b>TOTAL LIABILITIES, DEFERRED INFLOW OF RESOURCES, AND NET POSITION</b> | <b><u>\$ 16,029,150</u></b> |

The accompanying notes are an integral part of these financial statements

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION**  
**FOR THE YEAR ENDED DECEMBER 31, 2017**

|                                                     | <b><u>WATER</u></b>            | <b><u>SEWER</u></b>            | <b><u>TOTAL</u></b>            |
|-----------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|
| <b><u>OPERATING REVENUES:</u></b>                   |                                |                                |                                |
| Domestic consumer                                   | \$ 2,984,349                   | \$ 863,496                     | \$ 3,847,845                   |
| Commercial consumer                                 | 478,844                        | 128,423                        | 607,267                        |
| Industrial consumer                                 | 563,654                        | 8,121                          | 571,774                        |
| Sales to public                                     | -                              | 88,836                         | 88,836                         |
| Fire protection                                     | 232,332                        | -                              | 232,332                        |
| Sales to public authorities and other utilities     | 67,034                         | 423,651                        | 490,685                        |
| Customer penalties                                  | 92,500                         | 34,614                         | 127,114                        |
| Turn on charges and NSF checks                      | 5,312                          | -                              | 5,312                          |
| Tap Fees                                            | 18,425                         | 10,069                         | 28,494                         |
| <b>TOTAL OPERATING REVENUES</b>                     | <b><u>\$ 4,442,450</u></b>     | <b><u>\$ 1,557,210</u></b>     | <b><u>\$ 5,999,660</u></b>     |
| <b><u>OPERATING EXPENSES:</u></b>                   |                                |                                |                                |
| Source of supply                                    | \$ -                           | \$ 91,351                      | \$ 91,351                      |
| Power and pumping                                   | 436,181                        | 97,532                         | 533,713                        |
| Purification and laboratory                         | 508,071                        | -                              | 508,071                        |
| Sewage treatment                                    | -                              | 450,961                        | 450,961                        |
| Transmission and distribution                       | 808,939                        | -                              | 808,939                        |
| General and administrative                          | 869,456                        | 496,120                        | 1,365,576                      |
| Depreciation                                        | 638,838                        | 170,341                        | 809,179                        |
| <b>TOTAL OPERATING EXPENSES</b>                     | <b><u>\$ 3,261,485</u></b>     | <b><u>\$ 1,306,305</u></b>     | <b><u>\$ 4,567,790</u></b>     |
| <br><b>NET OPERATING INCOME</b>                     | <br><b><u>\$ 1,180,964</u></b> | <br><b><u>\$ 250,906</u></b>   | <br><b><u>\$ 1,431,870</u></b> |
| <br><b><u>NON-OPERATING REVENUE AND EXPENSE</u></b> |                                |                                |                                |
| Non-operating revenue                               | \$ 72,142                      | \$ 15,488                      | \$ 87,630                      |
| Non-operating expenses                              | (359,107)                      | (249,395)                      | (608,502)                      |
| <b>TOTAL NON-OPERATING REVENUE AND (EXPENSE)</b>    | <b><u>\$ (286,965)</u></b>     | <b><u>\$ (233,907)</u></b>     | <b><u>\$ (520,874)</u></b>     |
| <br><b>NET INCOME &lt;LOSS&gt;</b>                  | <br><b><u>\$ 893,999</u></b>   | <br><b><u>\$ 16,999</u></b>    | <br><b><u>\$ 910,996</u></b>   |
| <br>NET POSITION - January 1, 2017 (DEFICIT)        | <br><u>(259,439)</u>           | <br><u>9,024,698</u>           | <br><u>8,765,259</u>           |
| <br><b>NET POSITION - December 31, 2017</b>         | <br><b><u>\$ 634,560</u></b>   | <br><b><u>\$ 9,041,697</u></b> | <br><b><u>\$ 9,676,255</u></b> |

The accompanying notes are an integral part of these financial statements

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**STATEMENT OF CASH FLOWS**  
**FOR THE YEAR ENDED DECEMBER 31, 2017**

**CASH FLOWS FROM OPERATING ACTIVITIES:**

|                                                               |                            |
|---------------------------------------------------------------|----------------------------|
| Cash received from water and sewer charges                    | \$ 6,284,703               |
| Cash received from other operating revenue                    | 33,806                     |
| Cash payments to employees for services                       | (1,293,235)                |
| Cash payments to suppliers for goods and services             | (2,229,590)                |
| <b>NET CASH PROVIDED &lt;USED&gt; BY OPERATING ACTIVITIES</b> | <b><u>\$ 2,795,684</u></b> |

**CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:**

|                                                                                   |                              |
|-----------------------------------------------------------------------------------|------------------------------|
| Principal payments on debt                                                        | \$ (7,265,163)               |
| Bond proceeds - Series of 2017                                                    | 7,020,000                    |
| Interest expense                                                                  | (365,978)                    |
| Bond issue costs                                                                  | (223,555)                    |
| Capital purchases                                                                 | (655,563)                    |
| <b>NET CASH PROVIDED &lt;USED&gt; BY CAPITAL AND RELATED FINANCING ACTIVITIES</b> | <b><u>\$ (1,490,259)</u></b> |

**CASH FLOWS FROM NONCAPITAL AND RELATED FINANCING ACTIVITIES:**

|                                                                                      |                         |
|--------------------------------------------------------------------------------------|-------------------------|
| Merchandising and other revenue                                                      | \$ 81,374               |
| Other adjustments                                                                    | 5,018                   |
| Refund of prior year revenues                                                        | (35,178)                |
| <b>NET CASH PROVIDED &lt;USED&gt; BY NONCAPITAL AND RELATED FINANCING ACTIVITIES</b> | <b><u>\$ 51,214</u></b> |

**CASH FLOWS FROM INVESTING ACTIVITIES:**

|                                                               |                            |
|---------------------------------------------------------------|----------------------------|
| Deposits to Investments                                       | \$ (552,853)               |
| Earnings on investments                                       | 6,256                      |
| <b>NET CASH PROVIDED &lt;USED&gt; BY INVESTING ACTIVITIES</b> | <b><u>\$ (546,597)</u></b> |

|                                                      |            |
|------------------------------------------------------|------------|
| NET INCREASE <DECREASE> IN CASH AND CASH EQUIVALENTS | \$ 810,042 |
|------------------------------------------------------|------------|

|                                                    |                         |
|----------------------------------------------------|-------------------------|
| <b>CASH AND CASH EQUIVALENTS - JANUARY 1, 2017</b> | <b><u>1,168,842</u></b> |
|----------------------------------------------------|-------------------------|

|                                                      |                                   |
|------------------------------------------------------|-----------------------------------|
| <b>CASH AND CASH EQUIVALENTS - DECEMBER 31, 2017</b> | <b><u><u>\$ 1,978,884</u></u></b> |
|------------------------------------------------------|-----------------------------------|

**RECONCILIATION OF OPERATING INCOME TO CASH FLOWS  
PROVIDED BY OPERATING ACTIVITIES:**

|                      |              |
|----------------------|--------------|
| Net Operating Income | \$ 1,431,870 |
| Depreciation         | 809,179      |

**Changes in assets and liabilities:**

|                                                               |                                   |
|---------------------------------------------------------------|-----------------------------------|
| (Increase) Decrease in water/sewer receivables                | 310,121                           |
| (Increase) Decrease in accrued utility revenues               | 8,728                             |
| (Increase) Decrease in prepaids                               | 730                               |
| Increase (Decrease) in accounts payable                       | 276,166                           |
| Increase (Decrease) pension related assets/liabilities        | (52,386)                          |
| Increase (Decrease) in payroll liabilities                    | 606                               |
| Increase (Decrease) in customer deposits                      | 10,670                            |
| <b>NET CASH PROVIDED &lt;USED&gt; BY OPERATING ACTIVITIES</b> | <b><u><u>\$ 2,795,684</u></u></b> |

The accompanying notes are an integral part of these financial statements

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**DESCRIPTION OF AUTHORITY**

The Municipal Water Authority of Aliquippa, Beaver County, Pennsylvania, was incorporated on September 4, 1953 as a public corporation of the Commonwealth of Pennsylvania, organized and existing under the Municipality Authorities Act of 1945. The Authority supplies water to residential, commercial, and industrial users of the City of Aliquippa and certain surrounding communities. The Authority has no stockholders nor equity holders, and revenue or other cash received must be disbursed for specific purposes in accordance with provisions of the Trust Indenture securing the Series of 1998 Water and Sewer Revenue Bond issue and the Third Supplemental Trust Indenture dated as of August 15, 2003 securing the Series of 2003 Water and Sewer Revenue Bond issue.

The financial statements of the Municipal Water Authority of Aliquippa have been prepared in conformity with generally accepted accounting principles (GAAP) as applied to governmental 'enterprise (proprietary) funds'. The focus of proprietary fund measurement is upon determination of operating income, changes in net position, financial position, and cash flows. The generally accepted accounting principles applicable are those similar to businesses in the private sector. The Governmental Accounting Standards Board (GASB) is responsible for establishing GAAP for state and local governments through its pronouncements (Statements and Interpretations).

**REPORTING ENTITY**

A reporting entity is comprised of the primary government, component units and other organizations that are included to ensure the financial statements are not misleading. The primary government of the Municipal Authority of the Aliquippa consists of all funds, departments, boards and agencies that are not legally separate from the Authority. As defined by GASB Statement No. 14, component units are legally separate entities that are included in the Authority's reporting entity because of the significance of their operating or financial relationships with the Authority. Based on the application of this criteria, the Municipal Authority of the Authority of Aliquippa has no component units.

**BASIS OF ACCOUNTING**

The Authority utilizes the accrual method of accounting. Under this method, revenues are recognized when earned rather than when received, and expenses are recognized when the obligation is incurred rather than when the bill is paid. Inventory of plant materials represents management's estimate of inventory value as of December 31, 2017. Generally accepted accounting principles require that inventory be shown at cost, or market value if lower than cost. Accordingly, the accompanying financial statements do not present inventory in conformity with generally accepted accounting principles.

**ESTIMATES**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Authority's management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)**

**CASH AND CASH EQUIVALENTS**

For the purposes of the Statements of Net Position and Cash Flows, cash and cash equivalents include amounts in petty cash and demand deposit accounts held with Wesbanco and Citizens Banks.

**INVESTMENTS**

The Municipal Authorities Act authorizes the Authority to invest in the following:

- I. Obligations of (a) the United States of America or any of its agencies or instrumentalities backed by the full faith and credit of the United States of America, (b) the Commonwealth of Pennsylvania or any of its agencies or instrumentalities backed by the full faith and credit of the Commonwealth of Pennsylvania, or (c) of any political subdivision of the Commonwealth of Pennsylvania or any of its agencies or instrumentalities backed by the full faith and credit of the political subdivision.
- II. Deposits in savings accounts, time deposits and share accounts of institutions insured by the Federal Deposit Insurance Corporation (FDIC) to the extent that such accounts are so insured and, for any amounts above the insured maximum, provided that approved collateral, as provided by law, is pledged by the depository.
- III. U.S. government obligations, short-term commercial paper issued by a public corporation, and banker's acceptances.

Restricted investments include money market mutual funds invested by the Authority's trustee (The Bank of New York Trust Company). Restricted investments are made pursuant to and restricted by the applicable Trust Indenture securing the Series 2017 Water and Sewer Revenue Bonds and the aforementioned Municipality Authorities Act. Under the terms of the Trust Indentures securing the Series of 2017 Water and Sewer Revenue Bond issues, the Authority is required to maintain certain funds for current operating expenses, debt service requirements, capital expenditures and surplus funds. The Authority is in compliance with the aforementioned Trust Indenture and Municipal Authorities Act restrictions for investments as of December 31, 2017. Investments are stated at cost which approximates fair value.

**RECEIVABLES**

The Authority maintains its receivables at net realizable value. Monthly provisions are made to the allowance for doubtful accounts based on management's estimate of potential bad debt losses.

**INVENTORY - PLANT MATERIALS**

The Authority's inventory of plant materials, as reflected in Exhibit A, represents management's estimate of inventory value as of December 31, 2017.

**UNEARNED REVENUE**

Unearned revenue arises when the Authority receives resources before it has legal claim to them. This occurs when grant monies are received prior to the incurrence of qualifying expenditures. In subsequent periods, when both revenue recognition criteria are met, or when the Authority has a legal claim to the resources, the unearned revenue liability is removed and revenue is recognized.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)**

**LONG-TERM DEBT FINANCING COSTS**

Bond issuance costs are recorded as expenditures in the year paid. During the 2017 calendar year, the Authority paid \$223,554 in bond issuance costs related to Water and Sewer Revenue Bonds, Series of 2017.

**DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES**

In addition to assets and liabilities, the statement of net position will sometimes report a separate section for deferred outflows and/or inflows of resources. These separate financial statement elements represent a decrease and/or increase in net position that applies to a future period and so will not be recognized as an outflows and /or inflows of resources (expenses/expenditures or income/revenue) in the current period.

**PROPERTY, PLANT AND EQUIPMENT**

All assets purchased by the Authority are recorded at cost and include betterments which extend the physical or economic life of the asset. Maintenance and repair costs are charged to operations as incurred. Donated facilities, if any, are recorded at fair value at the date title transfers to the Authority. Depreciation is provided on a straight-line basis over the estimated useful life of the asset as follows:

|                                  |             |
|----------------------------------|-------------|
| Water and Sewer Treatment Plants | 25-50 Years |
| Furniture and Equipment          | 3-10 Years  |
| Transportation Equipment         | 5-10 Years  |

Depreciation expense for 2017 was \$809,179.

**NET POSITION**

Net position is classified into three categories, as followed, according to external donor or legal restrictions or availability of assets to satisfy Authority obligations.

- Net Investment in Capital Assets – This component of net position consists of capital assets net of accumulated depreciation, and reduced by the outstanding balances of debt that is attributable to the acquisition, construction and improvement of the capital assets, plus deferred outflows of resources less deferred inflows of resources related to those assets.
- Restricted Net Position –This component of net position consists of restricted assets reduced by liabilities and deferred inflows related to those assets.
- Unrestricted – Consists of net position that does not meet the definition of ‘restricted’ or ‘net investment in capital assets’.

When an expense is incurred that can be paid using either restricted or unrestricted resources (net position), the Authority’s policy is to first apply the expense toward restricted resources and then toward unrestricted resources.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)**

**ADOPTION OF GASB PRONOUNCEMENTS**

The requirements of the following GASB Statements were adopted for the Authority's 2017 financial statements. Except where noted, the adoption of these pronouncements did not have a significant impact on the Authority's financial statements.

GASB issued Statement No. 74, "*Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*". The primary objective of this Statement is to address reporting by OPEB plans that administer benefits on behalf of governments. This Statement replaces Statement No. 43. The Statement had no material impact on the Authority.

GASB issued Statement No. 79, "*Certain External Investment Pools and Pool Participants*". The primary objective of this Statement is to address accounting and reporting for certain external investment pools and pool participants. Specifically, it establishes criteria for an external investment pool to qualify for the election to measure all of its investments at amortized costs for financial reporting purposes. This pronouncement required additional disclosures related to investments, which have been incorporated into Note 2.

GASB issued Statement No. 80, "*Blending Requirements for Certain Component Units- an amendment of GASB Statement No. 14*". The primary objective of this Statement is to improve financial reporting by clarifying the financial statement presentation requirements for certain component units. The Statement had no material impact on the Authority.

GASB issued Statement No. 81, "*Irrevocable Split-Interest Agreement*". The primary objective of this Statement is to improve accounting and financial reporting for irrevocable split-interest agreements by providing recognition and measurement guidance for situations in which a government is a beneficiary of the agreement. The Statement had no material impact on the Authority.

GASB issued Statement No. 82, "*Pension Issues- an amendment of GASB Statements No. 67, No. 68, and No. 73*". The primary objective of this Statement is to address certain issues that have been raised with respect to GASB Statements No. 67, "Financial Reporting for Pension Plans," No. 68, "Accounting and Financial Reporting for Pensions," and No. 73, "Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68." The Statement had no material impact on the Authority.

**PENDING GASB PRONOUNCEMENTS**

In June of 2015, the GASB issued Statement No. 75, "*Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*". The primary objective of this Statement is to address reporting by governments that provide OPEB to their employees and for governments that finance OPEB for employees of other governments. This Statement replaces the requirements of Statement No. 45. The provisions of this Statement are effective for the Authority's December 31, 2018 financial statements.

In November of 2016, the GASB issued Statement No. 83, "*Certain Asset Retirement Obligations*". The primary objective of this Statement is to provide financial statement users with information about 'asset retirement obligations (ARO) that were not addressed in GASB Standards by establishing uniform accounting and financial reporting requirements for these obligations. The provisions of this Statement are effective for the Authority's December 31, 2019 financial statements.



**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)**

**PENDING GASB PRONOUNCEMENTS (Continued)**

In January of 2017, the GASB issued Statement No. 84, '*Fiduciary Activities*'. The primary objective of this Statement is to enhance the consistency and comparability of fiduciary activity reporting by state and local governments. This Statement also is intended to improve the usefulness of fiduciary activity information primarily for assessing the accountability of governments in their roles as fiduciaries. The provisions of this Statement are effective for the Authority's December 31, 2019 financial statements.

In March of 2017, the GASB issued Statement No. 85, '*Omnibus 2017*'. The primary objective of this Statement is to improve consistency in accounting and financial reporting by addressing practice issues that have been identified during implementation and application of certain GASB Statements. The provisions of this Statement are effective for the Authority's December 31, 2018 financial statements.

In May of 2017, the GASB issued Statement No. 86, '*Certain Debt Extinguishment Issues*'. The primary objective of this Statement is to improve consistency in accounting and financial reporting for certain debt extinguishments and to enhance the decision-usefulness of that information. The provisions of this Statement are effective for the Authority's December 31, 2018 financial statements.

In June of 2017, the GASB issued Statement No. 87, '*Leases*'. The primary objective of this Statement is to better meet the information needs of financial statement users by improving accounting and financial reporting for leases; enhancing the comparability of financial statements between governments; and also enhancing the relevance, reliability (representational faithfulness), and consistency of information about the leasing activities of governments. The provisions of this Statement are effective for the Authority's December 31, 2020 financial statements.

The effects of implementing the aforementioned GASB Statements on the Authority's financial statements have not yet been determined.

**NOTE 2 - CASH DEPOSITS AND INVESTMENTS**

**CASH DEPOSITS**

At December 31, 2017, the Municipal Water Authority of Aliquippa had the following carrying values on its cash and cash equivalent accounts held with Citizens and Wesbanco Banks:

|                         | <b><u>Bank<br/>Balance</u></b> | <b><u>Carrying<br/>Value</u></b> |
|-------------------------|--------------------------------|----------------------------------|
| Citizens/Wesbanco Banks | <b><u>\$ 2,013,451</u></b>     | <b><u>\$ 1,978,884</u></b>       |

The difference between the bank balance and the book balance represents year-end reconciling items such as deposits in transit and outstanding checks. The Federal Reserve System (FDIC) coverage threshold for government accounts is \$250,000 per official custodian. This coverage includes checking and savings accounts, money market deposit accounts, and certificates of deposit.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 2 - CASH DEPOSITS AND INVESTMENTS (Continued)**

**Custodial Credit Risk**

Custodial credit risk is the risk that in the event of a bank failure, the Authority's deposits may not be returned to it. The Authority does not have a deposit policy for custodial credit risk. As of December 31, 2017, \$1,759,447 of the Authority's bank balance total of \$2,013,451 is exposed to custodial credit risk as this amount represents uninsured deposits collateralized with securities held by the pledging financial institution or by its trust department or agent, but not in the Authority's name. In accordance with Act number 72-1971 Session of the Commonwealth of Pennsylvania, the aforementioned deposits, in excess of \$250,000, are collateralized by securities pledged to a pooled public funds account with the Federal Reserve System.

**INVESTMENTS**

The following represents the fair value of the Authority's investments at December 31, 2017:

|                                | <b><u>MARKET<br/>VALUE</u></b> | <b><u>MATURITY</u></b> |
|--------------------------------|--------------------------------|------------------------|
| 1994 Debt Service Reserve Fund | \$ 51,599                      | N/A                    |
| 1994 Surplus Fund              | 1,295                          | N/A                    |
| 2013 Clearing Fund             | 3,960                          | N/A                    |
| 2013 Debt Service Fund         | 191,665                        | N/A                    |
| 2017 Construction Fund         | 1,001,527                      | N/A                    |
|                                | <b><u>\$ 1,250,046</u></b>     |                        |

**Custodial Credit Risk**

For an investment, custodial credit risk is the risk that, in the event of the failure of the counterparty, the Authority will not be able to recover the value of its investments or collateral security that are in the possession of an outside party. Investments in money market funds have the characteristics of open-end mutual funds and are not exposed to custodial credit risk because their existence is not evidenced by securities that exist in physical or book entry form. The Authority does not have a formal investment policy for custodial credit risk.

**Credit Risk:**

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Authority has no formal investment policy that limits its investment choices based on credit ratings by nationally recognized rating organizations.

**Interest Rate Risk:**

The Authority does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

**Concentration of Credit Risk:**

The Authority places no limit on the amount it may invest in any one issuer.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 2 - CASH DEPOSITS AND INVESTMENTS (Continued)**

**INVESTMENTS (Continued)**

**Fair Value Measurements:**

The Municipal Water Authority of Aliquippa's investments are reported at fair value within the fair value hierarchy established by generally accepted accounting principles. GASB Statement No. 72, '*Fair Value Measurement and Application*,' provides a framework for measuring fair value which establishes a three-level fair value hierarchy that prioritizes the inputs to measure fair value.

The hierarchy gives the highest priority to unadjusted quoted prices for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable (level 3 measurements). The three levels of the fair value hierarchy are described below:

Level 1- Observable inputs that reflect quoted prices for identical assets or liabilities in active markets such as stock quotes

Level 2- Includes inputs other than level 1 inputs that are directly or indirectly observable in the marketplace such as yield curves or other market data

Level 3- Unobservable inputs which reflect the reporting entity's assessment of the assumptions that market participants would use in pricing the asset or liability including assumptions about risk such as bid/ask spreads and liquidity discounts.

The following schedule presents the Investments of the Authority by level within the fair value hierarchy:

|            | Value<br>at 12/31/17 | Fair Value Measurements |         |         |
|------------|----------------------|-------------------------|---------|---------|
|            |                      | Level 1                 | Level 2 | Level 3 |
| BNY MELLON | \$ 1,250,046         | \$ 1,250,046            | \$ -    | \$ -    |

**NOTE 3 – PROPERTY, PLANT AND EQUIPMENT**

A summary of the changes in the Authority's property, plant and equipment during the fiscal year is as follows:

|                                      | 12/31/2016           | Additions<br><Deletions> | 12/31/2017           |
|--------------------------------------|----------------------|--------------------------|----------------------|
| Water Treatment Plant & Equipment    | \$ 25,827,896        | \$ 489,878               | \$ 26,317,774        |
| Sewage Treatment Plant & Equipment   | 27,304,852           | 367,040                  | 27,671,892           |
| Metering Project                     | 3,703,655            | -                        | 3,703,655            |
| Administration Furniture & Equipment | 2,438,457            | -                        | 2,438,457            |
| Work in Progress                     | 406,926              | (201,356)                | 205,570              |
| Less:                                | \$ 59,681,786        | \$ 655,562               | \$ 60,337,348        |
| Accumulated Depreciation             | (48,507,064)         | (809,179)                | (49,316,243)         |
|                                      | <u>\$ 11,174,722</u> | <u>\$ (153,617)</u>      | <u>\$ 11,021,105</u> |

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 4 - RECEIVABLES**

Receivables represent money due the Authority at December 31, 2017 as follows:

|                                      |                          |
|--------------------------------------|--------------------------|
| Water and Sewer Billings             | \$ 927,350               |
| Less Allowance for Doubtful Accounts | (11,087)                 |
| <b>Net Receivables</b>               | <b><u>\$ 916,263</u></b> |

**NOTE 5 - WATER AND SEWER REVENUE BONDS**

On October 12, 2017, the Authority issued Water and Sewer Revenue Bonds - Series of 2017 in the amount of \$7,020,000. Proceeds from the issue will be used to provide funds for various capital projects of the Authority, to refund, on a current refunding basis, the Authority's Water and Sewer Revenue Bonds – Series of 1998, to refund, on a current refunding basis, the Authority's Pennvest Note, to refund on an advanced refunding basis, the Authority's Water and Sewer Revenue Bonds – Series of 2013, and to pay the costs of issuing and insuring the bonds. The bonds were issued in denominations of \$5,000 with interest payable on May 15 and November 15 each year through maturity. Interest rates range between 1.08% and 2.25% with the bonds maturing on May 15, 2026. The bonds provide for early redemption options for those bonds maturing on or after November 15, 2023 as detailed in the official statement of issue. The bonds are issued pursuant to the Trust Indenture dated March 15, 1994 as supplemented by a First Supplemental Trust Indenture dated as of June 1, 1995, the Second Supplemental Trust Indenture dated as of August 15, 1998, the Third Supplemental Trust Indenture dated August 15, 2003, and the Fourth Supplemental Trust Indenture dated April 18, 2013. The bonds are limited obligations of the Authority payable solely from the receipts and revenues of the Authority pledged under the Indenture.

The following is a summary of the debt service requirements of the Authority's Water and Sewer Revenue Bond Obligations as of December 31, 2017:

| <b><u>YEAR END<br/>DECEMBER 31,</u></b> | <b><u>BOND<br/>PRINCIPAL</u></b> | <b><u>BOND<br/>INTEREST</u></b> | <b><u>TOTAL</u></b>        |
|-----------------------------------------|----------------------------------|---------------------------------|----------------------------|
| 2018                                    | \$ 185,000                       | \$ 163,061                      | \$ 348,061                 |
| 2019                                    | 900,000                          | 161,063                         | 1,061,063                  |
| 2020                                    | 910,000                          | 149,812                         | 1,059,812                  |
| 2021                                    | 935,000                          | 126,242                         | 1,061,242                  |
| 2022                                    | 960,000                          | 94,263                          | 1,054,263                  |
| 2023-2026                               | 3,130,000                        | 146,670                         | 3,276,670                  |
|                                         | <b><u>\$ 7,020,000</u></b>       | <b><u>\$ 841,111</u></b>        | <b><u>\$ 7,861,111</u></b> |

**NOTE 6 – CHANGE IN LONG-TERM DEBT**

The following represents the changes in the Authority's long-term debt obligations during 2017:

|       | <b><u>Balance 1/1/17</u></b> | <b><u>Additions</u></b>    | <b><u>Deletions</u></b>    | <b><u>Balance<br/>12/31/17</u></b> | <b><u>Due Within<br/>One Year</u></b> |
|-------|------------------------------|----------------------------|----------------------------|------------------------------------|---------------------------------------|
| Bonds | \$ 5,886,430                 | \$ 7,020,000               | \$ 5,886,430               | \$ 7,020,000                       | \$ 185,000                            |
| Notes | 1,378,732                    | -                          | 1,378,732                  | -                                  | -                                     |
|       | <b><u>\$ 7,265,162</u></b>   | <b><u>\$ 7,020,000</u></b> | <b><u>\$ 7,265,162</u></b> | <b><u>\$ 7,020,000</u></b>         | <b><u>\$ 185,000</u></b>              |

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 7 – OPERATING LEASE AGREEMENT**

In June of 2017, the Municipal Water Authority of Aliquippa entered into an operating lease agreement with Canon Financial Services, Inc. for the lease of a Canon copy machine. The terms of the lease call for 60 monthly payments of \$238 with the last payment due in July of 2022.

**NOTE 8 - PENSION PLANS**

The Authority maintains two separate noncontributory defined benefit pension plans covering 1) the officers and managers of the Authority and 2) the remaining eligible employees of the Authority. The Authority also maintains a defined contribution plan for the remaining eligible employees.

**PRINCIPAL FINANCIAL GROUP**

**OFFICERS AND MANAGERS**

The officers and managers defined benefit pension plan was established on August 1, 1978, with plan assets being managed by the Principal Financial Group. In order to participate in this plan, officers and managers of the Authority must have attained the age of twenty-one (21) but not age sixty (60), and have completed one year of continuous service with the Authority. The plan actuary employs the Entry Age Normal cost method using the 2011 IRS Prescribed Mortality-Optional Combined Table for Small Plans with a valuation interest assumption of 5%. Salary increase assumptions are based on a sliding scale assuming a 3% increase each year until retirement. Retirement benefits equal 60% of average compensation over the last five years of employment times an accrued benefit adjustment reduced by the participant's paid up annuity. Vesting at 100% occurs after completion of five years of service. As of August 1, 2017, plan membership consisted of two (2) active participants and one (1) terminated vested participant. Pension expense for 2017 was \$40,515.

**STAFF EMPLOYEES**

A defined benefit pension plan covering all employees of the Authority, other than officers and managers, was established on December 1, 1975, with plan assets being managed by the Principal Financial Group. In order to participate in this plan, eligible employees must complete 1000 hours of continuous service with the Authority. The plan actuary employs the Entry Age Normal cost method using the RP-2000 Combined Healthy Mortality Table with rates projected to 2005 using scale AA and with a valuation interest assumption of 5.25%. Salary increase assumptions are based on a sliding scale. Monthly retirement benefits are equal to \$30 multiplied by years of service as of July 1, 2003, payable for life. The vesting schedule is 40% after four years of service, increasing by 5% the next two years and increasing by 10% per year after.

As of December 1, 2017, plan membership consisted of 11 active participants and 5 inactive participants. This plan was frozen on July 1, 2003. No further accrual service will be credited, no employees shall become active participants, no inactive or former participants will become active and no further benefits shall accrue on or after July 1, 2003.

The plan's investment income was used to fund administrative costs. There are no long-term contracts for contributions as of December 31, 2017. In addition, there are no assets legally reserved for purposes other than the payment of plan member benefits.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 8 - PENSION PLANS (Continued)**

**Pension Plan Investment Policy:**

The purpose of the Investment Policy Statement (IPS) is to set forth the objectives, policies, and guidelines for the investment of the assets of the Authority's Police and General Employees' Pension Plans. Authority Council reserves the right to establish or amend any or all portions of the IPS. The IPS defines target allocations for the plan assets as reflected under the Long-Term Expected Rate of Return on Investments. As of the current year, the investment manager's stated allocations are as follows:

| <u>Asset Class</u>   | <u>Target<br/>Allocation</u> |
|----------------------|------------------------------|
| US Equity -large cap | 16.3%                        |
| Core bond            | 83.7%                        |

Additional information on the Investment Policy of the fund, including allowable asset classes, concentrations, and risk control measures can be found in the formal IPS which may be requested from the Authority or Investment Consultant.

**NET PENSION LIABILITY**

The Municipal Water Authority of Aliquippa's net pension liability for both the manager's and staff plans were measured as of December 31, 2017. Total pension liability was determined by an actuarial valuation using the following actuarial assumptions, applied to all periods included in the measurement based on census data as of January 1, 2017 for the manager's pension plan:

- Actuarial Cost Method – Entry Age Normal
- Investment Rate of Return – 5%
- Projected Salary Increases – 3%
- Underlying Inflation Rate – 2.25%
- Cost of Living Adjustments – 2.25%
- Mortality Table – RP 2000 Mortality Table Projected to the Valuation Date
- Employee Termination – None
- Retirement (Managers) – 60% at normal retirement age
- Disability - None

**Long-Term Expected Rate of Return on Investments:**

The long-term expected rate of return on pension plan investments was determined using a building-block method in which a best-estimate of expected future real rates of return is developed for each major asset class. These best-estimates are combined to produce the long-term expected rate of return by weighing the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of real rates of return for each major asset class included in the pension plan's target asset allocation were provided through a poll of major investment advisory firms and are summarized as follows:

| <u>Asset Class</u>    | <u>Target<br/>Allocation</u> | <u>Long-Term Expected<br/>Real Rate of Return</u> |
|-----------------------|------------------------------|---------------------------------------------------|
| US Equity - large cap | 16%                          | 7.45%                                             |
| Domestic Equity       | 84%                          | 4.15%                                             |

There has been no change to the long-term rate of return on investments since the last report.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 8 - PENSION PLANS (Continued)**

**Discount Rate:**

The discount rate used to measure the total pension liability is 5%. The projection of cash flows used to determine the discount rate assumed that plan member contributions would continue at the current rates, expenses would continue at their current level, and that the employer would contributed the Minimum Municipal Obligation in the future. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make projected future benefit payments of current plan members through the lifetime of the plan.

**CHANGES IN THE NET PENSION LIABILITY – MANAGERS PENSION PLAN**

|                                                   | <b>Total Pension<br/>Liability<br/>( a )</b> | <b>Plan Fiduciary<br/>Net Position<br/>( b )</b> | <b>Net Pension<br/>Liability<br/>( c )</b> |
|---------------------------------------------------|----------------------------------------------|--------------------------------------------------|--------------------------------------------|
| <b>Balance, beginning of year</b>                 | <b>\$ 430,022</b>                            | <b>\$ 696,643</b>                                | <b>\$ (266,621)</b>                        |
| Changes for the year:                             |                                              |                                                  |                                            |
| Service cost                                      | 19,380                                       | -                                                | 19,380                                     |
| Interest                                          | 17,929                                       | -                                                | 17,929                                     |
| Difference between expected<br>and actual results | 45,024                                       | -                                                | 45,024                                     |
| Assumption (gain)/loss                            | 35,168                                       | -                                                | 35,168                                     |
| Plan change                                       | -                                            | -                                                | -                                          |
| Contributions-employer                            | -                                            | 1,250                                            | (1,250)                                    |
| Contributions-employee                            | -                                            | -                                                | -                                          |
| Net investment income                             | -                                            | 61,779                                           | (61,779)                                   |
| Benefit payments                                  | (259,073)                                    | (259,073)                                        | -                                          |
| Actuarial costs                                   | -                                            | -                                                | -                                          |
| Administrative costs                              | -                                            | (16,105)                                         | 16,105                                     |
| Net changes                                       | <u>(141,572)</u>                             | <u>(212,149)</u>                                 | <u>70,577</u>                              |
| <b>Balance, End of Year</b>                       | <b><u>\$ 288,450</u></b>                     | <b><u>\$ 484,494</u></b>                         | <b><u>\$ (196,044)</u></b>                 |

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 8 - PENSION PLANS (Continued)**

**CHANGES IN THE NET PENSION LIABILITY – STAFF EMPLOYEES’ PENSION PLAN**

|                                   | Total Pension<br>Liability<br>( a ) | Plan Fiduciary<br>Net Position<br>( b ) | Net Pension<br>Liability<br>( c ) |
|-----------------------------------|-------------------------------------|-----------------------------------------|-----------------------------------|
| <b>Balance, beginning of year</b> | \$ 549,297                          | \$ 1,658,716                            | \$ (1,109,419)                    |
| Changes for the year:             |                                     |                                         |                                   |
| Service cost                      | -                                   | -                                       | -                                 |
| Interest                          | 25,970                              | -                                       | 25,970                            |
| Experience (gain)/loss            | (35,026)                            | -                                       | (35,026)                          |
| Assumption (gain)/loss            | 51,954                              | -                                       | 51,954                            |
| Plan change                       | -                                   | -                                       | -                                 |
| Contributions-employer            | -                                   | -                                       | -                                 |
| Contributions-employee            | -                                   | -                                       | -                                 |
| Net investment income             | -                                   | 117,610                                 | (117,610)                         |
| Benefit payments                  | (60,544)                            | (60,544)                                | -                                 |
| Actuarial costs                   | -                                   | -                                       | -                                 |
| Administrative costs              | -                                   | -                                       | -                                 |
| Net changes                       | (17,647)                            | 57,066                                  | (74,713)                          |
| <b>Balance, End of Year</b>       | <u>\$ 531,650</u>                   | <u>\$ 1,715,782</u>                     | <u>\$ (1,184,132)</u>             |

**Sensitivity of the net pension liability to changes in the discount rate:**

The following presents the net pension liability (asset) of the Municipal Water Authority of Aliquippa's manager's and staff employees' pension plans, calculated using the discount rate of 4.25% for the manager's plan and 4.50% for the staff employees' plan, as well as what the Authority's net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower or 1 percentage point higher than the current rate:

|                      | 1% Decrease<br>(3.25%) | Current<br>Discount Rate<br>(4.25%) | 1% Increase<br>(5.25%) |
|----------------------|------------------------|-------------------------------------|------------------------|
| Manager's Plan       | \$ (140,239)           | \$ (196,044)                        | \$ (241,500)           |
|                      |                        |                                     |                        |
|                      | 1% Decrease<br>(3.50%) | Current<br>Discount Rate<br>(4.50%) | 1% Increase<br>(5.50%) |
| Staff Employees Plan | \$ (1,100,057)         | \$ (1,184,132)                      | \$ (1,252,636)         |



**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 8 - PENSION PLANS (Continued)**

**PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED  
INFLOWS OF RESOURCES RELATED TO PENSIONS**

For the year ended December 31, 2017, total reported deferred outflows of resources and deferred inflows of resources related to pensions are as follows:

|                                                                                        | <b>----MANAGER'S ----</b>                     |                                              | <b>-- STAFF EMPLOYEES --</b>                  |                                              |
|----------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------|-----------------------------------------------|----------------------------------------------|
|                                                                                        | <b>Deferred<br/>Outflows of<br/>Resources</b> | <b>Deferred<br/>Inflows of<br/>Resources</b> | <b>Deferred<br/>Outflows of<br/>Resources</b> | <b>Deferred<br/>Inflows of<br/>Resources</b> |
| Differences between expected<br>and actual experience                                  | \$ 48,652                                     | \$ 94,975                                    | \$ -                                          | \$ 32,513                                    |
| Changes of assumptions                                                                 | 31,780                                        | -                                            | 41,562                                        | -                                            |
| Net difference between<br>projected and actual earnings<br>on pension plan investments | -                                             | 11,560                                       | 10,472                                        | 34,339                                       |
| <b>TOTAL</b>                                                                           | <b>\$ 80,432</b>                              | <b>\$ 106,535</b>                            | <b>\$ 52,034</b>                              | <b>\$ 66,852</b>                             |

Amounts reported as deferred outflows of resources and deferred inflow of resources related to pensions will be recognized in pension expense as follows:

| <b>Year ended<br/>December 31,</b> | <b>MANAGER'S<br/>PLAN</b> | <b>Year ended<br/>December 31,</b> | <b>STAFF<br/>EMPLOYEES<br/>PENSION<br/>PLAN</b> |
|------------------------------------|---------------------------|------------------------------------|-------------------------------------------------|
| 2018                               | \$ (23,856)               | 2018                               | \$ (1,911)                                      |
| 2019                               | (23,855)                  | 2019                               | (1,911)                                         |
| 2020                               | (21,954)                  | 2020                               | (7,146)                                         |
| 2021                               | 3,610                     | 2021                               | (3,850)                                         |
| 2022                               | 9,990                     | 2022                               | -                                               |
| Thereafter                         | 29,962                    | Thereafter                         | -                                               |
|                                    | -                         |                                    |                                                 |

**STEELWORKERS PENSION TRUST**

On July 1, 2003, the Authority entered into a trust agreement with the Steelworkers Pension Trust to contribute a fixed dollar amount for each covered employee. This plan covers staff other than officers and managers. Detailed financial information regarding this plan as of December 31, 2017 can be obtained by contacting the Steelworkers Pension Trust, Seven Neshaminy Interplex, Suite, 301, Trevose, PA 19053.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**NOTES TO FINANCIAL STATEMENTS**  
**DECEMBER 31, 2017**

**NOTE 9 - DEFERRED COMPENSATION PLAN**

The Municipal Water Authority of Aliquippa established a deferred compensation plan on January 21, 1993 in accordance with Section 457 of the Internal Revenue Code. All amounts of compensation deferred under the plan, all property and rights purchased with such amounts and all income attributable to such amounts remains the property of the Authority until distribution, subject only to the claims of the Authority's general creditors.

**NOTE 10 - RISK MANAGEMENT**

The Municipal Water Authority of Aliquippa is exposed to various risks of loss related to tort; theft of, damage to, and destruction of assets, errors and omissions; injuries to employees; and natural disasters. These risks are covered by commercial insurance purchased from independent third parties. Settled claims for these risks have not exceeded commercial insurance coverage for the past three years.

**NOTE 11 – COMMITMENTS AND CONTINGENT LIABILITIES**

The Authority, on occasion, can be party to various legal actions arising from normal business operations. As of December 31, 2017, the Authority is unaware of any pending litigation.

**NOTE 12 – SUBSEQUENT EVENT**

The Authority evaluated its December 31, 2017 financial statements for events through the date of the financial statements. The Authority is not aware of any subsequent events that would require recognition or disclosure in the financial statements.

# **REQUIRED SUPPLEMENTARY INFORMATION**

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS**  
**REQUIRED SUPPLEMENTARY INFORMATION (RSI)**

|                                                                           | Manager's<br>Plan<br>Measurement<br>Date<br>7/31/2017 | Manager's<br>Plan<br>Measurement<br>Date<br>7/31/2016 | Manager's<br>Plan<br>Measurement<br>Date<br>7/31/2015 | Staff<br>Employees<br>Measurement<br>Date<br>12/31/2017 | Staff<br>Employees<br>Measurement<br>Date<br>12/31/2016 |
|---------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|
| <b>Total Pension Liability-Beginning</b>                                  | \$ 430,022                                            | \$ 527,013                                            | \$ 460,197                                            | \$ 549,297                                              | \$ 523,140                                              |
| Service Cost                                                              | 19,380                                                | 32,460                                                | 30,417                                                | -                                                       | -                                                       |
| Interest                                                                  | 17,929                                                | 27,974                                                | 24,531                                                | 25,970                                                  | 26,157                                                  |
| Benefit payments, including Refunds of Members Contributions              | (259,073)                                             |                                                       |                                                       | (60,544)                                                |                                                         |
| Differences Between Expected and Actual Experience                        | 45,024                                                | (158,293)                                             | 11,868                                                | (35,026)                                                | -                                                       |
| Changes in Assumptions                                                    | 35,168                                                | 868                                                   |                                                       | 51,953                                                  |                                                         |
| Net Change in Total Pension Liability                                     | \$ (141,572)                                          | \$ (96,991)                                           | \$ 66,816                                             | \$ (17,647)                                             | \$ 26,157                                               |
| <b>Total Pension Liability-Ending</b>                                     | <b>\$ 288,450</b>                                     | <b>\$ 430,022</b>                                     | <b>\$ 527,013</b>                                     | <b>\$ 531,650</b>                                       | <b>\$ 549,297</b>                                       |
| <br>Plan Fiduciary Net Position-Beginning                                 | <br>\$ 696,643                                        | <br>\$ 697,942                                        | <br>\$ 652,274                                        | <br>\$ 1,658,716                                        | <br>\$ 1,571,165                                        |
| Contributions-employer                                                    | 1,250                                                 | -                                                     | 10,000                                                | -                                                       | -                                                       |
| Contributions-employee                                                    | -                                                     | -                                                     | -                                                     | -                                                       | -                                                       |
| Benefit payments, including Refunds of Employee Contributions             | (259,073)                                             | -                                                     | -                                                     | (60,544)                                                |                                                         |
| Net Investment Income                                                     | 61,779                                                | 5,102                                                 | 41,988                                                | 117,610                                                 | 87,564                                                  |
| Market Value Investment Income                                            | -                                                     | -                                                     | -                                                     | -                                                       | -                                                       |
| Administrative Expense                                                    | (16,105)                                              | (6,401)                                               | (6,320)                                               | -                                                       | (13)                                                    |
| Additional Administrative Expense                                         | -                                                     | -                                                     | -                                                     | -                                                       | -                                                       |
| Change in Plan Fiduciary Net Position                                     | \$ (212,149)                                          | \$ (1,299)                                            | \$ 45,668                                             | \$ 57,066                                               | \$ 87,551                                               |
| <br>Plan Fiduciary Net Position-Ending                                    | <br>\$ 484,494                                        | <br>\$ 696,643                                        | <br>\$ 697,942                                        | <br>\$ 1,715,782                                        | <br>\$ 1,658,716                                        |
| <br>Net Pension Liability-Ending                                          | <br>\$ (196,044)                                      | <br>\$ (266,621)                                      | <br>\$ (170,929)                                      | <br>\$ (1,184,132)                                      | <br>\$ (1,109,419)                                      |
| <br><b>RATIOS:</b>                                                        |                                                       |                                                       |                                                       |                                                         |                                                         |
| Plan Fiduciary Net Position as a<br>Percentage of Total Pension Liability | 167.96%                                               | 162.00%                                               | 132.43%                                               | 322.73%                                                 | 301.97%                                                 |
| <br>Covered-employee Payroll                                              | <br>\$ 156,952                                        | <br>\$ 137,777                                        | <br>\$ 215,200                                        | <br>\$ -                                                | <br>\$ -                                                |
| <br>Net Pension Liability as a Percentage<br>of Covered-employee Payroll  | <br>-124.91%                                          | <br>-193.52%                                          | <br>-79.43%                                           |                                                         |                                                         |

NOTE: Schedule requires information for past 10 calendar years. Most recent actuarial valuation presents information for calendar years 2017, 2016, and 2015 only.

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**SCHEDULE OF ACTUARIALLY DETERMINED PENSION CONTRIBUTION AND RELATED RATIOS**  
**REQUIRED SUPPLEMENTARY INFORMATION (RSI)**

|                                                              | <b><u>Manager's<br/>Plan<br/>7/31/2017</u></b> | <b><u>Manager's<br/>Plan<br/>7/31/2016</u></b> | <b><u>Manager's<br/>Plan<br/>7/31/2015</u></b> |
|--------------------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|
| Actuarially Determined Contribution                          | \$ 1,250                                       | \$ 7,521                                       | \$ 13,209                                      |
| Contributions                                                | <u>1,250</u>                                   | <u>10,000</u>                                  | <u>13,209</u>                                  |
| Contribution Deficiency (Excess)                             | <u><u>\$ -</u></u>                             | <u><u>\$ (2,479)</u></u>                       | <u><u>\$ -</u></u>                             |
| <b>RATIOS:</b>                                               |                                                |                                                |                                                |
| Covered-employee Payroll                                     | \$ 156,952                                     | \$ 137,777                                     | \$ 215,200                                     |
| Contributions as a Percentage of<br>Covered-employee Payroll | 0.80%                                          | 7.26%                                          | 6.14%                                          |

NOTE: Schedule requires information for past 10 calendar years. Most recent actuarial valuation presents information for calendar years 2017, 2016, and 2015 only.

MUNICIPAL WATER AUTHORITY OF ALIQUIPPA  
SCHEDULE OF ANNUAL MONEY-WEIGHTED RATE OF RETURN NET OF INVESTMENT EXPENSE  
MANAGERS PENSION PLAN  
REQUIRED SUPPLEMENTARY INFORMATION (RSI)  
DECEMBER 31, 2017

| <u>12/31/2017</u> | <u>12/31/2016</u> | <u>12/31/2015</u> |
|-------------------|-------------------|-------------------|
| 10.31%            | 74.00%            | 6.46%             |

NOTE: Schedule requires information for past 10 calendar years. Most recent actuarial valuation presents information for the four most recent years.

# ***SUPPLEMENTARY INFORMATION***

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**SCHEDULE OF BUDGET AND ACTUAL REVENUES AND EXPENSES**  
**WATER FUND**  
**FOR THE YEAR ENDED DECEMBER 31, 2017**

|                                          | <b>BUDGET</b>       | <b>ACTUAL</b>       | <b>VARIANCE<br/>over &lt;under&gt;</b> |
|------------------------------------------|---------------------|---------------------|----------------------------------------|
| <b><u>OPERATING REVENUES:</u></b>        |                     |                     |                                        |
| Domestic consumer                        | \$ 2,850,000        | \$ 2,984,349        | \$ 134,349                             |
| Commercial consumer                      | 550,000             | 478,844             | (71,156)                               |
| Industrial consumer                      | 545,000             | 563,654             | 18,654                                 |
| Private fire protection                  | 20,000              | 24,227              | 4,227                                  |
| Public fire protection                   | 290,000             | 208,105             | (81,895)                               |
| Sales to public authorities              | 60,000              | 67,034              | 7,034                                  |
| Customer penalties                       | 75,000              | 92,500              | 17,500                                 |
| Turn on charges and nsf checks           | 5,000               | 5,312               | 312                                    |
| Water tap fees                           | -                   | 18,425              | 18,425                                 |
| <b>TOTAL OPERATING REVENUES</b>          | <b>\$ 4,395,000</b> | <b>\$ 4,442,450</b> | <b>\$ 47,450</b>                       |
| <b><u>NON-OPERATING REVENUES:</u></b>    |                     |                     |                                        |
| Revenue from merchandising               | \$ -                | \$ 2,468            | \$ 2,468                               |
| Interest revenue                         | -                   | 3,128               | 3,128                                  |
| Employee contribution                    | 53,040              | 44,900              | (8,140)                                |
| Refund of prior year expenses            | -                   | 186                 | 186                                    |
| Miscellaneous non-operating revenue      | 15,500              | 21,460              | 5,960                                  |
| <b>TOTAL NON-OPERATING REVENUES</b>      | <b>\$ 68,540</b>    | <b>\$ 72,142</b>    | <b>\$ 3,602</b>                        |
| <b>TOTAL REVENUES</b>                    | <b>\$ 4,463,540</b> | <b>\$ 4,514,592</b> | <b>\$ 51,052</b>                       |
| <b><u>OPERATING EXPENSES:</u></b>        |                     |                     |                                        |
| <b><u>POWER AND PUMPING:</u></b>         |                     |                     |                                        |
| Operation meals                          | \$ 10,000           | \$ 979              | \$ (9,021)                             |
| Supplies and expenses                    | 10,000              | 10,320              | 320                                    |
| Maintenance of structure and improvement | 25,000              | 2,472               | (22,528)                               |
| Maintenance of equipment                 | 25,000              | 24,281              | (719)                                  |
| Power purchased - J & L                  | 48,000              | 38,924              | (9,076)                                |
| Power purchased - Soft. Plant            | 250,000             | 265,608             | 15,608                                 |
| Power purchased - Ranney Well            | 63,000              | 60,814              | (2,186)                                |
| Power purchased - Booster Station        | 15,000              | 22,054              | 7,054                                  |
| Power purchased - Raccoon Township       | 25,000              | 4,002               | (20,998)                               |
| Tank Rd/Reservoir BC Jail                | 250                 | 258                 | 8                                      |
| 1st Alley Pump                           | -                   | 6,469               | 6,469                                  |
| <b>TOTAL POWER AND PUMPING</b>           | <b>\$ 471,250</b>   | <b>\$ 436,181</b>   | <b>\$ (35,069)</b>                     |



**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**SCHEDULE OF BUDGET AND ACTUAL REVENUES AND EXPENSES**  
**WATER FUND**  
**FOR THE YEAR ENDED DECEMBER 31, 2017**

|                                              | <u>BUDGET</u>       | <u>ACTUAL</u>       | <u>VARIANCE</u><br><u>over &lt;under&gt;</u> |
|----------------------------------------------|---------------------|---------------------|----------------------------------------------|
| <b>PURIFICATION AND LABORATORY:</b>          |                     |                     |                                              |
| Purification and lab labor                   | \$ 285,000          | \$ 189,972          | \$ (95,028)                                  |
| Water testing                                | 15,000              | 11,472              | (3,528)                                      |
| Supplies and expenses                        | 158,000             | 132,655             | (25,345)                                     |
| Outside services - plant                     | 15,000              | 38,402              | 23,402                                       |
| Maintenance of structure and improvement     | 25,000              | 9,233               | (15,767)                                     |
| Maintenance treatment plant labor            | 100,000             | 121,187             | 21,187                                       |
| Maintenance of back wash                     | 2,500               | 352                 | (2,148)                                      |
| Utilities                                    | 7,500               | 4,797               | (2,703)                                      |
| <b>TOTAL PURIFICATION &amp; LABORATORY</b>   | <b>\$ 608,000</b>   | <b>\$ 508,071</b>   | <b>\$ (99,929)</b>                           |
| <b>TRANSMISSION AND DISTRIBUTION:</b>        |                     |                     |                                              |
| Operation supplies and expense               | \$ 268,000          | \$ 389,586          | \$ 121,586                                   |
| Outside Services - maintenance               | 75,000              | 178,503             | 103,503                                      |
| Maintenance of lines/operation               | 250,000             | 139,960             | (110,040)                                    |
| Maintenance of structure and improvements    | 25,000              | 1,542               | (23,458)                                     |
| Maintenance of meters                        | 75,000              | 50,395              | (24,605)                                     |
| Maintenance of hydrants                      | 25,000              | 15,665              | (9,335)                                      |
| Capital Improvement                          | 521,522             | 1,783               | (519,738)                                    |
| Rents                                        | 2,000               | 100                 | (1,900)                                      |
| Purchase of trucks and equipment             | 25,000              | 3,276               | (21,724)                                     |
| Vehicle/equipment maintenance                | 25,000              | 10,232              | (14,768)                                     |
| Fuel                                         | 20,000              | 17,898              | (2,102)                                      |
| <b>TOTAL TRANSMISSION &amp; DISTRIBUTION</b> | <b>\$ 1,311,522</b> | <b>\$ 808,939</b>   | <b>\$ (502,583)</b>                          |
| <b>GENERAL AND ADMINISTRATIVE:</b>           |                     |                     |                                              |
| Salaries - general offices                   | \$ -                | \$ 2,600            | \$ 2,600                                     |
| Managers salary                              | 84,000              | 74,777              | (9,223)                                      |
| Other office salaries                        | 90,000              | 86,512              | (3,488)                                      |
| FICA Expense                                 | -                   | 49,548              | 49,548                                       |
| Office supplies and expense                  | 30,000              | 27,542              | (2,458)                                      |
| Real estate taxes / Sohn Rd.                 | 225                 | 172                 | (53)                                         |
| Professional services                        | 40,700              | 39,090              | (1,610)                                      |
| Insurance - PIRMA/General Liability          | 62,500              | 72,959              | 10,459                                       |
| Employees insurance and pension              | 315,000             | 359,909             | 44,909                                       |
| Salary pensions                              | 104,000             | 67,828              | (36,172)                                     |
| Miscellaneous expense                        | 25,000              | 27,050              | 2,050                                        |
| Maintenance - general property               | 7,000               | -                   | (7,000)                                      |
| Postage                                      | 11,000              | 12,447              | 1,447                                        |
| Uniform/Clothing allowance                   | 5,000               | 12,277              | 7,277                                        |
| Utilities                                    | 16,900              | 30,656              | 13,756                                       |
| Dues, Memberships, Subscriptions             | 1,600               | 3,735               | 2,135                                        |
| Software                                     | 6,000               | -                   | (6,000)                                      |
| Travel and Education                         | 1,500               | 764                 | (736)                                        |
| Office equipment                             | 2,500               | 1,590               | (910)                                        |
| <b>TOTAL GENERAL AND ADMINISTRATIVE</b>      | <b>\$ 802,925</b>   | <b>\$ 869,456</b>   | <b>\$ 66,531</b>                             |
| <b>Depreciation</b>                          | <b>\$ -</b>         | <b>\$ 638,838</b>   | <b>\$ 638,838</b>                            |
| <b>TOTAL OPERATING EXPENSES</b>              | <b>\$ 3,193,697</b> | <b>\$ 3,261,485</b> | <b>\$ 67,789</b>                             |

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**SCHEDULE OF BUDGET AND ACTUAL REVENUES AND EXPENSES**  
**WATER FUND**  
**FOR THE YEAR ENDED DECEMBER 31, 2017**

|                                            | <b><u>BUDGET</u></b>       | <b><u>ACTUAL</u></b>       | <b><u>VARIANCE<br/>over &lt;under&gt;</u></b> |
|--------------------------------------------|----------------------------|----------------------------|-----------------------------------------------|
| <b><u>NON-OPERATING EXPENSES:</u></b>      |                            |                            |                                               |
| Interest expense - PENNVEST                | \$ 285,000                 | \$ 37,978                  | \$ (247,022)                                  |
| Interest expense on bonds                  | 893,586                    | 186,602                    | (706,984)                                     |
| Bond Issue Costs - Series of 2017          | 89,359                     | 134,133                    | 44,774                                        |
| Interest expense - truck lease             | 1,898                      | 394                        | (1,504)                                       |
| <b><u>TOTAL NON-OPERATING EXPENSES</u></b> | <b><u>\$ 1,269,843</u></b> | <b><u>\$ 359,107</u></b>   | <b><u>\$ (910,736)</u></b>                    |
| <b><u>TOTAL EXPENSES</u></b>               | <b><u>\$ 4,463,540</u></b> | <b><u>\$ 3,620,592</u></b> | <b><u>\$ (842,947)</u></b>                    |

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**SCHEDULE OF BUDGET AND ACTUAL REVENUES AND EXPENSES**  
**SEWER FUND**  
**FOR THE YEAR ENDED DECEMBER 31, 2017**

|                                       | <b><u>BUDGET</u></b>       | <b><u>ACTUAL</u></b>       | <b><u>VARIANCE<br/>over &lt;under&gt;</u></b> |
|---------------------------------------|----------------------------|----------------------------|-----------------------------------------------|
| <b><u>OPERATING REVENUES:</u></b>     |                            |                            |                                               |
| Domestic consumer                     | \$ 875,000                 | \$ 863,496                 | \$ (11,504)                                   |
| Commercial consumer                   | 205,000                    | 128,423                    | (76,577)                                      |
| Industrial consumer                   | 30,000                     | 8,121                      | (21,879)                                      |
| Sales to public                       | 165,000                    | 88,836                     | (76,164)                                      |
| Public authority                      | 470,000                    | 423,651                    | (46,349)                                      |
| Customer penalties                    | 35,000                     | 34,614                     | (386)                                         |
| Sewer Tap-ins                         | -                          | 10,069                     | 10,069                                        |
| <b>TOTAL OPERATING REVENUES</b>       | <b><u>\$ 1,780,000</u></b> | <b><u>\$ 1,557,210</u></b> | <b><u>\$ (222,790)</u></b>                    |
| <b><u>NON-OPERATING REVENUES:</u></b> |                            |                            |                                               |
| Interest revenue                      | \$ -                       | \$ 3,128                   | \$ 3,128                                      |
| Employee contribution                 | 12,480                     | 12,360                     | (120)                                         |
| <b>TOTAL NON-OPERATING REVENUES</b>   | <b><u>\$ 12,480</u></b>    | <b><u>\$ 15,488</u></b>    | <b><u>\$ 3,008</u></b>                        |
| <b>TOTAL REVENUES</b>                 | <b><u>\$ 1,792,480</u></b> | <b><u>\$ 1,572,698</u></b> | <b><u>\$ (219,782)</u></b>                    |
| <b><u>OPERATING EXPENSES:</u></b>     |                            |                            |                                               |
| <b><u>SEWER LINES:</u></b>            |                            |                            |                                               |
| Maintenance of sewer lines            | \$ 55,000                  | \$ 49,394                  | \$ (5,606)                                    |
| Capital Improvements                  | 140,000                    | 41,957                     | (98,043)                                      |
| <b>TOTAL SEWER LINES</b>              | <b><u>\$ 195,000</u></b>   | <b><u>\$ 91,351</u></b>    | <b><u>\$ (103,649)</u></b>                    |
| <b><u>SEWER PUMPING:</u></b>          |                            |                            |                                               |
| Purchased power                       | \$ 89,350                  | \$ 76,423                  | \$ 5,898                                      |
| Supplies and expenses                 | -                          | (160)                      | (160)                                         |
| Maintenance of pump station           | 20,000                     | 20,930                     | 930                                           |
| Non-salary compensation - meals       | 800                        | 340                        | (460)                                         |
| <b>TOTAL SEWER PUMPING</b>            | <b><u>\$ 110,150</u></b>   | <b><u>\$ 97,532</u></b>    | <b><u>\$ 6,207</u></b>                        |
| <b><u>SEWAGE TREATMENT:</u></b>       |                            |                            |                                               |
| Labor                                 | \$ 322,000                 | \$ 276,300                 | \$ (45,700)                                   |
| Purification and lab supplies         | 20,000                     | 6,154                      | (13,846)                                      |
| Chlorine                              | 10,000                     | 4,649                      | (5,352)                                       |
| Maintenance of structures             | 1,000                      | 4,207                      | 3,207                                         |
| Outside services                      | 50,000                     | 39,604                     | (10,396)                                      |
| Maintenance of equipment              | 25,000                     | 10,630                     | (14,370)                                      |
| Drying bed maintenance & disposal     | 17,500                     | 46,083                     | 28,583                                        |
| Outside services                      | 5,000                      | 30,528                     | 25,528                                        |
| Utilities                             | 18,000                     | 15,660                     | (2,340)                                       |
| Maintenance of meters                 | -                          | 4,248                      | 4,248                                         |
| Rentals                               | 500                        | -                          | (500)                                         |
| Vehicle maintenance                   | 7,500                      | 7,266                      | (234)                                         |
| Fuel                                  | 3,000                      | 2,356                      | (644)                                         |
| Trucks and equipment                  | 15,000                     | 3,276                      | (11,724)                                      |
| <b>TOTAL SEWAGE TREATMENT</b>         | <b><u>\$ 494,500</u></b>   | <b><u>\$ 450,961</u></b>   | <b><u>\$ (43,539)</u></b>                     |

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**SCHEDULE OF BUDGET AND ACTUAL REVENUES AND EXPENSES**  
**SEWER FUND**  
**FOR THE YEAR ENDED DECEMBER 31, 2017**

|                                         | <b><u>BUDGET</u></b>       | <b><u>ACTUAL</u></b>       | <b><u>VARIANCE<br/>over &lt;under&gt;</u></b> |
|-----------------------------------------|----------------------------|----------------------------|-----------------------------------------------|
| <b>GENERAL AND ADMINISTRATIVE:</b>      |                            |                            |                                               |
| Board salaries                          | \$ -                       | \$ 2,600                   | \$ 2,600                                      |
| General office salaries                 | 107,000                    | 86,512                     | (20,488)                                      |
| Managers salaries                       | 84,000                     | 74,777                     | (9,223)                                       |
| FICA expense                            | -                          | 49,548                     | 49,548                                        |
| Office supplies and expense             | 30,000                     | 20,669                     | (9,331)                                       |
| Professional services                   | 47,400                     | 31,923                     | (15,477)                                      |
| Insurance- General Liability            | 41,000                     | 37,583                     | (3,417)                                       |
| Employee insurance & pension            | 336,500                    | 140,241                    | (196,259)                                     |
| Salary pensions                         | 78,000                     | 4,445                      | (73,555)                                      |
| Miscellaneous general expense           | 7,000                      | 9,855                      | 2,855                                         |
| Maintenance of general property         | 15,000                     | 3,163                      | (11,837)                                      |
| Solicitor Expenses                      | 6,000                      | -                          | (6,000)                                       |
| Utilities- Telephone                    | 15,000                     | 15,468                     | 468                                           |
| Utilities- Power                        | -                          | 17                         | 17                                            |
| Utilities - Gas                         | 3,400                      | -                          | (3,400)                                       |
| Utilities- Cellular                     | 2,500                      | 2,314                      | (186)                                         |
| Uniforms/clothing allowance             | 1,500                      | 3,675                      | 2,175                                         |
| Postage                                 | 8,100                      | 12,380                     | 4,280                                         |
| Dues,memberships, subscriptions         | 500                        | -                          | (500)                                         |
| Software                                | 6,000                      | -                          | (6,000)                                       |
| Office equipment                        | 2,500                      | 589                        | (1,911)                                       |
| Travel and Education                    | 1,000                      | 362                        | (639)                                         |
| <b>TOTAL GENERAL AND ADMINISTRATIVE</b> | <b><u>\$ 792,400</u></b>   | <b><u>\$ 496,120</u></b>   | <b><u>\$ (296,280)</u></b>                    |
| <b>Depreciation</b>                     | <b><u>\$ -</u></b>         | <b><u>\$ 170,341</u></b>   | <b><u>\$ 170,341</u></b>                      |
| <b>TOTAL OPERATING EXPENSES</b>         | <b><u>\$ 1,592,050</u></b> | <b><u>\$ 1,306,305</u></b> | <b><u>\$ (266,920)</u></b>                    |
| <b><u>NON-OPERATING EXPENSES:</u></b>   |                            |                            |                                               |
| Refund of Prior Year Revenues           | \$ -                       | \$ 35,178                  | \$ 35,178                                     |
| Interest expense on bonds               | 175,000                    | 124,401                    | (50,599)                                      |
| Bond Issue Costs - Series of 2017       | 17,500                     | 89,422                     | 71,922                                        |
| Interest expense - truck lease          | 1,899                      | 394                        | (1,505)                                       |
| <b>TOTAL NON-OPERATING EXPENSES</b>     | <b><u>\$ 194,399</u></b>   | <b><u>\$ 249,395</u></b>   | <b><u>\$ 54,996</u></b>                       |
| <b>TOTAL EXPENSES</b>                   | <b><u>\$ 1,786,449</u></b> | <b><u>\$ 1,555,700</u></b> | <b><u>\$ (211,924)</u></b>                    |

**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**SCHEDULE OF RECEIPTS, DISBURSEMENTS AND CHANGES IN CASH BALANCES**  
**TRUST ACCOUNTS**  
**FOR THE YEAR ENDED DECEMBER 31, 2017**

|                                               | 1994 DEBT<br>SERVICE &<br>DEBT SERVICE<br>RESERVE<br>FUND | 1994<br>SURPLUS<br>FUND | 2013<br>CLEARING<br>FUND | 2013<br>DEBT SERVICE<br>FUND | 2017<br>CLEARING<br>FUND | 2017<br>CONSTRUCTION<br>FUND | TOTAL               |
|-----------------------------------------------|-----------------------------------------------------------|-------------------------|--------------------------|------------------------------|--------------------------|------------------------------|---------------------|
| <b>RECEIPTS:</b>                              |                                                           |                         |                          |                              |                          |                              |                     |
| Interest Income                               | \$ 4,422                                                  | \$ 7                    | \$ -                     | \$ -                         | \$ -                     | \$ 2                         | \$ 4,431            |
| Transfers                                     | -                                                         | -                       | -                        | 191,663                      | -                        | 1,001,525                    | 1,193,188           |
| Bond Proceeds                                 | -                                                         | -                       | -                        | -                            | 7,020,000                | -                            | 7,020,000           |
| Original Issue Premium                        | -                                                         | -                       | -                        | -                            | 126,899                  | -                            | 126,899             |
| Transfer from Municipal Authority             | 685,563                                                   | -                       | -                        | 383,321                      | -                        | -                            | 1,068,884           |
| <b>TOTAL RECEIPTS</b>                         | <b>\$ 689,985</b>                                         | <b>\$ 7</b>             | <b>\$ -</b>              | <b>\$ 574,984</b>            | <b>\$ 7,146,899</b>      | <b>\$ 1,001,527</b>          | <b>\$ 9,413,402</b> |
| <b>DISBURSEMENTS:</b>                         |                                                           |                         |                          |                              |                          |                              |                     |
| Transfers                                     | \$ 695,423                                                | \$ -                    | \$ -                     | \$ -                         | \$ 497,765               | \$ -                         | \$ 1,193,188        |
| Bond Issue Costs                              | -                                                         | -                       | -                        | -                            | 223,554                  | -                            | 223,554             |
| Deferred Interest on Advance Refunding        | -                                                         | -                       | -                        | -                            | 156,361                  | -                            | 156,361             |
| Pennvest Principal                            | -                                                         | -                       | -                        | -                            | 1,108,280                | -                            | 1,108,280           |
| Bond Principal                                | 565,000                                                   | -                       | -                        | 210,850                      | 5,110,580                | -                            | 5,886,430           |
| Bond Interest Expense                         | 69,908                                                    | -                       | -                        | 172,469                      | 50,359                   | -                            | 292,736             |
| <b>TOTAL DISBURSEMENTS</b>                    | <b>\$ 1,330,331</b>                                       | <b>\$ -</b>             | <b>\$ -</b>              | <b>\$ 383,319</b>            | <b>\$ 7,146,899</b>      | <b>\$ -</b>                  | <b>\$ 8,860,549</b> |
| EXCESS RECEIPTS OVER<br>(UNDER) DISBURSEMENTS | \$ (640,346)                                              | \$ 7                    | \$ -                     | \$ 191,665                   | \$ -                     | \$ 1,001,527                 | \$ 552,853          |
| CASH BALANCE - January 1, 2017                | 691,945                                                   | 1,288                   | 3,960                    | -                            | -                        | -                            | 697,193             |
| <b>CASH BALANCE - December 31, 2017</b>       | <b>\$ 51,599</b>                                          | <b>\$ 1,295</b>         | <b>\$ 3,960</b>          | <b>\$ 191,665</b>            | <b>\$ -</b>              | <b>\$ 1,001,527</b>          | <b>\$ 1,250,046</b> |

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## **APPENDIX G**

### **SPECIMEN MUNICIPAL BOND INSURANCE POLICY**

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# MUNICIPAL ASSURANCE CORP.

AN ASSURED GUARANTY COMPANY

## MUNICIPAL BOND INSURANCE POLICY

ISSUER:

Policy No: -N

BONDS: \$ in aggregate principal amount of

Effective Date:

Premium: \$

MUNICIPAL ASSURANCE CORP. ("MAC"), for consideration received, hereby UNCONDITIONALLY AND IRREVOCABLY agrees to pay to the trustee (the "Trustee") or paying agent (the "Paying Agent") (as set forth in the documentation providing for the issuance of and securing the Bonds) for the Bonds, for the benefit of the Owners or, at the election of MAC, directly to each Owner, subject only to the terms of this Policy (which includes each endorsement hereto), that portion of the principal of and interest on the Bonds that shall become Due for Payment but shall be unpaid by reason of Nonpayment by the Issuer.

On the later of the day on which such principal and interest becomes Due for Payment or the Business Day next following the Business Day on which MAC shall have received Notice of Nonpayment, MAC will disburse to or for the benefit of each Owner of a Bond the face amount of principal of and interest on the Bond that is then Due for Payment but is then unpaid by reason of Nonpayment by the Issuer, but only upon receipt by MAC, in a form reasonably satisfactory to it, of (a) evidence of the Owner's right to receive payment of the principal or interest then Due for Payment and (b) evidence, including any appropriate instruments of assignment, that all of the Owner's rights with respect to payment of such principal or interest that is Due for Payment shall thereupon vest in MAC. A Notice of Nonpayment will be deemed received on a given Business Day if it is received prior to 1:00 p.m. (New York time) on such Business Day; otherwise, it will be deemed received on the next Business Day. If any Notice of Nonpayment received by MAC is incomplete, it shall be deemed not to have been received by MAC for purposes of the preceding sentence and MAC shall promptly so advise the Trustee, Paying Agent or Owner, as appropriate, who may submit an amended Notice of Nonpayment. Upon disbursement in respect of a Bond, MAC shall become the owner of the Bond, any appurtenant coupon to the Bond or right to receipt of payment of principal of or interest on the Bond and shall be fully subrogated to the rights of the Owner, including the Owner's right to receive payments under the Bond, to the extent of any payment by MAC hereunder. Payment by MAC to the Trustee or Paying Agent for the benefit of the Owners shall, to the extent thereof, discharge the obligation of MAC under this Policy.

Except to the extent expressly modified by an endorsement hereto, the following terms shall have the meanings specified for all purposes of this Policy. "Business Day" means any day other than (a) a Saturday or Sunday or (b) a day on which banking institutions in the State of New York or the Insurer's Fiscal Agent are authorized or required by law or executive order to remain closed. "Due for Payment" means (a) when referring to the principal of a Bond, payable on the stated maturity date thereof or the date on which the same shall have been duly called for mandatory sinking fund redemption and does not refer to any earlier date on which payment is due by reason of call for redemption (other than by mandatory sinking fund redemption), acceleration or other advancement of maturity unless MAC shall elect, in its sole discretion, to pay such principal due upon such acceleration together with any accrued interest to the date of acceleration and (b) when referring to interest on a Bond, payable on the stated date for payment of interest. "Nonpayment" means, in respect of a Bond, the failure of the Issuer to have provided sufficient funds to the Trustee or, if there is no Trustee, to the Paying Agent for payment in full of all principal and interest that is Due for Payment on such Bond. "Nonpayment" shall also include, in respect of a Bond, any payment of principal or interest that is Due for Payment made to an Owner by or on behalf of the Issuer which has been recovered from such Owner pursuant to the

United States Bankruptcy Code by a trustee in bankruptcy in accordance with a final, nonappealable order of a court having competent jurisdiction. "Notice" means telephonic or telecopied notice, subsequently confirmed in a signed writing, or written notice by registered or certified mail, from an Owner, the Trustee or the Paying Agent to MAC which notice shall specify (a) the person or entity making the claim, (b) the Policy Number, (c) the claimed amount and (d) the date such claimed amount became Due for Payment. "Owner" means, in respect of a Bond, the person or entity who, at the time of Nonpayment, is entitled under the terms of such Bond to payment thereof, except that "Owner" shall not include the Issuer or any person or entity whose direct or indirect obligation constitutes the underlying security for the Bonds.

MAC may appoint a fiscal agent (the "Insurer's Fiscal Agent") for purposes of this Policy by giving written notice to the Trustee and the Paying Agent specifying the name and notice address of the Insurer's Fiscal Agent. From and after the date of receipt of such notice by the Trustee and the Paying Agent, (a) copies of all notices required to be delivered to MAC pursuant to this Policy shall be simultaneously delivered to the Insurer's Fiscal Agent and to MAC and shall not be deemed received until received by both and (b) all payments required to be made by MAC under this Policy may be made directly by MAC or by the Insurer's Fiscal Agent on behalf of MAC. The Insurer's Fiscal Agent is the agent of MAC only and the Insurer's Fiscal Agent shall in no event be liable to any Owner for any act of the Insurer's Fiscal Agent or any failure of MAC to deposit or cause to be deposited sufficient funds to make payments due under this Policy.

To the fullest extent permitted by applicable law, MAC agrees not to assert, and hereby waives, only for the benefit of each Owner, all rights (whether by counterclaim, setoff or otherwise) and defenses (including, without limitation, the defense of fraud), whether acquired by subrogation, assignment or otherwise, to the extent that such rights and defenses may be available to MAC to avoid payment of its obligations under this Policy in accordance with the express provisions of this Policy.

This Policy sets forth in full the undertaking of MAC, and shall not be modified, altered or affected by any other agreement or instrument, including any modification or amendment thereto. Except to the extent expressly modified by an endorsement hereto, (a) any premium paid in respect of this Policy is nonrefundable for any reason whatsoever, including payment, or provision being made for payment, of the Bonds prior to maturity and (b) this Policy may not be canceled or revoked. THIS POLICY IS NOT COVERED BY THE PROPERTY/CASUALTY INSURANCE SECURITY FUND SPECIFIED IN ARTICLE 76 OF THE NEW YORK INSURANCE LAW.

In witness whereof, MUNICIPAL ASSURANCE CORP. has caused this Policy to be executed on its behalf by its Authorized Officer.

MUNICIPAL ASSURANCE CORP.

By \_\_\_\_\_  
Authorized Officer

A subsidiary of Assured Guaranty Ltd.  
1633 Broadway, New York, N.Y. 10019  
(212) 974-0100

Form 500NY (5/13) (MAC)

**APPENDIX H**  
**BOND AMORTIZATION SCHEDULE**

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**\$10,000,000**  
**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**Beaver County, Pennsylvania**  
**Water and Sewer Revenue Bonds, Series of 2019**

**Dated:** Date of Delivery

**Interest Payable:** May 15 and November 15

**Principal Due:** November 15

**First Interest Payment:** May 15, 2019

**Denomination:** Integral multiples of \$5,000

**Form:** Book-Entry Only

| <u>Payment<br/>Date</u> | <u>Principal</u> | <u>Coupon</u> | <u>Interest</u> | <u>Debt<br/>Service</u> | <u>Fiscal<br/>Year<br/>Ended<br/>12/31</u> | <u>Fiscal Year<br/>Debt Service</u> |
|-------------------------|------------------|---------------|-----------------|-------------------------|--------------------------------------------|-------------------------------------|
| 05/15/2019              |                  |               | \$145,975.50    | \$145,975.50            |                                            |                                     |
| 11/15/2019              |                  |               | 199,057.50      | 199,057.50              | 2019                                       | 345,033                             |
| 05/15/2020              |                  |               | 199,057.50      | 199,057.50              |                                            |                                     |
| 11/15/2020              |                  |               | 199,057.50      | 199,057.50              | 2020                                       | 398,115                             |
| 05/15/2021              |                  |               | 199,057.50      | 199,057.50              |                                            |                                     |
| 11/15/2021              |                  |               | 199,057.50      | 199,057.50              | 2021                                       | 398,115                             |
| 05/15/2022              |                  |               | 199,057.50      | 199,057.50              |                                            |                                     |
| 11/15/2022              |                  |               | 199,057.50      | 199,057.50              | 2022                                       | 398,115                             |
| 05/15/2023              |                  |               | 199,057.50      | 199,057.50              |                                            |                                     |
| 11/15/2023              |                  |               | 199,057.50      | 199,057.50              | 2023                                       | 398,115                             |
| 05/15/2024              |                  |               | 199,057.50      | 199,057.50              |                                            |                                     |
| 11/15/2024              | 50,000           | 3.000%        | 199,057.50      | 249,057.50              | 2024                                       | 448,115                             |
| 05/15/2025              |                  |               | 198,307.50      | 198,307.50              |                                            |                                     |
| 11/15/2025              | 50,000           | 3.000%        | 198,307.50      | 248,307.50              | 2025                                       | 446,615                             |
| 05/15/2026              |                  |               | 197,557.50      | 197,557.50              |                                            |                                     |
| 11/15/2026              |                  |               | 197,557.50      | 197,557.50              | 2026                                       | 395,115                             |
| 05/15/2027              |                  |               | 197,557.50      | 197,557.50              |                                            |                                     |
| 11/15/2027              |                  |               | 197,557.50      | 197,557.50              | 2027                                       | 395,115                             |
| 05/15/2028              |                  |               | 197,557.50      | 197,557.50              |                                            |                                     |
| 11/15/2028              |                  |               | 197,557.50      | 197,557.50              | 2028                                       | 395,115                             |
| 05/15/2029              |                  |               | 197,557.50      | 197,557.50              |                                            |                                     |
| 11/15/2029              |                  |               | 197,557.50      | 197,557.50              | 2029                                       | 395,115                             |
| 05/15/2030              |                  |               | 197,557.50      | 197,557.50              |                                            |                                     |
| 11/15/2030              |                  |               | 197,557.50      | 197,557.50              | 2030                                       | 395,115                             |
| 05/15/2031              |                  |               | 197,557.50      | 197,557.50              |                                            |                                     |
| 11/15/2031              | 20,000           | 3.400%        | 197,557.50      | 217,557.50              | 2031                                       | 415,115                             |
| 05/15/2032              |                  |               | 197,217.50      | 197,217.50              |                                            |                                     |
| 11/15/2032              | 25,000           | 3.400%        | 197,217.50      | 222,217.50              | 2032                                       | 419,435                             |
| 05/15/2033              |                  |               | 196,792.50      | 196,792.50              |                                            |                                     |
| 11/15/2033              | 25,000           | 3.400%        | 196,792.50      | 221,792.50              | 2033                                       | 418,585                             |
| 05/15/2034              |                  |               | 196,367.50      | 196,367.50              |                                            |                                     |
| 11/15/2034              | 25,000           | 3.700%        | 196,367.50      | 221,367.50              | 2034                                       | 417,735                             |
| 05/15/2035              |                  |               | 195,905.00      | 195,905.00              |                                            |                                     |
| 11/15/2035              | 25,000           | 3.700%        | 195,905.00      | 220,905.00              | 2035                                       | 416,810                             |
| 05/15/2036              |                  |               | 195,442.50      | 195,442.50              |                                            |                                     |
| 11/15/2036              | 30,000           | 3.700%        | 195,442.50      | 225,442.50              | 2036                                       | 420,885                             |
| 05/15/2037              |                  |               | 194,887.50      | 194,887.50              |                                            |                                     |
| 11/15/2037              | 35,000           | 3.700%        | 194,887.50      | 229,887.50              | 2037                                       | 424,775                             |
| 05/15/2038              |                  |               | 194,240.00      | 194,240.00              |                                            |                                     |
| 11/15/2038              | 40,000           | 3.700%        | 194,240.00      | 234,240.00              | 2038                                       | 428,480                             |

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**\$10,000,000**  
**MUNICIPAL WATER AUTHORITY OF ALIQUIPPA**  
**Beaver County, Pennsylvania**  
**Water and Sewer Revenue Bonds, Series of 2019**

**Dated:** Date of Delivery**Interest Payable:** May 15 and November 15**Principal Due:** November 15**First Interest Payment:** May 15, 2019**Denomination:** Integral multiples of \$5,000**Form:** Book-Entry Only

| <b>Payment<br/>Date</b> | <b>Principal</b>       | <b>Coupon</b> | <b>Interest</b>        | <b>Debt<br/>Service</b> | <b>Fiscal<br/>Year<br/>Ended<br/>12/31</b> | <b>Fiscal Year<br/>Debt Service</b> |
|-------------------------|------------------------|---------------|------------------------|-------------------------|--------------------------------------------|-------------------------------------|
| 05/15/2039              |                        |               | \$193,500.00           | \$193,500.00            |                                            |                                     |
| 11/15/2039              | 45,000                 | 4.000%        | 193,500.00             | 238,500.00              | 2039                                       | 432,000                             |
| 05/15/2040              |                        |               | 192,600.00             | 192,600.00              |                                            |                                     |
| 11/15/2040              | 1,025,000              | 4.000%        | 192,600.00             | 1,217,600.00            | 2040                                       | 1,410,200                           |
| 05/15/2041              |                        |               | 172,100.00             | 172,100.00              |                                            |                                     |
| 11/15/2041              | 1,070,000              | 4.000%        | 172,100.00             | 1,242,100.00            | 2041                                       | 1,414,200                           |
| 05/15/2042              |                        |               | 150,700.00             | 150,700.00              |                                            |                                     |
| 11/15/2042              | 1,120,000              | 4.000%        | 150,700.00             | 1,270,700.00            | 2042                                       | 1,421,400                           |
| 05/15/2043              |                        |               | 128,300.00             | 128,300.00              |                                            |                                     |
| 11/15/2043              | 1,170,000              | 4.000%        | 128,300.00             | 1,298,300.00            | 2043                                       | 1,426,600                           |
| 05/15/2044              |                        |               | 104,900.00             | 104,900.00              |                                            |                                     |
| 11/15/2044              | 1,225,000              | 4.000%        | 104,900.00             | 1,329,900.00            | 2044                                       | 1,434,800                           |
| 05/15/2045              |                        |               | 80,400.00              | 80,400.00               |                                            |                                     |
| 11/15/2045              | 1,280,000              | 4.000%        | 80,400.00              | 1,360,400.00            | 2045                                       | 1,440,800                           |
| 05/15/2046              |                        |               | 54,800.00              | 54,800.00               |                                            |                                     |
| 11/15/2046              | 1,340,000              | 4.000%        | 54,800.00              | 1,394,800.00            | 2046                                       | 1,449,600                           |
| 05/15/2047              |                        |               | 28,000.00              | 28,000.00               |                                            |                                     |
| 11/15/2047              | 1,400,000              | 4.000%        | 28,000.00              | 1,428,000.00            | 2047                                       | 1,456,000                           |
| <b>TOTAL:</b>           | <u>\$10,000,000.00</u> |               | <u>\$10,055,218.00</u> | <u>\$20,055,218.00</u>  |                                            | <u>20,055,218</u>                   |

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