

PRELIMINARY OFFICIAL STATEMENT DATED _____, 2020

NEW ISSUE – FULL BOOK-ENTRY ONLY**RATINGS**

Fitch: “_____”

S&P “_____”

(See “RATINGS” herein)

In the opinion of Bond Counsel, under existing law and assuming compliance with the tax covenants described herein, and the accuracy of certain representations and certifications made by the City described herein, interest on the 2020A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended (the “Code”). Bond Counsel is also of the opinion that such interest is not treated as a preference item in calculating the alternative minimum tax imposed under the Code. Bond Counsel is further of the opinion that interest on the 2020A Bonds is exempt from personal income taxes of the State of California (the “State”) under present State law. See “TAX MATTERS” herein regarding certain other tax considerations.”

[INSERT CITY LOGO]

§ _____

City of Pasadena, California
Water Revenue/Refunding Bonds, 2020A Series

Dated: Date of Delivery

Due: June 1, as shown on the inside cover

This cover page contains certain information for general reference only. It is not intended to be a summary of the security or terms of this issue. Investors must read the entire Official Statement to obtain information essential to the making of an informed investment decision. Capitalized terms used on this cover page not otherwise defined shall have the meanings set forth herein.

The City of Pasadena, California (the “City”) is issuing its Water Revenue/Refunding Bonds, 2020A Series (the “2020A Bonds”) pursuant to a Water Revenue Bond Indenture, dated as of August 1, 2003, by and between the City and The Bank of New York Mellon Trust Company, N.A. (successor to BNY Western Trust Company), as trustee (the “Trustee”), as amended and supplemented, including as amended and supplemented by a Sixth Supplement to Water Revenue Bond Indenture, dated as of December 1, 2020 (the “Sixth Supplement”) (as so amended and supplemented, the “Indenture”).

The 2020A Bonds are being issued to provide moneys, together with certain other available funds, to (i) refund all of the City’s Water Revenue Bonds, Issue of 2010, 2010A Series (Taxable Build America Bonds – Direct Payment), (ii) finance the costs of acquisition and construction of certain capital improvements to the Water System, and (iii) pay costs of issuance of the 2020A Bonds, as more fully described herein. See “PLAN OF FINANCING” herein.

The 2020A Bonds are being issued in fully registered form and, when issued, will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York (“DTC”). DTC will act as securities depository of the 2020A Bonds. Beneficial ownership interests in the 2020A Bonds may be purchased in book-entry form only in denominations of \$5,000 principal amount or any integral multiple thereof. Interest on the 2020A Bonds will be payable semiannually on June 1 and December 1 of each year, commencing June 1, 2021. Payments of principal of, premium, if any, and interest on, the 2020A Bonds will be paid by the Trustee to DTC, which is obligated in turn to remit such principal, premium, if any, and interest to its DTC participants for subsequent disbursement to the beneficial owners of the 2020A Bonds.

The 2020A Bonds are subject to redemption prior to maturity as described herein. See “DESCRIPTION OF THE 2020A BONDS – Redemption” herein.

The 2020A Bonds are obligations payable only from the Water Fund of the City and certain other funds and accounts pledged under the Indenture on a parity with certain Bonds and Parity Debt heretofore or hereafter issued by the City in accordance with the Indenture as more fully described herein.

THE 2020A BONDS ARE SPECIAL, LIMITED OBLIGATIONS OF THE CITY. THE 2020A BONDS SHALL NOT BE DEEMED TO CONSTITUTE A DEBT OR LIABILITY OF THE CITY, THE STATE OF CALIFORNIA (THE “STATE”) OR OF ANY POLITICAL SUBDIVISION THEREOF WITHIN THE MEANING OF ANY CONSTITUTIONAL OR STATUTORY PROVISION, OR A PLEDGE OF THE FAITH AND CREDIT OF THE CITY, THE STATE OR OF ANY POLITICAL SUBDIVISION THEREOF, BUT SHALL BE PAYABLE, EXCEPT TO THE EXTENT OF CERTAIN AMOUNTS HELD UNDER THE INDENTURE PLEDGED THEREFOR, SOLELY FROM THE WATER FUND OF THE CITY. NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE CITY, THE STATE OR OF ANY POLITICAL SUBDIVISION THEREOF IS PLEDGED TO THE PAYMENT OF THE PRINCIPAL OF, PREMIUM, IF ANY, OR THE INTEREST ON THE 2020A BONDS. THE ISSUANCE OF THE 2020A BONDS SHALL NOT DIRECTLY OR INDIRECTLY OR CONTINGENTLY OBLIGATE THE CITY, THE STATE OR ANY POLITICAL SUBDIVISION THEREOF TO LEVY OR TO PLEDGE ANY FORM OF TAXATION WHATSOEVER THEREFOR OR TO MAKE ANY APPROPRIATION FOR THEIR PAYMENT.

MATURITY SCHEDULE
(SEE INSIDE COVER)

The 2020A Bonds will be sold by competitive sale on or about _____, 2020 pursuant to the Notice Inviting Bids dated _____, 2020. For additional information concerning the competitive sale of the 2020A Bonds, contact the City’s municipal advisor, Public Resources Advisory Group, Los Angeles, California. The 2020A Bonds will be offered when, as and if issued, sold and received by the Initial Purchaser, subject to the approval of Nixon Peabody LLP, Los Angeles, California, Bond Counsel, and certain other conditions. Public Resources Advisory Group, Los Angeles, California, is serving as Municipal Advisor to the City in connection with the issuance of the 2020A Bonds. Certain legal matters will be passed upon for the City by Michele Beal Bagneris, City Attorney of the City, and by Nixon Peabody LLP, Los Angeles, California, Disclosure Counsel. It is anticipated that the 2020A Bonds in definitive form will be available for delivery to DTC in New York, New York by Fast Automated Securities Transfer (FAST) on or about December 1, 2020.

Dated: _____, 2020

MATURITY SCHEDULE

\$ _____
CITY OF PASADENA, CALIFORNIA
WATER REVENUE/REFUNDING BONDS, 2020A SERIES

Maturity Date (June 1)	Principal Amount	Interest Rate	Yield	CUSIP*
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\$ _____ % Term 2020A Bonds due June 1, ____; Yield ____%; CUSIP _____
\$ _____ % Term 2020A Bonds due June 1, ____; Yield ____%; CUSIP _____

* CUSIP is a registered trademark of The American Bankers Association. CUSIP data herein is provided by CUSIP Global Services, managed by S&P Capital IQ Financial Services LLC on behalf of The American Bankers Association. CUSIP numbers have been assigned by an independent company not affiliated with the City, Pasadena Water and Power ("PWP") or the initial Purchaser and are included solely for the convenience of the holders of the 2020A Bonds. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Services. None of the City, PWP or the Initial Purchaser shall be responsible for the selection or correctness of the CUSIP numbers set forth herein. The CUSIP number for a specific maturity is subject to being changed after the delivery of the 2020A Bonds as a result of various subsequent actions including, but not limited to, a refunding in whole or in part of such maturity or as a result of the procurement of secondary market portfolio insurance or other similar enhancement by investors that is applicable to all or a portion of the 2020A Bonds.

CITY OF PASADENA

CITY COUNCIL

Terry Tornek, *Mayor*
Tyron A.L. Hampton, *Vice Mayor*
Margaret McAustin, *Council Member*
John J. Kennedy, *Council Member*
Gene Masuda, *Council Member*
Victor M. Gordo, *Council Member*
Steven Madison, *Council Member*
Andy Wilson, *Council Member*

CITY STAFF

Steve Mermell, *City Manager*
Matthew Hawkesworth, *Director of Finance*
Vicken Erganian, *Treasurer and Deputy Director of Finance*

CITY ATTORNEY

Michele Beal Bagneris

PASADENA WATER AND POWER STAFF

Gurcharan Bawa, *General Manager*
Eric Klinkner, *Assistant General Manager & Chief Deputy*
Shari M. Thomas, *Assistant General Manager for Finance, Administration and Customer Service*
Mitchell Dion, *Assistant General Manager for Water Delivery*
Kelly Nguyen, *Assistant General Manager for Power Supply*
Marvin Moon, *Assistant General Manager for Power Delivery*

SPECIAL SERVICES

MUNICIPAL ADVISOR

Public Resources Advisory Group
Los Angeles, California

BOND AND DISCLOSURE COUNSEL

Nixon Peabody LLP
Los Angeles, California

TRUSTEE

The Bank of New York Mellon Trust Company, N.A.
Los Angeles, California

No dealer, broker, salesperson or other person has been authorized by the City to give any information or to make any representations, other than those contained herein, and if given or made, such other information or representations must not be relied upon as having been authorized by any of the foregoing. 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 2020A Bonds in any jurisdiction in which such offer, solicitation or sale would be unlawful.

This Official Statement is not to be construed as a contract with the purchasers of the 2020A Bonds. Statements contained in this Official Statement involving any estimates, forecasts or matters of opinion, whether or not expressly so stated, are intended solely as such and not as a representation of fact.

The information set forth herein has been furnished by the City and other sources which are believed to be reliable, but is not guaranteed as to accuracy or completeness. The information and expressions of opinions 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 City or the Water System since the date hereof.

IN CONNECTION WITH THE OFFERING OF THE 2020A BONDS, THE INITIAL PURCHASER MAY OVER-ALLOT OR EFFECT TRANSACTIONS THAT MAY STABILIZE OR MAINTAIN THE MARKET PRICE OF SUCH 2020A BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME. THE INITIAL PURCHASER IN CONNECTION WITH ANY REOFFERING MAY OFFER AND SELL THE 2020A BONDS TO CERTAIN DEALERS, INSTITUTIONAL INVESTORS AND OTHERS AT PRICES LOWER THAN THE PUBLIC OFFERING PRICES STATED ON THE INSIDE COVER PAGE HEREOF AND SUCH PUBLIC OFFERING PRICES MAY BE CHANGED FROM TIME TO TIME BY THE INITIAL PURCHASER.

This Official Statement, including any supplement or amendment hereto, is intended to be filed with the Municipal Securities Rulemaking Board through the Electronic Municipal Market Access (EMMA) website. The City maintains a website. However, the information presented therein is not part of this Official Statement and should not be relied upon in making investment decisions with respect to the 2020A Bonds.

References to website addresses presented herein are for informational purposes only and may be in the form of a hyperlink solely for the reader's convenience. Unless specified otherwise, such websites and the information or links contained therein are not incorporated into, and are not part of, this Official Statement for purposes of, and as that term is defined in, Securities and Exchange Commission Rule 15c2-12.

CAUTIONARY STATEMENTS REGARDING FORWARD-LOOKING STATEMENTS IN THIS OFFICIAL STATEMENT

Certain statements included or incorporated by reference in this Official Statement constitute "forward-looking statements." Such statements are generally identifiable by the terminology used such as "plan," "expect," "estimate," "budget" or other similar words. The achievement of certain results or other expectations contained in such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements described to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. The City does not plan to issue any updates or revisions to those forward-looking statements if or when its expectations or events, conditions or circumstances on which such statements are based occur.

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OFFICIAL STATEMENT

§ _____
City of Pasadena, California
Water Revenue/Refunding Bonds, 2020A Series

INTRODUCTION

This Introduction is not a summary of this Official Statement, and is qualified by more complete and detailed information contained in the entire Official Statement. A full review should be made of the entire Official Statement, including the cover page and attached appendices. The offering of the 2020A Bonds to potential investors is made only by means of the entire Official Statement. Capitalized terms used but not defined in this Introduction shall have the meanings given such terms elsewhere in this Official Statement. Certain definitions of capitalized terms used and not otherwise defined in this Official Statement are set forth in APPENDIX D – “SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE.”

Purpose

The purpose of this Official Statement, which includes the cover page and Appendices hereto, is to set forth certain information in connection with the issuance and sale by the City of Pasadena, California (the “City”) of \$_____ aggregate principal amount of its Water Revenue/Refunding Bonds, 2020A Series (the “2020A Bonds”). The 2020A Bonds are being issued to provide moneys, together with certain other available funds, to (i) refund all of the City’s Water Revenue Bonds, Issue of 2010, 2010A Series (Taxable Build America Bonds – Direct Payment), (ii) finance the costs of acquisition and construction of certain capital improvements to the Water System, and (iii) pay costs of issuance of the 2020A Bonds, as more fully described herein. See “PLAN OF FINANCING.”

Authority for Issuance

The 2020A Bonds are authorized and issued pursuant to Article XIV of the Charter of the City, as amended (the “Charter”), an Ordinance adopted by the City Council of the City (the “City Council”) on January 23, 2017, and by a Water Revenue Bond Indenture, dated as of August 1, 2003, by and between the City and The Bank of New York Mellon Trust Company, N.A. (successor to BNY Western Trust Company), as trustee (the “Trustee”), as amended and supplemented, including as amended and supplemented by a Sixth Supplement to Water Revenue Bond Indenture, dated as of December 1, 2020 (the “Sixth Supplement”) (as so amended and supplemented, the “Indenture”). All Water Revenue Bonds issued pursuant to the Indenture are collectively referred to herein as the “Bonds.”

The City and the Water System

The City is a charter city of the State of California (the “State”), comprising approximately 23 square miles, in Los Angeles County in the northwestern portion of the San Gabriel Valley. See APPENDIX A – THE CITY OF PASADENA.” The City owns and operates a municipal water public utility (the “Water System”), established by the Charter. The Water System is managed and controlled by a department of the City, the Pasadena Water and Power Department (“PWP”), and supplies water to virtually all of the water customers within the City limits as well as water customers within a 3.2 square mile area outside the City limits, through its water facilities. For the Fiscal Year ended June 30, 2020, the Water System served approximately 38,193 metered accounts, and total water sales were approximately 11.3 million billing units. See “THE WATER SYSTEM.”

Security and Sources of Payment for the 2020A Bonds

On December 20, 2011, the City issued its Water Revenue Bonds, 2011A Series (the “2011A Bonds”) in the aggregate principal amount of \$29,770,000, of which \$15,065,000 currently remain outstanding.

On April 5, 2017, the City issued its Water Revenue Refunding Bonds, 2017A Series (the “2017A Bonds”) in the aggregate principal amount of \$15,395,000, of which \$13,095,000 currently remain outstanding.

The 2011A Bonds and the 2017A Bonds, together with the 2020A Bonds and any additional bonds hereafter issued under the Indenture are referred to herein as the “Bonds.”

The 2020A Bonds are an obligation payable exclusively from the Water Fund of the City and certain other funds and accounts pledged under the Indenture. The 2020A Bonds are secured by a pledge of and lien upon the Pledged Revenues of the Water System on a parity with other obligations of the Water System payable from the Water Fund and issued from time to time pursuant to the Indenture, including the outstanding 2011A Bonds, the 2017A Bonds and any additional Bonds or Parity Debt (as defined in the Indenture). See “SECURITY AND SOURCES OF PAYMENT FOR THE 2020A BONDS – Outstanding Bonds” and “– Additional Bonds and Parity Debt.”

The 2020A Bonds are special, limited obligations of the City. The 2020A Bonds shall not be deemed to constitute a debt or liability of the City, the State or of any political subdivision thereof within the meaning of any constitutional or statutory provision, or a pledge of the faith and credit of the City, the State or of any political subdivision thereof, but shall be payable, except to the extent of certain amounts held under the Indenture pledged therefor, solely from the Water Fund of the City. Neither the faith and credit nor the taxing power of the City, the State or of any political subdivision thereof is pledged to the payment of the principal of, premium, if any, or the interest on the 2020A Bonds. The issuance of the 2020A Bonds shall not directly or indirectly or contingently obligate the City, the State or any political subdivision thereof to levy or to pledge any form of taxation whatsoever therefor or to make any appropriation for their payment.

Nothing in the Indenture shall preclude the issuance or incurrence by the City of any indebtedness, installment sale obligation, lease obligation or other obligation of the City for borrowed money or interest rate swap agreement, which in the indenture, agreement, resolution or other instrument pursuant to which it is incurred or issued is expressly made subordinate and junior in right of payment from the Pledged Revenues or any portion thereof to the payment of Bonds and Parity Debt (“Subordinate Debt”).

Parity Reserve Fund

Pursuant to Section 1413 of Article XIV of the Charter, the City has established the Parity Reserve Fund. Upon the issuance of the 2020A Bonds, there will be on deposit in the Parity Reserve Fund an amount equal to the Reserve Fund Requirement (\$_____). Moneys held in the Parity Reserve Fund are pledged to and may be used solely for payment of debt service on the 2011A Bonds, the 2017A Bonds, the 2020A Bonds, any additional Bonds or any other Parity Debt secured thereby in the event that money in the Debt Service Fund or any comparable fund established for the payment of principal and interest on the 2011A Bonds, the 2017A Bonds, the 2020A Bonds any additional Bonds and any other Parity Debt secured thereby is insufficient therefor.

On such date the 2011A Bonds and the 2017A Bonds are defeased, paid or discharged in accordance with their terms and are no longer Outstanding for purposes of the Indenture, the Parity Reserve

Requirement shall be zero dollars and accordingly, all of the amounts held in the Parity Reserve Fund shall be released to the City to be used for lawful purposes. See “SECURITY AND SOURCES OF PAYMENT FOR THE 2020A BONDS – Parity Reserve Fund.”

Rate Covenant

The City has covenanted in the Indenture to prescribe, revise and collect such charges for the services, facilities and water furnished by the Water System so as to provide Gross Aggregate Revenues (as defined herein) at least sufficient to pay, as the same become due, interest on, and the principal of and redemption price of, the 2011A Bonds, the 2017A Bonds, the 2020A Bonds any additional Bonds and any other Parity Debt; all payments required for compliance with the Indenture, including payments required to be made into any Parity Reserve Fund; all payments required to be made with respect to any Subordinate Debt; all Operation and Maintenance Expenses; and all payments required to meet any other obligations of the City which are charges, liens, encumbrances upon or payable from the Gross Aggregate Revenues or any portion thereof and the charges shall be fixed so that in each Fiscal Year the Gross Aggregate Revenues less Operation and Maintenance Expenses will be at least equal to 1.10 times the amount necessary to pay principal and interest as the same become due on all the 2011A Bonds, the 2017A Bonds, the 2020A Bonds, any additional Bonds and any other Parity Debt. See “SECURITY AND SOURCES OF PAYMENT FOR THE 2020A BONDS – Rate Covenant.”

Other Matters

This Official Statement includes summaries of the terms of the 2020A Bonds, the Indenture, the Continuing Disclosure Agreement and certain contracts and other arrangements for the supply of water. The summaries of and references to all documents, statutes, reports and other instruments referred to herein do not purport to be complete, comprehensive or definitive, and each such summary and reference is qualified in its entirety by reference to each document, statute, report or instrument. The capitalization of any word not conventionally capitalized, or otherwise defined herein, indicates that such word is defined in a particular agreement or other document and, as used herein, has the meaning given it in such agreement or document.

Copies of the Indenture and the Continuing Disclosure Agreement are available for inspection at the offices of the City in Pasadena, California, and will be available upon request and payment of duplication costs from the Trustee.

Forward-Looking Statements

The statements contained in this Official Statement and in the Appendices hereto, and in any other information provided by PWP or the City, that are not purely historical, are forward-looking statements, including statements regarding PWP or the City’s expectations, hopes, intentions or strategies regarding the future. Prospective investors should not place undue reliance on forward-looking statements. All forward-looking statements included in this Official Statement are based on information available to PWP and the City on the date hereof, and PWP and the City assume no obligation to update any such forward-looking statements. It is important to note that PWP’s actual results could differ materially from those in such forward-looking statements.

The forward-looking statements herein are necessarily based on various assumptions and estimates and are inherently subject to various risks and uncertainties, including risks and uncertainties relating to the possible invalidity of the underlying assumptions and estimates and possible changes or developments in social, economic, business, industry, market, legal and regulatory circumstances and conditions and actions taken or omitted to be taken by third parties, including customers, suppliers and competitors, and legislative,

judicial and other governmental authorities and officials. Assumptions related to the foregoing involve judgments with respect to, among other things, future economic, competitive and market conditions and future business decisions, all of which are difficult or impossible to predict accurately and many of which are beyond the control of PWP and the City. Any of such assumptions could be inaccurate and, therefore, there can be no assurance that the forward-looking statements included in this Official Statement would prove to be accurate.

Additional Information

Additional information regarding the Official Statement may be obtained by contacting the Trustee or:

Director of Finance
City of Pasadena
100 N. Garfield Avenue, Room 353
Pasadena, California 91101-7215
(626) 744-4350

PLAN OF FINANCING

The 2020A Bonds are being issued to provide moneys, together with certain other available funds, to (i) refund all of the City's Water Revenue Bonds, Issue of 2010, 2010A Series (Taxable Build America Bonds – Director Payment), currently outstanding in the principal amount of \$25,425,000 (the "2010A Bonds"), (ii) finance the costs of acquisition and construction of certain capital improvements to the Water System, and (iii) pay costs of issuance of the 2020A Bonds.

A portion of the proceeds of the 2020A Bonds, together with certain other available funds, will be sufficient to redeem, on the day of closing and delivery of the 2020A Bonds, the 2010A Bonds at a redemption price equal to 100% of the principal amount thereof and accrued interest.

A description of capital improvements to the Water System expected to be financed with the proceeds of the 2020A Bonds are as follows:

Project Title	Description
Distribution Mains	Installation of new and replacement water mains at various locations, including installation of new gate valves, water service connections, fire hydrants and other improvements to water flows for fire protection.
Reservoir Improvements	Major renovation/seismic upgrade of Sunset Reservoir units, including roof replacement, relining the floors, replacement of inlet and outlet valves and improvement of structural supports.
Well Improvements	Replacement/improvement of existing wells and design/construction of new wells to improve local water supply and sustainability.
Meters and Services	Replacement of meters and equipment, including vaults, boxes and steel plates to upgrade efficiency of the water delivery system.

ESTIMATED SOURCES AND USES OF FUNDS

The estimated sources and uses of funds in connection with the 2020A Bonds are as follows:

Sources:

Principal Amount of 2020A Bonds	
Plus Original Issue Premium	
Transfer from Debt Service Fund.....	
Transfer from Parity Reserve Fund	
Total	<hr/>

Uses:

Redemption of the 2010A Bonds	
Deposit to Construction Account	
Deposit to Cost of Issuance Fund ⁽¹⁾	
Initial Purchaser's Discount	
Total	<hr/>

⁽¹⁾ Includes fees of Bond and Disclosure Counsel, the Trustee and the Municipal Advisor, rating agencies' fees, printing costs and other costs associated with the issuance of the 2020A Bonds.

DESCRIPTION OF THE 2020A BONDS

General

The 2020A Bonds will be dated their date of delivery and will bear interest from that date at the rates per annum and will mature on June 1 in the years set forth on the inside cover page of this Official Statement. Interest on the 2020A Bonds will be payable semiannually on June 1 and December 1, commencing June 1, 2021, and will be calculated on the basis of a 360-day year comprised of twelve 30-day months. The 2020A Bonds are being issued in fully registered form, and when issued, will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York ("DTC"). So long as Cede & Co. is the registered owner of the 2020A Bonds, references herein to the owners or registered owners shall mean Cede & Co., and not the beneficial owners of the 2020A Bonds. See APPENDIX C – BOOK-ENTRY ONLY SYSTEM."

Redemption

Optional Redemption. The 2020A Bonds maturing on and before June 1, 2030 are not subject to redemption prior to their respective stated maturities. The 2020A Bonds maturing on and after June 1, 2031 are subject to redemption prior to their respective stated maturities, at the option of the City, from any source of available funds, as a whole or in part on any date on or after June 1, 2030, at a Redemption Price equal to the principal amount of the 2020A Bonds called for redemption, together with accrued interest thereon to the date of redemption, without premium.

Mandatory Sinking Fund Redemption. The 2020A Bonds maturing on June 1, _____ shall also be subject to redemption prior to their stated maturity, in part, from mandatory sinking fund payments as specified below, commencing on June 1, _____, at a Redemption Price equal to the principal amount thereof plus accrued interest thereon to the date fixed for redemption without premium.

Mandatory Sinking Fund Payment Dates (June 1)	<u>Amount</u>
--	----------------------

* Maturity.

Selection of 2020A Bonds for Redemption. Whenever provision is made in the Sixth Supplement for the redemption of less than all of the 2020A Bonds, the maturities of the 2020A Bonds to be redeemed shall be specified by the City. In the case of partial redemption of less than all of the 2020A Bonds of any maturity, the Trustee shall select the particular 2020A Bonds to be redeemed, from all 2020A Bonds of the respective maturity not previously called for redemption, in authorized denominations, by lot in any manner which the Trustee in its sole discretion shall deem appropriate. The Trustee shall promptly notify the City in writing of the 2020A Bonds so selected for redemption.

Notice of Redemption

Notice of redemption shall be mailed by the Trustee, not less than thirty (30) nor more than sixty (60) days prior to the redemption date, to each Owner, the Securities Depositories and two or more Information Services. Notice of redemption to the Securities Depositories shall be given by telecopy, certified, registered or overnight mail or by such other method as may be requested by the Securities Depositories. Each notice of redemption shall state the date of such notice, the date of issue of the 2020A Bonds to which such notice relates, the redemption date, the Redemption Price, the place or places of redemption (including the name and appropriate address or addresses of the Trustee), the CUSIP number (if any) of the maturity or maturities, and, if less than all of any such maturity, the distinctive certificate numbers of the 2020A Bonds of such maturity to be redeemed and, in the case of 2020A Bonds to be redeemed in part only, the respective portions of the principal amount thereof to be redeemed. Each such notice shall also state that on said date there will become due and payable on each of said 2020A Bonds the Redemption Price thereof or of said specified portion of the principal amount thereof in the case of a 2020A Bond to be redeemed in part only, together with interest accrued thereon to the date fixed for redemption, and that from and after such redemption date interest thereon shall cease to accrue, and shall require that such 2020A Bonds be then surrendered at the address or addresses of the Trustee specified in the redemption notice. Neither the City nor the Trustee shall have any responsibility for any defect in the CUSIP number that appears on any 2020A Bond or in any redemption notice with respect thereto, and any such redemption notice may contain a statement to the effect that CUSIP numbers have been assigned by an independent service for convenience of reference and that neither the City nor the Trustee shall be liable for any inaccuracy in such numbers.

In the event of an optional redemption of 2020A Bonds, if the City shall not have deposited or otherwise made available to the Trustee the money required for the payment of the redemption price of the 2020A Bonds to be redeemed at the time of the mailing of notice of redemption, such notice of redemption shall state that the redemption is expressly conditioned upon the timely deposit of sufficient funds therefor with the Trustee.

Failure by the Trustee to give notice to any one or more of the Information Services or Securities Depositories or failure of any Owner to receive notice or any defect in any such notice shall not affect the sufficiency of the proceedings for redemption.

Effect of Redemption

When notice of redemption has been given, and when the amount necessary for the redemption of the 2020A Bonds called for redemption (principal and premium, if applicable) is set aside for that purpose, the 2020A Bonds designated for redemption shall become due and payable on the redemption date, and upon presentation and surrender of said 2020A Bonds, at the place specified in the notice of redemption, such 2020A Bonds shall be redeemed and paid at said redemption price, and no interest shall accrue on such 2020A Bonds called for redemption after the redemption date.

Debt Service Requirements

The following is the annual debt service schedule for the 2011A Bonds, the 2017A Bonds and the 2020A Bonds assuming no redemption other than mandatory sinking account redemptions.

Bond Year Ending June 1	Outstanding Bonds	2020A Bonds		
		Principal	Interest	Total
2021	\$ 2,370,840			
2022	2,913,430			
2023	2,856,030			
2024	2,802,530			
2025	2,732,680			
2026	2,673,930			
2027	2,617,743			
2028	2,559,018			
2029	2,499,105			
2030	2,469,225			
2031	2,471,985			
2032	2,466,125			
2033	2,475,000			
2034	1,209,500			
2035	1,207,250			
2036	1,207,500			
2037				
2038				
2039				
2040				
2041				
2042				
2043				
2044				
2045				
2046				
2047				
2048				
2049				
2050				
Total	\$37,531,890			

SECURITY AND SOURCES OF PAYMENT FOR THE 2020A BONDS

General

The 2020A Bonds are an obligation payable exclusively from the Water Fund of the City and certain other funds and accounts pledged under the Indenture. The 2020A Bonds are secured by a pledge of and lien upon the Pledged Revenues of the Water System on a parity with other obligations of the Water System payable from the Water Fund and issued from time to time pursuant to the Indenture, including the 2011A Bonds, the 2017A Bonds and any additional Bonds or Parity Debt hereafter issued, and a pledge of amounts in the Parity Reserve Fund, except for amounts held in the Rebate Fund. See “Outstanding Bonds” and “Additional Bonds and Parity Debt” below.

“Pledged Revenues” means all Gross CIC Revenues and all Net Other Water Revenues. “Net Other Water Revenues” means all Other Water Revenues, all amounts deposited in the Water Fund and all interest earnings or income thereon or therefrom, less all Operation and Maintenance Expenses.

“Other Water Revenues” means shall mean all revenues from rates, fees and charges for providing water service to persons and real property and all other fees, rents and charges and other revenues derived by the City from the ownership, operation, use or service of the Water System, including contributions in aid of construction, but not including the CIC Revenues; provided, however, there shall be excluded therefrom any amounts reimbursed to the City by the United States of America pursuant to Section 54AA of the Code or any future similar program.

“Gross CIC Revenues” means all CIC Revenues, all amounts deposited in the CIC Account and all interest earnings or income thereon or therefrom. “CIC Revenues” means all capital improvement charges collected and received pursuant to Chapter 13.20.035 of Title XIII of the Pasadena Municipal Code and interest earned thereon.

“Rebate Fund” means those amounts on deposit and held by the Trustee to the extent required to satisfy the requirement to make rebate payment to the United States pursuant to the Code.

“Parity Debt” means any indebtedness, installment sale obligation, lease obligation or other obligation of the City for borrowed money or interest rate swap agreement having an equal lien and charge upon the Pledged Revenues, therefore payable on a parity with the Bonds (whether or not any Bonds are Outstanding).

The 2020A Bonds are special, limited obligations of the City. The 2020A Bonds shall not be deemed to constitute a debt or liability of the City, the State or of any political subdivision thereof within the meaning of any constitutional or statutory provision, or a pledge of the faith and credit of the City, the State or of any political subdivision thereof, but shall be payable, except to the extent of certain amounts held under the Indenture pledged therefor, solely from the Water Fund of the City. Neither the faith and credit nor the taxing power of the City, the State or of any political subdivision thereof is pledged to the payment of the principal of, premium, if any, or the interest on the 2020A Bonds. The issuance of the 2020A Bonds shall not directly or indirectly or contingently obligate the City, the State or any political subdivision thereof to levy or to pledge any form of taxation whatsoever therefor or to make any appropriation for their payment.

Rate Covenant

The City has covenanted in the Indenture to prescribe, revise and collect such charges for services, facilities and water furnished by the Water System which, after making allowances for contingencies and error in the estimates, will provide Gross Aggregate Revenues at least sufficient to pay: (a) as the same become due, the interest on and principal and Redemption Price of the 2011A Bonds, the 2017A Bonds, the 2020A Bonds and any additional Bonds or other Parity Debt; (b) all payments required for compliance with the Indenture, including payments required to be made into the Parity Reserve Fund; (c) all payments required to be made with respect to any Subordinate Debt; (d) all Operation and Maintenance Expenses; and (e) all payments required to meet any other obligations of the City which are charges, liens or encumbrances upon or payable from the Gross Aggregate Revenues or any portion thereof; and the charges shall be fixed so that in each Fiscal Year the Gross Aggregate Revenues less Operation and Maintenance Expenses will be at least equal to 1.10 times the amount of the Annual Debt Service. "Gross Aggregate Revenues" means all Gross CIC Revenues and Other Water Revenues, all amounts deposited in the Water Fund and all interest earnings or income thereon or therefrom.

The City's rate covenant is subject to compliance by the City with the provisions of Article XIID of the California State Constitution. See "CONSTITUTIONAL AND STATUTORY LIMITATIONS ON TAXES AND APPROPRIATIONS – Articles XIIC and XIID of the California Constitution."

The Water Fund

General. The Charter establishes the Water Fund and permits the establishment by ordinance of such funds as the City Council may deem necessary to facilitate the issuance and sale of Bonds or for the protection or security of the Owners of Bonds.

Under the provisions of the Charter, all moneys and property received by the City in payment for water and for any service rendered in connection therewith, or from the sale, lease and other disposition of any property acquired with funds or property of the Water System must be deposited in the Water Fund. The Charter further provides that disbursement may be made directly from the Water Fund for the following purposes:

- (1) the necessary or proper expenses of conducting the Water System, the operation and maintenance of its works, plants and distributing systems; the acquisition and improvement of facilities; and the publishing of reports;
- (2) the payment of interest and principal on bonds issued for the purposes of the Water System;
- (3) the formation of surplus or reserves for the future needs of the Water System and for unforeseen emergencies; and
- (4) the repayment of advances made from other funds of the City.

Reimbursements to General Fund. Municipal Code Section 1408 "Annual Contribution for any Municipal Purpose" for the City of Pasadena states that an amount equal to 6% of the gross income of the Water fund received during the previous fiscal year from the sale of water at rates and charges fixed by ordinance shall be transferred to the City's General Fund.

In compliance with California Proposition 218, the City eliminated the General Fund Transfer from the Water Fund in fiscal year 2014. To ensure that the Water Fund continues to pay a share of the citywide

services directly benefiting Water System customers, the City evaluated these costs in a cost of service study completed in 2014. Beginning fiscal year 2015 and based on the results of the cost of service study completed in 2014, the Water Fund pays the General Fund for the direct cost of services provided by City departments. The cost of service study resulted in an annual reimbursement of approximately \$1.5 million for support services provided primarily by Police, Fire, and Public Works.

The following table sets out the reimbursements from the Water Fund to the City's General Fund for the last four Fiscal Years and the budgeted transfer for the current Fiscal Year:

TABLE 1
REIMBURSEMENTS TO THE GENERAL FUND
(Dollar Amounts in Thousands)

<u>Fiscal Year</u>	<u>Reimbursement Amount</u>
2017	\$1,544
2018	1,574
2019	1,544
2020	1,544
2021 ⁽¹⁾	1,544

⁽¹⁾ Adopted Budget.

Section 1410 of the Charter provides that any surplus or reserves in the Water Fund may be temporarily used for other municipal purposes if there are insufficient funds in the City Treasury to pay the current expenses of the general government of the City before the collection of taxes levied in any Fiscal Year. Should moneys from the Water Fund be used pending the receipt of taxes, the amount so used shall be repaid not later than February 15 of the same Fiscal Year. To date, no temporary transfer of funds between the Water Fund and the City's General Fund has occurred.

The Indenture provides that all moneys at any time held in the Water Fund will be held in trust for the benefit of Owners of the 2011A Bonds, the 2017A Bonds, the 2020A Bonds and any other Bonds and Parity Debt and will be disbursed, allocated and applied solely for the uses and purposes set forth in the Indenture.

Capital Improvements Charge Account

Pursuant to Title XIII, Chapter 13.20.035 of the Pasadena Municipal Code, the City established a capital improvements charge ("CIC") to be added to water rates to recover the capital improvement costs of the Water System and to fund a capital improvements charge account (the "CIC Account") to be held in the Water Fund of the City and funded with all CIC Revenues received by the City. Funds on deposit in the CIC Account may only be used to pay capital improvement-related debt service, to fund capital improvements to the Water System and to fund reimbursements to the City's General Fund.

Parity Reserve Fund

The Indenture establishes the Parity Reserve Fund to be held by the Trustee. The Parity Reserve Fund is required to be maintained in an amount equal to the Reserve Fund Requirement. "Reserve Fund Requirement" is defined in the Indenture to mean, as of any date of determination and excluding therefrom any Parity Debt for which no reserve fund is to be maintained or for which a separate reserve fund is to be maintained, the least of (a) ten percent (10%) of the initial offering price to the public of each series of Bonds and Parity Debt to be secured by the Parity Reserve Fund as determined under the Code, or (b) the

Maximum Annual Debt Service on all Bonds and Parity Debt to be secured by the Parity Reserve Fund, or (c) one hundred twenty-five percent (125%) of the Average Annual Debt Service on all Bonds and Parity Debt to be secured by the Parity Reserve Fund, all as computed and determined by the City; provided that such requirement (or any portion thereof) may be provided by one or more policies of municipal bond insurance or surety bonds issued by a municipal bond insurer if the obligations insured by such insurer have ratings at the time of issuance of such policy in one of the two highest rating categories of Moody's Investors Service ("Moody's") and Standard & Poor's Ratings Services, a division of the McGraw-Hill Companies, Inc. ("S&P") or by a letter of credit issued by a bank or other institution if the obligations issued by such bank or other institution have ratings at the time of issuance of such letter of credit in one of the two highest rating categories of Moody's and Standard & Poor's.

Upon the issuance of the 2020A Bonds, there will be on deposit in the Parity Reserve Fund an amount equal to the Reserve Fund Requirement (\$_____). Money in the Parity Reserve Fund is pledged to, and shall be used solely for, the purpose of paying the principal of and interest on the 2011A Bonds, the 2017A Bonds, the 2020A Bonds and any additional Bonds and any Parity Debt to be secured by the Parity Reserve Fund in the event that money in the Debt Service Fund is insufficient therefor, and for that purpose money shall be transferred from the Parity Reserve Fund to the Debt Service Fund. Whenever money is transferred from the Parity Reserve Fund an equal amount of money is required to be transferred to the Parity Reserve Fund not later than twelve months thereafter.

On such date the 2011A Bonds and the 2017A Bonds are defeased, paid or discharged in accordance with their terms and are no longer Outstanding for purposes of the Indenture, the Parity Reserve Requirement shall be zero dollars and accordingly, all of the amounts held in the Parity Reserve Fund shall be released to the City to be used for lawful purposes.

Outstanding Bonds

Upon the issuance of the 2020A Bonds and the redemption of all of the 2010A Bonds being refunded thereby, there will be Outstanding under the Indenture \$_____ aggregate principal amount of Bonds, consisting of \$15,065,000 principal amount of the 2011A Bonds, \$13,095,000 principal amount of 2017A Bonds and \$_____ principal amount of the 2020A Bonds.

Additional Bonds and Parity Debt

The Indenture provides that no additional indebtedness of the City payable out of the Water Fund on a parity with the 2011A Bonds, the 2017A Bonds, the 2020A Bonds, any additional Bonds and any other Parity Debt shall be created or incurred unless:

- (a) no Event of Default shall have occurred and then be occurring;
- (b) in the case of issuance of additional Bonds, the aggregate principal amount of Bonds issued under the Indenture shall not exceed any limitation imposed by law or otherwise;
- (c) in the case of issuance of additional Bonds, there shall be deposited in the Parity Reserve Fund an amount of money so as to increase the amount of deposit therein to the Reserve Fund Requirement; and
- (d) the City shall have placed on file with the Trustee a certificate of the City certifying that "A" less "B" shall be at least equal to 1.10 times the amount of Annual Debt Service during the immediately succeeding Fiscal Year on all Bonds or Parity Debt then outstanding and the additional Bonds or Parity Debt then proposed to be issued.

“A” equals the sum of (i) Gross Aggregate Revenues for any period of twelve (12) consecutive months during the eighteen (18) months immediately preceding the date on which any additional Bonds or Parity Debt will become outstanding, plus (ii) the amount by which the City projects Gross Aggregate Revenues for any such period described in (i) would have increased had increases in rates, fees and charges during such period of twelve (12) months been in effect throughout such period of twelve (12) months; plus (iii) the amount by which the City projects Gross Aggregate Revenues will increase during a period of twelve (12) months commencing on the date of issuance of any such additional Bonds or Parity Debt as a result of increases in rates, fees and charges approved by the City Council prior to such date of issuance (other than those referenced in (ii) above) and which will be imposed during such twelve (12) month period).

“B” equal the amount projected for Operation and Maintenance Expenses in the twelve (12) month period following the date of issuance of any such additional Bonds or Parity Debt or in the twelve (12) month period following completion of improvements to the Water System to be financed with the proceeds of such additional Bonds or Parity Debt, whichever is greater,

However, the Indenture provides that there is no limitation on the City’s ability to issue Bonds at any time to refund Bonds or Parity Debt; provided, however, that the aggregate Annual Debt Service with respect to any such refunding Bonds through the date of maturities thereof shall not exceed the aggregate Annual Debt Service with respect to the Bonds or Parity Debt being refunded.

“Event of Default” means:

- (a) a default in the due and punctual payment of the principal or redemption price of any Bonds when and as the same shall become due and payable, whether at maturity as therein expressed, by proceedings for redemption, by declaration or otherwise in the amounts and at the times provided therefor;
- (b) a default in the due and punctual payment of any installment of interest on any Bond when and as such interest installment shall become due and payable;
- (c) the failure by the City to observe or perform any covenant, condition, agreement or provision in the Indenture on its part to be observed or performed, other than as referred to above in paragraph (a) and (b) for a period of thirty (30) days after written notice, specifying such failure and requesting that it be remedied, has been given to the City by the Trustee; except that, if such failure can be remedied but not within such thirty (30) day period and if the City has taken all action reasonably possible to remedy such failure within such thirty (30) day period, such failure shall not become an Event of Default for so long as the City shall diligently proceed to remedy same in accordance with and subject to any directions or limitations of time established by the Trustee;
- (d) a default by the City under any agreement governing any Parity Debt and the continuance of such default beyond the therein stated grace period, if any, with respect to such default;
- (e) the filing by the City of a petition in voluntary bankruptcy for the composition of its affairs or for its corporate reorganization under any state or federal bankruptcy or insolvency law, or an assignment by the City for the benefit of creditors, or the admission by the City in writing to its insolvency or inability to pay debts as they mature, or the consent by the City in writing to the appointment of a trustee or receiver for itself;

- (f) the entering by a court of competent jurisdiction of an order, judgment or decree declaring the City insolvent, or adjudging it bankrupt, or appointing a trustee or receiver of the City, or approving a petition filed against the City seeking reorganization of the City under any applicable law or statute of the United States or any state thereof, and such order, judgment or decree shall not be vacated or set aside or stayed within sixty (60) days from the date of the entry thereof; or
- (g) the assumption, under the provisions of any other law for the relief or aid of debtors by any court of competent jurisdiction of custody or control of the City or of the Gross Aggregate Revenues and such custody or control shall not be terminated within sixty (60) days from the date of assumption of such custody or control.

Nothing in the Indenture limits the ability of the City to issue or incur obligations which are junior or subordinate to the payment of the principal, premium, interest and reserve fund requirements for the 2011A Bonds, the 2017A Bonds, the 2020A Bonds, any additional Bonds and all other Parity Debt and which subordinated obligations are payable as to principal, premium, interest and reserve fund requirements, if any, only out of Pledged Revenues after the prior payment of all amounts then due and required to be paid or set aside under the Indenture from Pledged Revenues for principal, premium, interest and reserve fund requirements for the 2011A Bonds, the 2017A Bonds, the 2020A Bonds, any additional Bonds and all other Parity Debt, as the same become due and payable and at the times and in the manner as required in the Indenture or any documents providing for the issuance or incurrence of Parity Debt.

Other Covenants of the City

In addition to the covenant described under the subsection “Rate Covenant” above, under the Indenture, the City makes certain other covenants, including covenants relating to the operation of the Water System, insurance covenants and covenants related to the tax-exempt status of the 2020A Bonds. See APPENDIX D – “SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE.”

Investment of Funds

All moneys held in the funds and accounts established pursuant to the Indenture will be invested solely in Investment Securities. See APPENDIX D – “SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE.”

Limitations on Remedies

In addition to the limitations on remedies contained in the Indenture, the rights of the Owners of the 2020A Bonds are subject to the limitations on legal remedies against cities and other public agencies in the State. Additionally, enforceability of the rights and remedies of the Owners of the 2020A Bonds, and the obligations incurred by the City, may become subject to the following: the federal Bankruptcy Code and applicable bankruptcy, insolvency, reorganization, moratorium, or similar laws relating to or affecting the enforcement of creditor’s rights generally, now or hereafter in effect; equity principles which may limit the specific enforcement under State law of certain remedies; the exercise by the United States of America of the powers delegated to it by the Constitution; and the reasonable and necessary exercise, in certain exceptional situations, of the police powers inherent in the sovereignty of the State and its governmental bodies in the interest of serving a significant and legitimate public purpose. The opinion to be delivered by Nixon Peabody LLP, Bond Counsel, concurrently with the issuance of the 2020A Bonds, that the 2020A Bonds constitute valid and binding limited obligations of the City payable from and secured by a pledge of Pledged Revenues as and to the extent provided in the Indenture, will be subject to the limitations described above and the various other legal opinions to be delivered concurrently with the issuance of the 2020A

Bonds will be similarly qualified. In the event the City fails to comply with its covenants under the Indenture or to pay principal of or interest on the 2020A Bonds, there can be no assurance that remedies will be available to fully protect the interests of the holders of the 2020A Bonds. Bankruptcy proceedings, or the exercise of powers by the federal or State government, if initiated, could subject the Owners of the 2020A Bonds to judicial discretion and interpretation of their rights in bankruptcy or otherwise, and consequently may entail risks of delay, limitation, or modification of their rights. See APPENDIX F – “PROPOSED FORM OF OPINION OF BOND COUNSEL.”

PASADENA WATER AND POWER

Organization and Management

The City is a charter city of the State. Under the provisions of the California Constitution and Article XIV of the Charter, the City owns and operates both water and electric public utilities for the benefit of its residential and business community. PWP is under the management and control of the City Manager, subject to the powers and duties vested in the City Council, and is supervised by the General Manager who is responsible for design, construction, maintenance and operation of the water and electric utilities. PWP is responsible for the Water System and the City’s electric system (the “Electric System”). The 2020A Bonds are not secured by or payable from revenues of the Electric System.

In addition to the Water System and the Electric System divisions, PWP is organized into five separate business units. This structure allows for a higher level of accountability as well as the creation of individual cost centers and profit centers. This information is used for tracking costs and supplying detailed information in rate design decisions. These business units are briefly described as follows:

General Manager’s Office-Customer Relations & Legislative Business Unit – This Unit is part of the General Manager’s Office and is responsible for customer relations, regulatory affairs, and strategic planning and long-term resources. This Unit is also responsible for environmental and legislative matters impacting the utility.

Finance, Administration and Customer Service Business Unit – This unit develops and executes PWP’s overall financial strategy and ensures its financial integrity. This unit is responsible for the financial resources of PWP and for providing relevant information to the operating units for decision making purposes. This unit plans and oversees the financial aspects, administrative support functions and all cross-functional operations and systems for PWP. The responsibilities of this unit include the operating budget, capital budget and financing, financial analysis and planning, financial management, administration, billing, call center, meter reading and customer care services, risk management, information systems and technology and materials management.

Water Delivery Business Unit – This unit is responsible for the procurement, production and delivery of water as well as the planning, design and construction of the local water distribution system. This unit also operates and maintains the local water supply resources and distribution system.

Power Supply Business Unit – This unit is responsible for effectively managing PWP’s energy portfolio, including strategic long-term resource power generation, long-term power contracts, short-term electric energy and ancillary services transactions and natural gas procurement to provide competitively-priced energy to PWP’s electric customers. This unit is also responsible for energy scheduling to ensure reliable delivery of electricity and the operation of generating units located within the City.

Power Delivery Business Unit – This unit is responsible for the design, construction, operation and maintenance of the local power distribution system to provide the safe and reliable delivery of electricity, load dispatch operations and is responsible for implementing the Power Distribution System Master Plan.

The following are biographical summaries of PWP’s senior management:

GURCHARAN BAWA, General Manager. Prior to his appointment to the current position, Mr. Bawa was the Assistant General Manager for Power Supply. Mr. Bawa has been with PWP for 24 years working in the Power Production field managing regulatory and environmental issues. He was responsible for evaluating renewable energy resources and incorporating these assets into PWP’s overall energy resource portfolio. He was also responsible for managing long term energy resources and contracts. He received his Mechanical Engineering degree from S.V.R. College of Engineering and Technology, Surat, India. He is a licensed Professional Engineer in Mechanical and Civil Engineering in the State of California.

ERIC KLINKNER, Assistant General Manager & Chief Deputy. Mr. Klinkner has been with PWP since 1995. He served as PWP’s Manager of Power Resources and Business Unit Director for Power Supply and was appointed to his present position in August 2004. In his current position, he is responsible for regulatory affairs, strategic planning and long-term resource and environmental issues. Mr. Klinkner is also responsible for legislative issues impacting PWP and oversees the customer relations, marketing and customer communications functions. Mr. Klinkner previously worked at the Los Angeles Department of Water and Power (“LADWP”) where he started in power resource planning. He has a master’s degree in mechanical engineering from California State University-Northridge and is a state registered professional engineer.

SHARI M. THOMAS, Assistant General Manager for Finance, Administration and Customer Service. Ms. Thomas joined PWP in January 2006. She began her career with the City of Pasadena in 2002 as the Deputy Director of Finance. She previously worked for the City of Riverside for nearly 15 years in various financial positions. Ms. Thomas is currently responsible for financial planning and budgeting, cost of service analysis and rate setting, information technology for PWP and customer service. She is also responsible for risk management and settlements functions related to energy transactions and the materials handling and inventory management activities. She completed her Bachelor of Science degree with majors in Accounting and Finance in Minnesota and has also completed the University of Wisconsin’s Advanced Governmental Finance Institute.

MITCHELL DION, Assistant General Manager for Water Delivery. Mr. Dion joined PWP in December 2017. Mr. Dion has held senior management positions for public agencies, investor owned utilities and consulting services throughout the Western US. His broad utility experience is primarily in water and waste water systems with extensive use of reclaimed water. As a former General Manager of water utilities in Northern and Southern California, Mr. Dion offers a distinctive perspective of California water issues and brings strong relationships to build collaboration and partnerships. Mr. Dion served in the Marines and his extensive military career includes a unique combination of engineering and policy decision making from overseeing base operations, as well as, working within the legislature at both the State and Federal levels. Mitch holds a Master’s Degree from the University of Southern California Viterbi School of Engineering, certification as a water/wastewater operator and has extensive technical training. His awards include recognition by the US EPA for emergency management and the Association of Civil Engineers overseeing design and construction of environmentally sustainable facilities.

KELLY NGUYEN, Assistant General Manager for Power Supply. Ms. Nguyen joined the PWP in April 2019. She has 20 years of industry experience, previously serving as the General Manager of Vernon Public Utilities. Before this, she worked at Southern California Public Power Authority (SCPPA), Anaheim Public Utilities, and the California Power Exchange. She has served in various

capacities with a number of committees and associations including Vice President of SCPPA, member of Western Systems Power Pool Executive Committee, California Utilities Emergency Association Alternate Board, California Municipal Utilities Association, and American Public Power Association. She has a Bachelor of Science in Business Administration from California State University, Los Angeles and has specialized training in energy system procedures, protocols, and utility compliance policies through the Western Electric Coordinating Council, North America Energy Reliability Corporation, and training in market operations and Cap & Trade through California Independent System Operator.

MARVIN MOON, Assistant General Manager for Power Delivery. Mr. Moon joined the PWP team as the Assistant General Manager of Power Delivery in May 2018 after 35 years of service with the Los Angeles Department of Water and Power (“LADWP”). He has served in various engineering capacities including Manager of Distribution Engineering and Customer New Business. For the past ten years, he was the Director of the Power Engineering Division at LADWP. Mr. Moon has been the recipient of several City of Los Angeles Productivity Awards. He has received the City of Los Angeles Mayor’s Innovation Award twice, and has been recognized as an innovator by the Electric Power Research Institute. His division within PWP provides electric service through its Power Engineering, Transmission and Distribution, Substation and Power Dispatch sections. Mr. Moon is also a supporting management sponsor for PWP’s electric transportation program.

Municipal Services Committee

In 1997, the City Council approved an ordinance creating a standing committee of the City Council known as the Deregulation Committee. In 2001, the responsibilities of the Deregulation Committee were expanded to include other City enterprise services and the Deregulation Committee was re-named the Municipal Services Committee. The purpose of the Municipal Services Committee is to aid the City Council in addressing the multi-dimensional issues associated with utility operations, both electric and water. The Municipal Services Committee provides oversight and input to aid the City administration in focusing its efforts to present clear, cogent recommendations regarding all aspects of enterprise operations, drawing on the perspective of City management, labor, the community and other interested parties. In addition, it provides a forum to work directly with City staff to achieve City Council objectives, and serves as the workshop forum for enterprise issues. The Municipal Services Committee is currently composed of three members of the City Council and the Mayor.

THE WATER SYSTEM

General

The Water System has been distributing water to the City’s customers since 1912. The area served by the Water System encompasses approximately 26.2 square miles, 3.2 square miles of which lie outside of the incorporated City boundary. Of the total 38,193 water meters, 31,720 meters, or 83%, are within the City limits and an additional 6,473 meters, or 17%, are outside the City limits. In Fiscal Year 2020, the Water System provided water service to a total population of approximately 170,402 people. During this period, water sales within the City limits were about 22,277 acre-feet, or 86% of the total water sales, while approximately 3,609 acre-feet, or 14% of the total water sold was to customers located outside the City limits. (An acre-foot is the amount of water that will cover one acre to a depth of one foot and equals 325,851 gallons.)

The major facilities of the Water System consist of: (i) 17 groundwater wells (of which seven are operable) (ii) five imported water connections on the Metropolitan Water District Upper Feeder, (iii) 95 million gallons of treated water storage capacity in 12 storage reservoirs (including the 50 million gallon Morris Jones Reservoir), (iv) 19 booster pumping stations supplying 23 different pressure zones,

(v)1 chlorination station, (vi) 30 pressure reducing stations, and (vii) approximately 520 miles of transmission and distribution pipelines.

The peak water sales month for Fiscal Year 2020 occurred in September 2019, when 3,045 acre-feet or 992 million gallons were sold, while April 2020 was the low sales month for the Fiscal Year, when only 1,500 acre-feet or 489 million gallons were sold. The following table sets forth statistical information relating to the Water System during the Fiscal Years shown.

**TABLE 2
WATER STATISTICS**

	Fiscal Year Ended June 30,				
	2016	2017	2018	2019	2020
Population Served Inside City Limits	141,023	143,333	144,388	144,686	144,842
Population Served Outside City Limits	<u>24,886</u>	<u>25,294</u>	<u>25,480</u>	<u>25,533</u>	<u>25,560</u>
Total Population Served	165,909	168,627	169,868	170,219	170,402
Rainfall in inches (October to September)	12.2	21.3	7.9	26.5	20.8
Peak Day Distribution (Million Gallons)	30.4	33.0	34.5	33.6	29.7
Average Daily Distribution (Million Gallons)	23.2	24.6	24.8	23.5	23.1

Source: Pasadena Water and Power Department.

Water Production

The area served by the Water System receives its water supply from three sources: (i) Raymond Basin surface water, (ii) Raymond Basin groundwater and (iii) imported water. PWP imports water from the Metropolitan Water District of Southern California (“MWD”) and neighboring water agencies. From 2000 to 2019, PWP’s water supply included 37% local groundwater and 63% imported water.

During Fiscal Year 2020, PWP purchased approximately 66% of its water from MWD. It pumped approximately 33% from its wells, and received less than 1% from interconnections with neighboring water agencies. The Water System has adequate production and firm purchase capacity to meet the City customers’ needs. The following table illustrates the total water pumped from Water System wells and the amount of water purchased during the five Fiscal Years shown.

**TABLE 3
ANNUAL WATER PRODUCTION
(acre-feet)**

	Fiscal Year Ended June 30,				
	2016	2017	2018	2019	2020
Purchased from MWD and Neighboring Agencies	16,237	17,614	19,824	18,130	18,738
Percentage of Total Supply	62.6%	63.9%	67.3%	64.5%	66.5%
From Water System Wells	9,702	9,962	9,641	9,964	9,439
Percentage of Total Supply	37.4%	36.1%	32.7%	35.5%	33.5%
Total Production	25,939	27,576	29,465	28,094	28,177

Source: Pasadena Water and Power Department.

Current Water Supply

As noted above, Pasadena’s current water supply consists of three main sources: local groundwater from the Raymond Basin, local surface water from the Arroyo Seco and Eaton Wash infiltrated into Raymond Basin, and imported water purchased from MWD.

Raymond Basin

Located in the eastern portion of Los Angeles County, the Raymond Basin (“Raymond Basin”) is an alluvial valley approximately 40 square miles in area, supported by deposits of gravel, sands, silt and clay, with a capacity of more than 800,000 acre-feet of water. The Raymond Basin is bound by the San Gabriel Mountains to the north, the San Rafael Hills to the west, and the Raymond Fault to the south/southeast. The San Gabriel Mountains rise to over 10,000 feet in elevation north of the Raymond Basin. The Raymond Basin is divided into three subareas: the Monk Hill subarea in the northwest, the Pasadena subarea in the center, and the Santa Anita subarea on the east. PWP pumping and storage rights are in the Monk Hill and Pasadena subareas. The Raymond Basin Management Board acts as the Watermaster.

PWP currently utilizes two water supplies within the Raymond Basin. The first is Raymond Basin groundwater, which is pumped directly into the distribution system, and the second is local surface water, which is diverted and spread for groundwater pumping credits. The Raymond Basin also provides the City with vital emergency water supplies. Should the imported water supply from MWD be interrupted due to an emergency, such as drought, regulatory constraints, contamination or earthquake, groundwater would be available to meet the City’s water demands.

Raymond Basin Groundwater. Over the last 20 years, Raymond Basin groundwater has accounted for approximately 40% of PWP’s total water production. There are currently 17 groundwater production wells (of which seven are operable) that can pump water into the PWP distribution system up to the decreed right of 10,304 acre-feet/year.

Beginning on July 1, 2009, member agencies of the Raymond Basin (including PWP) that pump groundwater from the Pasadena Sub-basin of the Western Unit of the Raymond Basin voluntarily reduced their decreed right by 6% per year to a total reduction of 30% by June 30, 2014. The voluntary reduction was to address lowering of the groundwater table. Since July 1, 2014 the 30% reduction in decreed rights has reduced PWP’s groundwater right from 12,807 acre-feet/year (8,343 acre-feet/year in Pasadena sub-

basin and 4,464 in Monkhill sub-basin) to the current level of 10,304 acre-feet/year (5,840 acre-feet/year in Pasadena sub-basin and 4,464 in Monkhill sub-basin). In addition, the City gets spreading credits at the Arroyo Seco and Eaton Canyon spreading grounds. PWP has increased its annual groundwater extraction rights by an average of 1,700 acre-feet/year since 2000 providing the City with approximately 12,000 acre-feet of annual pumping rights.

The diversion rights and the recapture rights described above are set forth in the Raymond Basin Judgment (“Judgment”), which adjudicated the groundwater rights in the Raymond Basin as described below.

On September 23, 1937, in an effort to alleviate overdraft conditions in the Raymond Basin, the City initiated proceedings in Superior Court against Alhambra and 29 other major Raymond Basin water users. The result of this suit, the Raymond Basin Judgment, was signed on December 23, 1944. With this Judgment, the Raymond Basin became the first adjudicated groundwater basin in California. In the Judgment, each pumper is assigned a “present unadjusted right” corresponding to the average amount of water that they pumped in the five years prior to the City’s suit. The City’s “present unadjusted right” is 12,946 acre-feet/year. Each pumper’s “present unadjusted right” is scaled down to create the “decreed right” such that the sum of all pumpers’ decreed rights is equal to the estimated safe yield of the basin. In the original Judgment, the safe yield was determined to be 21,900 acre-feet for the entire Raymond Basin. However, according to the first modification of the Judgment on April 29, 1955, the safe yield was increased to 5,290 acre-feet/year in the Eastern Unit and 25,480 acre-feet/year in the Western Unit.

Based on the new safe yield, the City’s decreed right was calculated to be 12,807 acre-feet/year from the Western Unit. The amount represents the actual decreed right and does not account for the voluntary reduction of 30%. The City has no water rights in the Eastern Unit. According to the Judgment, each pumper may carry over up to 10% of its unused decreed right from one year to the next. Similarly, each pumper may over-extract up to 10% of its decreed right in any given year, provided that this over extraction is made up the following year. The Judgment also limits the capacity of water that may be diverted by Raymond Basin water users from any source contributing groundwater to the Raymond Basin. The City may divert a maximum instantaneous amount of 25.00 cubic feet per second (“cfs”) from the Arroyo Seco (including Millard Canyon) as well as a maximum of 8.90 cfs from Eaton Canyon. On January 17, 1974, the second modification to the Judgment was signed. This modification allowed for the spreading of canyon diversions for later recapture, subject to various conditions, including but not limited to the use of a metering device to measure the amount of water diverted and the continuing jurisdiction of the court. Additional costs incurred by the Watermaster in connection with monitoring spreading and recapture are divided proportionally among those diverting water for spreading and recapture. On March 26, 1984, the Judgment was modified and restated; however, the City’s entitlements were not adjusted.

The sources of groundwater in Raymond Basin include: (1) percolation of precipitation, (2) percolation of applied water from irrigation, other return flows, and cesspools, (3) subsurface inflow (underflow from adjacent groundwater basins and bedrock areas), (4) artificial recharge via surface water spreading and (5) percolation of water from septic tanks. Currently, the Raymond Basin contains about 800,000 acre-feet of groundwater in storage. The general direction of groundwater movement appears to have remained relatively constant since the early 1900s. In general, groundwater levels are relatively higher in the northern half of the Raymond Basin and lower in the southern half than they were historically.

The following factors contribute to PWP’s annual groundwater supply: (1) PWP’s decreed right of 10,304 acre-feet/year, (2) any carryovers from the previous year, (3) water rights leased from other Raymond Basin agencies, (4) spreading credits from the current year or prior year, (5) surplus water from MWD injected/added to long-term storage, and (6) water pumped from long-term storage. The following

factors reduce PWP's annual groundwater supply: (a) any over extractions from the previous year that must be made up, (b) water that will be carried over to the next year, (c) water rights that are leased to other Raymond Basin pumpers and (d) water that is deposited into PWP's storage account. PWP's total annual groundwater production is equal to the total contributions less the total reductions.

The Raymond Basin is an adjudicated basin, and for this reason, PWP's decreed water right is not affected by annual rainfall conditions. The sum of all water that is pumped from the Raymond Basin (excluding water pumped from individual storage accounts or as a result of spreading or injection credits), is regulated so as not to exceed the hydrologically determined safe yield of the basin of 30,622 acre-feet/year, which is stipulated in the Judgment. This results in a high degree of reliability for Raymond Basin groundwater. Groundwater supply reliability is further increased by the presence of PWP's long-term storage accounts within the Raymond Basin. On October 7, 1992 and March 10, 1993, long-term storage policies were adopted within the Raymond Basin, and the basin storage capacity was determined. A storage volume of 96,500 acre-feet was allocated to the Raymond Basin pumpers. PWP's share of the storage volume is 38,500 acre-feet. On an as needed basis, PWP leases storage volume from other Raymond Basin pumpers to meet its groundwater storage needs in the Raymond Basin. As of June 30, 2020, PWP has 19,886 acre-feet of water in storage in the Raymond Basin. Also, under a cooperative storage agreement with MWD, PWP has an additional 14,258 acre-feet of water in storage for MWD. This water is available to PWP during drought and emergencies at MWD's direction.

In September 2011, the City Council approved authority for the General Manager to contract with neighboring water agencies to pump a portion of PWP's excess stored water during periods when PWP is unable to pump all of the water stored under PWP's decreed rights within the Raymond Basin. This action will not impact PWP's long-term pumping or storage rights. The right to sell excess water is both economically and environmentally advantageous, as it would provide value for the water in storage, rather than potentially losing it. Revenues from such sales would help offset a portion of PWP's purchased water costs while enabling another Raymond Basin member to use the water beneficially.

Raymond Basin Surface Water. The principal streams in the service area include the Arroyo Seco, Eaton Wash and the Santa Anita Wash. According to the Judgment, PWP is entitled to divert an instantaneous capacity of up to 25.00 cfs of surface water in the Arroyo Seco (including Millard Canyon) and up to 8.90 cfs of surface water in Eaton Canyon. The Arroyo Seco source accounts for less than 5% of the City's total water supply, depending on rainfall in a particular year. Surface water diversions from the Arroyo Seco have historically been used in two ways: (1) water has been treated for direct supply into PWP's distribution system, and (2) water has been diverted by PWP to the spreading grounds owned by PWP and operated until 1998 by the Los Angeles County Department of Public Works ("LACDPW") in exchange for groundwater pumping credits. Since July 1993, all water that has been diverted by PWP in the Arroyo Seco has been sent to the spreading grounds. The Arroyo Seco spreading basins consist of 13 basins that have an approximate gross wetted area of 13 acres. The spreading basins were constructed in approximately 1948 on City-owned land that was leased to LACDPW. LACDPW operated and maintained the spreading basins on behalf of all Raymond Basin members. Beginning in 1998, PWP assumed the responsibility of operating and maintaining these spreading basins. Due to past precedence established by LACDPW, which spread surface water for the benefit of the Raymond Basin, the Raymond Basin Management Board mandated a spreading methodology in which the amount of water that is determined to be "spread" by PWP in the Arroyo Seco is approximately 60% of the water diverted.

In Eaton Canyon, PWP measures the water flowing down the canyon, which is spread naturally in the streambed and in the LACDPW Eaton Spreading Grounds. This water, up to 8.90 cfs, is reported to the Raymond Basin Management Board as water that is diverted by PWP. PWP gets 80% credit for the amount of water spread as per the Judgment. Under current operations, PWP spreads all of its surface water diversions to receive spreading credits. No surface water directly supplies the PWP distribution system.

Surface water supply is highly variable, as it is entirely dependent on the amount of rainfall during the year. Plans to improve the quantities of surface water used directly or infiltrated into the groundwater are included in the current Water System Resource Plan.

Raymond Basin Management Board. The City obtains its groundwater from the Raymond Basin. Under the Judgment, a court of law determined the parties who have the right to extract water and the timing and amount of such pumping based on a safe yield concept. There are fifteen entities that are allowed to pump from the Raymond Basin. PWP has the largest entitlement, with 42% of the total adjudicated rights. As a party holding a decreed right of 1,000 acre-feet/year or more, PWP appoints one member to the eleven-member Raymond Basin Management Board. All costs of enforcing the Judgment are assumed by all water users in the Raymond Basin in proportion to their respective decreed right.

PWP has taken an active role in securing greater local control of the management of the Raymond Basin. Prior to 1984, the administration of the Raymond Basin was under the authority of the State Department of Water Resources as Watermaster. During that time, the Raymond Basin Management Board (“Management Board”) acted in an advisory capacity to the Watermaster. In 1984, the Judgment was amended to appoint the Management Board as Watermaster. The Management Board is comprised of representatives appointed by the producers within the Raymond Basin. The Management Board is responsible for overseeing the implementation of the adjudicated provisions. One of the most significant powers conferred on the Management Board in the 1984 amendments was the authority to approve plans for storage of native and imported water in the Raymond Basin.

The Judgment has been amended several times over the years. Each amendment has given the producers more flexibility in the management of the Raymond Basin. The Raymond Basin is now well positioned to participate in expanded groundwater storage programs, which should enhance the value and security of the groundwater resource.

The Metropolitan Water District of Southern California

The following information has been obtained from MWD and sources that the City and PWP believe to be reliable, but the City and PWP take no responsibility for the accuracy or completeness hereof.

MWD is a public agency organized in 1928 by vote of the electorates of 13 Southern California cities, including the City, following adoption of the original Metropolitan Water District Act (the “MWD Act”) by the California Legislature. MWD is not subject to regulation by the California Public Utilities Commission, although its enabling statute is subject to amendment by the California Legislature. MWD currently has full authority to set rates and policies as necessary to provide a dependable water supply to Southern California. Historically, MWD provided between 40% and 60% of the water used annually within its service area, which consists of approximately 5,200 square miles in portions of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura Counties. MWD serves a population of approximately 18.8 million people.

MWD is governed by a 38-member Board of Directors (the “Board”) consisting of at least one representative from each of the 26 member public agencies, including the City, that comprise the MWD. Each member public agency is entitled to have at least one representative on the Board, plus an additional representative for each full 5% of its assessed valuation of property in MWD’s service area. Accordingly, from time to time, the Board may have more than or less than 38 members. Representation and voting rights are based upon each agency’s assessed valuation.

MWD is the nation’s largest water wholesaler, providing an average of 1.34 billion gallons of water per day to 19 million consumers. MWD owns and operates the Colorado River Aqueduct (CRA), is one of

twenty-seven contractors of the California Department of Water Resources' (DWR's) State Water Project (SWP) and manages/owns groundwater and surface water storage and treatment facilities. Although the Colorado River is over allocated, water supplies via the CRA have historically been stable while the SWP has been considerably variable.

The MWD Act provides each MWD member agency a preferential entitlement to purchase a portion of the water provided by MWD. This preferential right is based on the ratio of all payments on tax assessments and otherwise, except purchases of water, made to MWD by each member agency compared to total payments made by all member agencies on tax assessments and otherwise, except purchases of water. Historically, these rights have not been used by MWD in allocating MWD's water. In 2004, the California Court of Appeal upheld MWD's methodology for calculation of the respective members' preferential rights under the MWD Act. In litigation challenging MWD's water rates, San Diego County Water Authority ("SDCWA") also challenged MWD's exclusion of payments for exchange water deliveries to SDCWA from the calculation of SDCWA's preferential right. In June 2017, the California Court of Appeal held that SDCWA's payments for exchange water under its exchange agreement must be included in the preferential rights calculation. The Court of Appeal decision is final.

MWD Water Supply. MWD's two primary sources of water are the State Water Project and the Colorado River. In fiscal year 2020, the latest period for which such information is available, MWD supplied the City with approximately 18,534 acre-feet of water. MWD member agencies, which use MWD water to supplement their own local water supplies, can be expected to increase their purchases of MWD water if their local water supplies are reduced.

Reliability of MWD Water Supply to Meet with City Requirements. MWD faces a number of challenges in providing a reliable and high quality water supply for southern California. These include, among others: (1) increased competition for low-cost water supplies; (2) variable weather conditions; (3) allocations to meet environmental and water quality requirements; and (4) climate change.

MWD Scheduling and Operations. MWD member agencies request water from MWD at various delivery points within MWD's system and pay for such water at uniform rates established by the Board for each class of service. No member is required to purchase water from MWD, but all member agencies are required to pay readiness-to-serve charges (as described below) whether or not they purchase water from MWD. The current rate structure provides for a member agency's agreement to purchase water from MWD by means of a voluntary purchase order. In consideration of executing its purchase order, the member agency is entitled to purchase a greater amount of water at the lower Tier 1 Water Supply Rate ("Tier 1") as described under "*MWD Rates*" below. Under each purchase order, a member agency agrees to purchase, over the ten-year term of the contract, an amount of water equal to at least 60% of its highest firm demand for MWD water in any fiscal year from 2007-08 through 2017-18 multiplied by ten. MWD Member agencies are allowed to vary their purchases from year to year, but a member agency will be obligated to pay for the full amount committed under the purchase order, even if it does not take its full purchase order commitment by the end of the ten-year period.

Water is delivered to member agencies on demand and is metered at the point of delivery. Member agencies are billed monthly and a late charge of 1% of the delinquent payment is assessed for delinquent payments not exceeding five business days. A late charge of 2% of the amount of the delinquent payment is charged for a payment that is delinquent for more than five business days for each month or portion of a month that the payment remains delinquent. MWD has the authority to suspend service to any agency delinquent for more than 30 days. Delinquencies have been rare; in such instances late charges have been collected. No service has been suspended because of delinquencies.

MWD Rates. MWD water rates are established by majority vote of the Board. Rates are not subject to regulation by any local, State or federal agency. Under the MWD Act, water rates must be uniform for like classes of service and MWD must, so far as practicable, fix such rates for water as will result in revenue which, together with revenue from any water standby or availability of service charge or assessment, will pay the operating expenses of MWD, provide for repairs and maintenance, provide for payment of the purchase price or other charges for property or services or other rights acquired by MWD and provide for the payment of the interest and principal of the bonded debt of MWD.

The current MWD’s purchase order contract with member agencies became effective on January 1, 2015 and expires on December 31, 2024. On December 23, 2014, PWP entered into a voluntary purchase order contract with MWD, whereby PWP is able to purchase up to 90% of its initial base demand at the Tier 1 rate. The initial base demand for PWP is 25,517 acre-feet. This means that with the purchase order contract, PWP may currently purchase up to 22,965 acre-feet/year of water at the Tier 1 rate. Any water purchased from MWD in excess of 90% of the initial base demand must be purchased at the higher Tier 2 rate. The total demand within PWP service area is approximately 28,000 acre-feet/year.

The following table summarizes water rates under MWD’s current rate structure.

**TABLE 4
MWD WATER RATES
(Dollars per Acre-Foot)**

	<u>Calendar Year 2020 Rates⁽¹⁾</u>	
	<u>Tier 1</u>	<u>Tier 2</u>
Supply Rate	\$ 208	\$ 295
System Access Rate	346	346
Water Stewardship Rate	65	65
System Power Rate	136	136
Treatment Surcharge	<u>323</u>	<u>323</u>
Treated Full Service	\$1,078	\$1,165

⁽¹⁾ Effective January 1, 2021, Tier 1 and Tier 2 full service treated water is \$1,104/acre-feet and \$1,146/acre-feet, respectively. Source: MWD.

The Tier 1 and Tier 2 Water Supply Rates are designed to recover MWD’s water supply costs. The Tier 2 Supply Rate is designed to reflect MWD’s costs of acquiring water transfers north of the Sacramento San Joaquin Delta (the “Delta”). MWD member agencies are charged the Tier 1 or Tier 2 Water Supply Rate for water purchases, as described above.

The System Access Rate is intended to recover a portion of the costs associated with the conveyance and distribution system, including capital, operating and maintenance costs.

The Water Stewardship Rate is charged on a dollar per acre-foot basis to collect revenues to support MWD’s financial commitment to conservation, water recycling, groundwater recovery and other water management programs approved by the Board.

The System Power Rate is charged on a dollar per acre-foot basis to recover the cost of power necessary to pump water from the SWP and Colorado River through the conveyance and distribution system for MWD’s member agencies.

MWD charges a treatment surcharge on a dollar per acre-foot basis for treated deliveries. The treatment surcharge is set to recover the cost of providing water treatment capacity and operations.

Additional charges for the availability of MWD's water are: the Readiness-to-Serve Charge, the Water Standby Charge and the Capacity Charge.

The Readiness-to-Serve Charge ("RTS") is a variable annual charge that is divided proportionally among all agencies that receive water from MWD. This money is used by MWD to recover costs associated with system conveyance capacity for standby and peak use and emergency system storage. Currently, PWP's share of MWD's annual RTS is about 1.25%.

The Board is authorized to impose water standby or availability of service charges. In May 1993, the Board imposed a Water Standby Charge (the "Water Standby Charge") for fiscal year 1993-94 ranging from \$6.94 to \$15 for each acre or parcel less than an acre within MWD's service area, subject to specified exempt categories. Water Standby Charges have been imposed at the same rate in each year since fiscal year 1993-94. Water Standby Charges are assessments under the terms of Proposition 218, a State constitutional ballot initiative approved by the voters on November 5, 1996, but MWD's current Water Standby Charges are exempt from Proposition 218's procedural requirements.

Member agencies have the option to utilize MWD's existing Water Standby Charge authority as a means to collect all or a portion of their RTS. Water Standby Charge collections are credited against the member agencies' RTS.

The Capacity Charge (the "Capacity Charge") is a fixed annual charge, which is based on the maximum summer day demand placed on the system between May 1 and September 30.

SDCWA has filed a number of lawsuits against MWD challenging MWD's water rates that are in various stages of the judicial process. The City is unable to assess at this time the impact this litigation may have on future water rates charged by MWD to the City. Information regarding this litigation is available in certain annual reports, notices of certain enumerated events as defined under Rule 15c2-12 promulgated under the Securities Exchange Act of 1934, as amended (Rule 15c2-12"), annual audited financial statements and MWD's official statements (collectively, the "Metropolitan Information") found on the Municipal Securities Rulemaking Board's Electronic Municipal Market Access System for municipal securities disclosures, maintained on the internet at <http://emma.msrb.org/> ("EMMA"). The MWD Information is not incorporated herein by reference.

Future Sources of Water Supply and/or Reliability

PWP is actively pursuing local water resource projects to improve reliability and maximize groundwater access. Projects currently in progress are outlined below and comprise 35% of the anticipated \$129.2 million five-year Capital Improvement Plan. See "THE WATER SYSTEM – Water System Master Plan."

Arroyo Seco Canyon Project. This project includes habitat restoration, recreational enhancement, and water supply and water quality improvements in the Arroyo Seco Canyon. The canyon is an important watershed that provides the City with surface water with rights up to 25 cfs. The Arroyo Seco Canyon Project consists of three areas in the canyon for improvements including new infrastructure to improve diversion of stream flows during large winter storms. The project, when completed, will increase groundwater recharge by approximately 1,000 acre-feet/year and result in an additional 600 acre-feet/year of pumping credits.

The total estimated cost for this project is \$17.3 million and is included in the Fiscal Years 2020-21 through 2024-25 Capital Improvement Plan.

An Environmental Impact Report (“EIR”) for the project is currently being prepared, which analyzes the potential effects of increased water diversions from the Arroyo Seco Stream on biological resources from the water diversion point downstream. The EIR is expected to be completed by December 2020. Construction on the Arroyo Seco Canyon Project is scheduled for the summer and fall of 2021.

Pasadena Non-Potable Project. PWP has participated in an agreement with the City of Glendale since 1993 to secure the option to take delivery of tertiary-treated water from Los Angeles-Glendale Water Treatment Plant. In February 2016, the Pasadena City Council certified the EIR for the first phase of the project. The EIR was prepared in accordance with California Environmental Quality Act (“CEQA”) and National Environmental Policy Act (“NEPA”) statutes and guidelines. Shortly after the pumping right was validated by the State Water Resources Control Board, the project scope was redefined in 2019. Due to the proposed changes, PWP is re-evaluating continued participation in the project.

While the Los Angeles-Glendale Water Treatment Plant is being re-evaluated, PWP continues to explore options to expand use of non-potable water within the City. One of the non-potable projects being explored is the potential production of high nitrate groundwater to irrigate certain golf courses, playing fields, parks and landscapes that are deemed eligible for such use. The use of high nitrate groundwater for irrigation provides a low cost water source and relieves the potable system from purchasing or producing drinking water quality to use on landscapes. The non-potable water program includes the expansion of the number of wells and re-purposing several existing wells to support the program. The first connection to the system is expected to be complete in 2021.

Water Conservation Programs and Water System Resource Plan

Approximately 66% of the water that PWP delivers to customers is purchased from MWD. Future reliability of imported water will continue to face uncertainties from climate change, environmental and water quality regulations and droughts.

To address potential long-term water supply challenges, PWP developed a Comprehensive Water Conservation Plan. The plan provides a long term multi-dimensional approach for achieving water conservation targets through the year 2035. The plan was written to comply with the Urban Water Management Planning Act, which required water agencies to report an interim 2015 urban water use target and a 2020 urban water use target per Senate Bill (SB) X7-7. The City’s 2015 Urban Water Management Plan (UWMP) reported an interim 2015 target of 190 gallons per capita per day (“gpcd”) and a 2020 target of 169 gpcd. The actual usage for calendar year 2015 was 148 gpcd and the actual usage for calendar year 2019 was 151 gpcd. PWP will provide the actual 2020 usage in the 2020 UWMP, which will be adopted in 2021.

However, more recent legislation, Assembly Bill (AB) 1668 and Senate Bill (SB) 606, were enacted into law in 2019 and have new criteria to reduce demands and control water use even further. Indoor water standards are being established as well as criteria to manage outdoor water use to the individual parcel. These efforts are proceeding through the State regulatory agencies for final adoption and implementation timelines. Upon adoption and delivery of the implementation timelines, PWP will evaluate expanding or developing new conservation programs to ensure compliance with the state regulations.

To increase support of its Comprehensive Water Conservation Plan, PWP is developing a Water System Resource Plan (“WSRP”) which defines conservation as an element of water supply. Within the WSRP, new tools to address managing water demand during challenging years are proposed.

The WSRP is a 25-year strategy identifying the necessary investments for sustainable water resources and the infrastructure needed to ensure that high quality water service continues to be provided to PWP customers. The WSRP combines a long term resource plan and a high-level assessment of needed capital investments. This comprehensive document provides a programmatic view of the entire water operations from the source through delivery to PWP's customers. The WSRP is proposed to be revisited every 5 years with an internal review every 2-3 years. This type of periodic review is intended to ensure that the WSRP addresses evolving issues and considerations whether local, regional, state or federal.

The WSRP evaluates the current and projected needs of the customers for potable and non-potable water, providing risk-based screening of alternatives to meet those future demands with necessary infrastructure investment within reasonable operational and financial constraints. Major considerations include water quality, greater reliance on local water, groundwater basin stability, reliability of the distribution system, affordability, and the uncertainties of climate change, and legislative and regulatory requirements.

Key goals of the WSRP include:

- *Maximizing Local Supply.* Expanding the use of local water is a principal tenet of the WSRP. The WSRP includes the projected impacts of reduced demand combined with leveraging groundwater rights to support the long-term goal of a sustainable blend of 50 percent local and 50 percent imported water. Innovative water sources will be evaluated to serve the community including small-scale and specialized projects that are consistent with Pasadena's community values.
- *Lower Costs.* While access to the water basins and active sustainable practices requires investment in production facilities and water resources, increased use of local supply reduces imported water expenses and decreases water loss. Water pipe improvement and better management practices also reduce water losses. In addition to reducing costs from lost water, the WSRP objectives reduce risks of service interruptions.
- *Protection from Emergencies.* Refocused efforts to create a sustainable ground water supply will also provide insurance against imported water interruptions during emergencies and peak weather-based demand. Conservation programs in conjunction with planned groundwater use will provide flexibility for variations in demand.

PWP developed the WSRP with extensive input from a focused Stakeholder Advisory Committee ("SAC") comprised of 13 members representing a cross section of the community. During the WSRP development process, periodic updates were provided to the Municipal Services Committee ("MSC") and the City's Environmental Advisory Commission ("EAC").

It is possible that all objectives may not be met in the anticipated timeframe because of financial, operational or external constraints. However, PWP will achieve greater efficiencies, aggressively pursue grants and joint project opportunities with other agencies to reduce the overall cost impacts to its rate payers.

Risks to Water Supply

PWP's water supply is affected by many factors, including annual rainfall, production patterns, groundwater recharge opportunities, lowering of the groundwater table, and equipment and infrastructure maintenance schedules. Low water levels could adversely affect PWP's water supply and could impact operational expenses of the Water System or demand for water services. There is no assurance that PWP's sources of water supply will remain constant throughout the period the 2020A Bonds are outstanding.

However, regional and local water storage programs are designed to mitigate the potential effects of lower water levels in the Raymond Basin.

The City's water supply is highly dependent on the reliability of imported water from MWD. Imported water accounted for 66% of the City's water supply in Fiscal Year 2019-20. See "Water Production" above.

At the end of Fiscal Year 2019-20, PWP has 19,886 acre-feet of water stored in the Raymond Basin. This amount of stored water in addition to the City's annual pumping entitlement and water stored on behalf of MWD is equal to approximately one and a half years of imported water supply. The City is engaged in developing alternative local sources of supply. Efforts are underway to improve the infiltration of water into the groundwater basin or engage in storage and exchange contracts which would provide an additional benefit of improving the groundwater basin.

Water Quality

PWP has consistently complied with all federal and state regulations. PWP collects water samples on a regular basis from all sources of supply, reservoirs and locations throughout the distribution system. General mineral, physical, bacteriological, volatile organic chemicals ("VOCs"), total trihalomethanes ("THMs"), perchlorate, nitrate, ammonia, nitrite, fluoride and metals analyses are performed in PWP's own state certified Water Quality Laboratory. Pesticides, herbicides, radiochemicals, and some organic, inorganic and mineral compounds analyses are performed at contract laboratories. The Water Quality Laboratory and contract laboratories perform over 36,000 chemical and bacteriological analyses on PWP's water samples annually.

MWD water imported by PWP is treated at MWD's Weymouth Water Treatment Plant. Water quality data for the Weymouth Water Treatment Plant reported in MWD's annual Water Quality Report for 2020 shows no objectionable water quality characteristics. The Weymouth Water Treatment Plant receives most of its water supply from the Colorado River which has hard water. Hardness in water comes from calcium and magnesium minerals naturally occurring in the water.

MWD adds fluoride to its water supply and PWP's groundwater has naturally occurring fluoride. The average fluoride level in the drinking water is 0.7 parts per million ("ppm").

The quality of water in the Raymond Basin, the source of approximately 40% of the City's water supply, is generally good. In some portions of the Raymond Basin, the presence of nitrates requires blending to meet drinking water quality standards. There is some contamination from VOCs in scattered parts of the Raymond Basin, as well as contamination from perchlorate. Most occurrences are easily treated or can be blended to meet drinking-water standards. Two of Pasadena's wells are operable to meet drinking water standards without requiring treatment or blending to meet acceptable standards.

The most notable VOCs and perchlorate contamination is in the vicinity of the Jet Propulsion Laboratory ("JPL") located in the northwest part of the City's service area adjacent to the Arroyo Seco Stream, a major recharge area for the Raymond Basin. Contamination in this area had resulted in the inability to operate several wells. Four of the contaminated wells belong to the City and have historically supplied approximately 35% of the City's annual groundwater supply.

The City constructed a perchlorate and VOC treatment plant, known as the Monk Hill Groundwater Treatment Plant, which became operational in July 2011. The plant treats the four contaminated wells in the Arroyo Seco area near the JPL. The plant is designed to remove perchlorate from the extracted groundwater by passing the contaminated water through an ion exchange system which is made up of four

pairs of steel tanks containing 12,000 to 16,000 pounds of plastic beads called resin, and then passing the water through a carbon filter system, which is made up of five pairs of steel tanks containing about 40,000 pounds per vessel of charcoal-like carbon particles to remove VOCs.

The California Institute of Technology (“Caltech”) has agreed to remediate the perchlorate contamination in the Arroyo Seco area. The National Aeronautics and Space Administration (“NASA”) acts as the Administrator of the agreement and also provides technical assistance, services and groundwater monitoring. NASA has provided funding for the construction and operation of the Monk Hill Groundwater Treatment Plant. The amount to be reimbursed by NASA for plant operations is approximately \$3.5 million per annum, with an agreement to allow for future escalation should the cost of operating and maintaining the treatment plant increase.

Environmental Regulation

The quality of PWP's water is regulated by federal Safe Drinking Water Act and the California Health and Safety Code. These two statutes set standards for a variety of elements that can be found in drinking water supplies. The Maximum Contaminant Level (“MCL”) is the legally enforceable standard for concentrations of these constituents which PWP must comply with. The Public Health Goal (“PHG”) is the lowest concentration of these constituents which pose less than a one in a million risk of adverse health impacts. The MCL is set as close to the PHG as is technically and economically feasible. The MCLs are set forth in series of rules. Compliance with these MCLs is determined by analytical procedures carried out by laboratories accredited by the State. The following are some of the rules and regulations applicable to PWP's Water System. PWP is in compliance with all such applicable regulations.

Groundwater Rule. The United States Environmental Protection Agency (“EPA”) published the Groundwater Rule on November 8, 2006. The Groundwater Rule is to provide increased protection against microbial pathogens in water systems that use groundwater.

Total Coliform Rule. EPA published the Revised Total Coliform Rule on February 13, 2013. Every week PWP collects over fifty samples from locations throughout its distribution system. These include wells, reservoirs, and dedicated sample taps on mains. These samples are tested for Total Coliform, Escherichia coli, Chlorine Residual, and Heterotrophic Plate Count bacteria. These are measures of the microbial health of the distribution system. There are MCLs for both Total Coliform and Escherichia coli and PWP has always complied with these standards. There are also standards requiring that a chlorine residual, which prevents the growth of bacteria throughout the water system.

Perchlorate Rule. The Division of Drinking Water established a perchlorate MCL of 6 parts per billion (“ppb”) effective October 2007. New limits are currently being proposed by the State. The Federal government (which has liability for much of the perchlorate cleanup) has proposed to raise or eliminate the standard.

Surface Water Treatment Rules. In 1989, the EPA published a surface water treatment rule which required all water systems to provide treatment to ensure at least 99.9% removal and/or inactivation of giardia lamblia cysts and at least 99.99% removal and/or inactivation of viruses (“Surface Water Treatment Rule”). In 1998, the EPA published the Interim Enhanced Surface Water Treatment Rule (“Interim Rule”), which added, among other things, the requirement of a 99% reduction in cryptosporidium for surface water systems that filter. The Interim Rule applies to water systems using surface water and/or groundwater under the direct influence of surface water, and which serve more than 10,000 people.

Lead and Copper Rule. In 1991, EPA published a regulation to control lead and copper in drinking water, known as the Lead and Copper Rule. The treatment technique for the rule requires systems to monitor

drinking water at customer taps. If lead concentrations exceed an action level of 15 ppb or copper concentrations exceed an action level of 1.3 ppm in more than 10% of customer taps sampled, the system must undertake a number of additional actions to control corrosion.

Nitrate. Nitrates may be present in certain PWP wells because of the use of nitrate fertilizers and septic tanks up gradient of the Raymond Basin. The presence of nitrate in Pasadena's water supply is treated by blending with low nitrate sources, including MWD water and low nitrate wells.

1,2,3-Trichloropropane ("123-TCP"). On December 14, 2017, the California Water Resources Control Board Division of Drinking Water (DDW) adopted a regulation promulgating a Maximum Contaminant Level (MCL) for 1,2,3-trichloropropane (1,2,3-TCP) of 0.000005 milligrams per liter (mg/L, or 5 parts per trillion or 5 ppt). Four PWP wells are known to have 123-TCP in concentrations above the MCL. PWP currently uses blending with imported water to meet DDW standards.

In addition to the above regulations, the EPA also regulates metals, organic compounds, trihalomethane (disinfectant/disinfection by-products), radionuclides, radon, arsenic, nitrosodium-ethylamine and total chromium. The EPA regulations set out a MCL for each organic chemical. The regulations also require that a water utility use treatment to comply with the MCL by collecting monthly samples of the treated water at a location prior to the distribution system. If results in the treated water supply exceed the MCL the water utility must resample the treated water to confirm the results and report the result to Division of Drinking Water within 48 hours of confirmation.

Per and Polyfluoroalkyl Substances ("PFAS"). In July 2018, the California Water Resources Control Board, Division of Drinking Water ("DDW") first established notification levels for PFAS in drinking water. Current notification levels are established at 10 parts per trillion for perfluorooctanoic acid ("PFOA") and 40 parts per trillion for perfluorooctane sulfonic acid ("PFOS"). A single groundwater well within PWP's water system has had a very low level detection of PFAS, which is being effectively treated at the Monk Hill Treatment Plant to meet DDW standards. PWP does not anticipate increased levels of PFAS in its water supply.

Future Regulation. Water utilities are subject to continuing quality and environmental regulation. Federal, state and local standards and procedures which regulate water utilities are subject to change. These changes may arise from continuing legislative, regulatory and judicial action regarding such standards and procedures. Consequently, there is no assurance that any City facility subject to regulations currently in effect will always be in compliance with future regulations. An inability to comply with environmental standards could result in additional capital expenditures to comply, reduced operating levels or the complete shutdown of individual water facilities that are not in compliance. If the federal government, acting through the EPA or additional legislation, or the State impose stricter treatment standards, PWP's expenses could increase and PWP would evaluate appropriate methods to address the expenses. The WSRP anticipates advances in regulations and establishes options to comply with the flexibility to adapt as needed.

Seismic Considerations

The areas in and surrounding the City-owned water facilities, like those in much of the State, may be subject to unpredictable seismic activity. The Water System's facilities are located within known active fault lines. An occurrence of severe seismic activity in the area of the Water System's facilities could result in substantial damage to and interference with the City's water supply. The City does not currently carry earthquake insurance. See APPENDIX A – "THE CITY OF PASADENA – Insurance" herein. In the event of significant earthquake damage to the Water System and/or the City's service area, there can be no assurance that Pledged Revenues would be sufficient to pay the principal of and interest on any outstanding 2020A Bonds.

Water System Master Plan

The City's Water System Master Plan, adopted in 2002, provides the framework for capital investment in the water distribution system including a proposed budget and funding plan. The Water System Master Plan is expected to be updated during Fiscal Year 2021.

Below is a review of the capital improvements completed since the implementation of the Water System Master Plan in Fiscal Year 2003.

Pipeline Replacement. PWP has 520 miles of water pipes within the City's service area. Since the adoption of the Water System Master Plan, 90 miles of pipelines or 17 percent of the City's pipelines have been replaced. While PWP has concentrated the water main replacement program on the age of the pipes and fire flow requirements, PWP has also focused the pipeline replacements in major traffic corridors, and business districts where water main breaks could cause major disruptions.

Water Meter Replacement. The Water System Master Plan includes a goal to replace all small meters within fifteen years at a rate of about 2,400 meters per year. However, in Fiscal Year 2005 it was decided to accelerate the replacement of water meters with automatic meter read ("AMR") equipment. AMR technology greatly improved the efficient collection of water meter use data and is an interim measure to moving toward Advanced Metering Infrastructure ("AMI"). PWP is evaluating the risks and value of moving to an AMI program and is also considering alternatives to AMI, including ultra-sonic and narrow band communications to improve the reliability and longevity of the system.

Reservoir Seismic Retrofit. Currently, improvements have been completed for two of the twelve reservoirs identified in the Water System Master Plan as requiring seismic retrofitting. Some of the Water System reservoirs are over eighty years old and full analyses of the existing structural conditions must be completed before designing the retrofits for additional reservoirs. PWP is in the process of evaluating the replacement of the fifteen million gallon Sunset Reservoirs (two units). These reservoirs were built in 1888 and 1900. The initial investigation indicates that a total replacement of the reservoir facilities with a new water tank will be the optimal long term solution.

Groundwater Wells Rehabilitated. PWP has exceeded the goals for rehabilitation of groundwater wells that were established in the Water System Master Plan. The rehabilitations have focused on addressing mechanical issues, especially for wells located in areas of low groundwater levels. During Fiscal Year 2020-21, PWP will be conducting analyses of the construction of new wells to replace certain older wells.

Booster Station Upgraded. PWP has upgraded eight of the booster stations identified in the Water System Master Plan. This includes three of the largest booster stations within the Water System distribution network that serve most of the northern half of the service area.

Capital Improvement Program

Consistent with the development of the Water System Master Plan and the related Capital Improvement Program, staff conducted an analysis to develop a financial structure to support the needed capital investments while minimizing the rate impact on water customers. Staff also examined the impact of various levels of debt financing for the CIP. Based on this analysis, staff proposed the Capital Improvement Charge ("CIC") based on the cost of revenue bond financing and projected capital expenditures. In 2003, the City Council approved the implementation of the CIC based on staff recommendation. Through the CIC, the City has imposed periodic increases over the years to support revised debt service and capital improvement requirements. Based on water consumption for Fiscal Year

2020 and the current rate, the CIC generated approximately \$11.4 million. See “SECURITY AND SOURCES OF PAYMENT FOR THE 2020A BONDS – Capital Improvements Charge Account.”

The City issued the 2007 Bonds, the 2010 Bonds and the 2011A Bonds to continue the implementation of its Water System Master Plan. The 2020A Bonds will support the continuation of projects defined in the Water System Master Plan and the Water System Resources Plan.

Each year the City Council approves a five-year CIP for the Water System. The most recent CIP for the Water System was approved in June 2020. The CIP for Fiscal Years 2021-2025 identified approximately \$129.2 million in projects for the Water System. The following table lists the expected capital requirements over the current and next four Fiscal Years.

TABLE 5
WATER SYSTEM CAPITAL REQUIREMENTS
(In Thousands)

<u>Fiscal Year</u>	<u>Capital Requirements</u>
2021	\$25,771
2022	30,327
2023	31,481
2024	22,128
2025	19,470

Source: Pasadena Water and Power Department.

The CIP for the Water System includes the design and construction of a non-potable water program, installation of replacement water mains, meters and services, replacement of chlorine stations with chloramines disinfection facilities for water quality and treatment and seismic retrofits for reservoirs and other key facilities. PWP expects to finance the CIP projects through a combination of funds on hand, current revenues and revenue bonds. In addition, PWP may enter into Federal or State loan programs to fund a portion of the CIP projects. Any such loans may be secured by a pledge of and lien on the Pledged Revenues of the Water System on a parity with other obligations of the Water System payable from the Water Fund, including the Bonds. See “SECURITY AND SOURCES OF PAYMENT FOR THE 2020A BONDS – Additional Bonds and Parity Debt.”

Water Sales

The following table shows historical production and sales information for the Water System.

TABLE 6
HISTORICAL PRODUCTION AND SALES DATA
(In Thousands of Billing Units)

	Fiscal Year Ended June 30,				
	2016	2017	2018	2019	2020
Total Production	11,299	12,012	12,835	12,238	12,274
Water Sold	10,318	10,997	12,801	11,478	11,276
Water System Losses	981	1,015	754	760	998
Number of Services	37,959	38,067	38,046	38,114	38,193

Billing Unit = 100 Cubic Feet.

⁽¹⁾ Decline from historical level reflects implementation of conservation measures.

Source: Pasadena Water and Power Department.

As shown in the table below, customers inside the City's boundary (including municipal and other customers) consumed approximately 86% of the volume of water sold by the Water System in Fiscal Year 2020. Receipts from customers within the City limits (including municipal and other customers) represent approximately 88% of the revenues collected by the Water System. Each meter is considered a separate customer.

TABLE 7
WATER SALES VOLUME AND REVENUE

	Fiscal Year Ended June 30,				
	2016	2017	2018	2019	2020 ⁽¹⁾
Volume (000's Billing Units)					
Inside City Limits	8,693	9,208	10,089	9,496	9,156
Outside City Limits	1,372	1,464	1,664	1,568	1,572
Municipal and Other	<u>253</u>	<u>325</u>	<u>329</u>	<u>414</u>	<u>547</u>
Total	10,318	10,997	12,082	11,478	11,275
Revenue (000's Dollars)					
Inside City Limits	\$33,966	\$35,922	\$38,958	\$37,071	\$38,673
Outside City Limits	6,339	6,734	7,442	7,158	7,467
Municipal and Other	<u>10,530</u>	<u>15,631</u>	<u>16,192</u>	<u>15,952</u>	<u>16,091</u>
Total	\$50,835	\$58,287	\$62,592	\$60,181	\$62,231

⁽¹⁾ The information for the Fiscal Year ended June 30, 2020 is based on estimated information.

Billing Unit = 100 Cubic Feet.

Source: Pasadena Water and Power Department.

Largest Customers

The ten largest customers of the Water System for the Fiscal Year ended June 30, 2020 are listed in the table below.

TABLE 8
TEN LARGEST CUSTOMERS
(Billing Units)

<u>Customer</u>	<u>Percent of Total Operating Revenues</u>
California Institute of Technology	2.45%
Rose Bowl Operating Company	1.71
City of Pasadena Public Works Department	1.56
Annandale Golf Course	0.98
County of Los Angeles (Eaton Canyon/Altadena Golf Course)	0.80
Pasadena Hospital Association	0.69
Pasadena Unified School District	0.68
ERP Operating LP	0.34
Pasadena City College	0.30
Pasadena Villages LP	<u>0.29</u>
Total	9.80%

Billing Unit = 100 Cubic Feet.
Source: Pasadena Water and Power Department.

Rate Structure

The Charter provides that the City Council shall set water rates by ordinance. Such rates are not subject to approval by any other body or agency, but under Article XIIIID of the California Constitution are subject to a majority protest procedure of property owners subject to the rates. The Rate Ordinance sets rates and charges for Water System customers. Water rates charged to customers are comprised of the commodity rates, a monthly distribution and customer charge, a capital improvement charge and may include a purchased water adjustment charge.

Under the City's Water Ordinance, Chapter 13.20 of the Pasadena Municipal Code, costs associated with PWP's water supply are passed through to customers via the First Block, Second Block, Third Block and Fourth Block commodity rates. The commodity rates are re-set from time to time to recover all costs associated with the purchase and distribution of PWP water supply. In order to accommodate changes in water supply costs, water delivered under commodity rates is subject to a pass-through adjustment, the purchased water adjustment charge, which tracks changes in water supply costs since the last change in rates. The purchased water adjustment charge is subject to the notification requirement of Proposition 218.

In addition to the commodity charge described above, PWP charges its customers a Capital Improvement Charge ("CIC") and a Distribution and Customer Charge ("D&C"). The CIC is a mechanism by which PWP is able to recover a portion of its cost of capital expenditures and a portion of its debt service. The CIC is a volumetric charge on a per billing unit basis. The D&C is a monthly fixed charge designed to recover the PWP's distribution and customer service costs.

The following chart outlines the current water rate structure for the City. A customer is charged First Block rates for initial quantity consumed, Second Block rates over initial quantity Third Block rates for any quantities over the quantities consumed in the First and Second Block, and Fourth Block rates for quantities consumed over First Block, Second Block and Third Block quantities.

**TABLE 9
RATE STRUCTURE**

COMMODITY RATES FOR ALL WATER DELIVERED (PER 100 CUBIC FEET)

Effective June 1, 2020

First Block	\$1.44852
Second Block	3.07637
Third Block	3.60615
Fourth Block	4.37569

FIRST, SECOND, THIRD AND FOURTH BLOCK ALLOCATIONS ⁽¹⁾

<u>Size of Meter (Inches)</u>	<u>Volume of First Block Allocation</u>	<u>Volume of Second Block Allocation</u>	<u>Volume of Third Block Allocation</u>	<u>Volume of Fourth Block Allocation</u>
5/8", 3/4"	0-8	9-24	25-34	35 and over
1"	0-12	13-40	41-60	61 and over
1-1/2"	0-22	23-86	87-132	133 and over
2"	0-48	49-188	189-290	291 and over
3"	0-116	117-500	501-860	861 and over
4"	0-225	226-1,000	1,001-1,800	1,801 and over
6"	0-500	501-5,600	5,601-8,800	8,801 and over
8"	0-500	501-5,600	5,601-10,000	10,001 and over
10", 12"	0-500	501-24,000	24,001-32,000	32,001 and over

MONTHLY DISTRIBUTION AND CUSTOMER CHARGE FOR SERVICE ⁽²⁾

<u>Meter Size (Inches)</u>	
5/8" and 3/4"	\$ 24.66
1"	46.83
1 1/2"	97.37
2"	221.99
3"	542.31
4"	830.22
6"	1,289.37
8"	2,090.93
10"	2,721.21

⁽¹⁾ In Units of 100 cubic feet.

⁽²⁾ Includes fire protection service.

Sources: Pasadena Water and Power Department.

The current effective CIC rates (approved in January 2016) are shown in the table below.

TABLE 10
CAPITAL IMPROVEMENTS CHARGE
(per 100 Cubic Feet)

Effective June 1, 2019

\$1.00501

Source: Pasadena Water and Power Department.

The following table shows average residential monthly billing information for the last five Fiscal Years.

TABLE 11
AVERAGE RESIDENTIAL BILLING INFORMATION

	Fiscal Year Ended June 30,				
	2016	2017	2018	2019	2020⁽¹⁾
Residential Billing Units Sold (100 Cubic Feet)	6,850,632	7,347,821	8,183,925	7,654,004	7,709,030
Total Billing Units Sold (Water System)	10,317,835	10,996,569	12,082,337	11,478,167	11,275,654
Residential as a Percent of Total Water System	66.4%	66.8%	67.7%	66.7%	68.4%
Revenues From Residential Sales	\$32,538,729	\$36,887,043	\$40,158,532	\$38,350,207	\$40,140,340
Total (Water System)	\$50,834,930	\$58,286,718	\$62,591,958	\$60,180,664	\$62,230,975
Residential as a Percent of Total Water System	64.0%	63.3%	64.2%	63.7%	64.5%
Number of Residential Customers	32,839	32,943	33,006	32,920	32,994
Total (Water System)	37,959	38,067	38,046	38,114	38,193
Residential as a Percent of Total Water System	86.5%	86.5%	86.8%	86.4%	86.4%
Average Residential Monthly Billing Unit	17.4	18.6	20.7	19.4	19.5
Average Residential Bill	\$82.57	\$93.31	\$101.39	\$97.08	\$101.38

⁽¹⁾ The information for Fiscal Year ended June 30, 2020 is based on estimated information.

Source: Pasadena Water and Power Department.

Billing and Collection Procedures

Billing and collection services for all water services are provided by PWP and the City's Finance Department. Most residential and certain commercial water customers are billed bimonthly for electric and/or water service; most large commercial users are billed monthly for electric and water service. The City prepares a single bill for electric, water, refuse and sewer collection services. Payments received for the billed period are credited first to the oldest charges, then to current charges for each service in the order stated.

- Deposits
- Refuse
- Sewer
- Electric
- Water

All charges for water and water service are due and payment rendered, and become delinquent 30 days after the bill date. To manage late/non-payments a 48-hour notice of termination is generated approximately 75 days after the actual billing date. If payment is not received the water service is interrupted. Should the bill not be paid within 15 days of a final notice, the electric service is then also interrupted. The total bill plus all reconnection charges must be paid to resume service. After 60 days, the account is written off by the PWP Collection Department and sent to the City Finance Department for further collection efforts.

In September 2018, the Water Shutoff Protection Act (SB 998) (the "Act") was signed into law. The legislation imposes specific requirements and procedures for the discontinuation of water service to residential customers. The Act requires all California water systems to have written policies on the discontinuation of residential water service for non-payment. Specifically, the policy must include 1) a plan for deferred or reduced payments; 2) alternative payment schedules; 3) a formal mechanism for a customer to contest or appeal a bill; and 4) a telephone number for a customer to discuss options to avoid discontinuation of service for non-payment. PWP's credit shut-off policies have been updated in compliance with the requirements of the Act, and the City Council approved amendments to PWP's water service connection fees in December 2019 to be compliant with the Act.

In March 2020 to assist PWP customers experiencing financial difficulties as a result of COVID-19, PWP temporarily suspended the collection and assignment of late fees and delinquent charges on all accounts. The temporary change in procedure led to an increase in the bad debt projected for Fiscal Year 2020, as shown in the table below. It should be noted that PWP anticipates to collect a majority of the accounts receivable over several months in Fiscal Year 2021 when the temporary suspension is lifted. The end date of the suspension has not yet been determined. PWP is currently evaluating appropriate collection plans to mitigate the impact to PWP customers and restore bad debt amounts back to historical averages.

TABLE 12
HISTORICAL CUSTOMER BAD DEBT
(\$ in Thousands)

	Fiscal Year Ended June 30,				
	2016	2017	2018	2019	2020⁽¹⁾
Bad Debt Written Off	\$46	\$327	\$123	\$103	\$634
Total Operating Revenue	\$50,835	\$58,287	\$62,592	\$61,181	\$62,231
Bad Debt as a Percent of Operating Revenue	0.09%	0.56%	0.20%	0.17%	1.02%

⁽¹⁾ The information for Fiscal Year ended June 30, 2020 is based on estimated information.
Source: Pasadena Water and Power Department.

COVID-19 Pandemic

The COVID-19 pandemic that has affected the United States and the world during the winter and spring of 2020 has led to efforts to quarantine individuals in order to reduce the spread of the virus. As such, the United States, the State, the County, and the City had each declared a “state of emergency” or equivalent. Additionally, the State issued a “stay at home” order that severely restricts the movement of residents and generally mandates residents to remain in their home and, in effect, prohibits non-essential workers from working outside their home. This has caused the disruption of daily life in all jurisdictions, including the closure of, among others, bars, dine-in restaurants, retail stores, schools, gyms, movie theatres, certain government buildings and religious institutions, and general prohibitions on gatherings.

As a result of the emergency declaration, the City has limited staffing to those who provide essential services only. City buildings housing essential services remain open at this time, although some services may not be available on-site. The City has asked members of the public who have business to conduct with the City do so over the phone, via email or online if possible.

This declaration has not impacted essential services such as water services. Public health is of paramount concern for the City and the City has already implemented significant measures to limit the possible spread of COVID-19. The City has an independent Department of Public Health, and has the authority to implement measures separate from those imposed by the Los Angeles County Public Health Department. The City’s current measures are compliant with those executed by Los Angeles County.

Those precautionary measures – including the cancellation or postponing of nonessential events and gatherings – will remain in effect until further notice. City staff continues working closely with the Los Angeles County, the Centers for Disease Control, and the Office of Governor Newsom, receiving daily updates.

The City is following the guidelines for reopening set forth by the County, which guidelines adhere to the guidance for reopening issued by State Public Health Officer and California Department of Public Health. [Currently, the County is in Stage 2 of the State Resilience Roadmap, which means that curb-side

retail, manufacturing, logistics, childcare, office-based businesses, select services and outdoor museums may open subject to following certain safety guidelines.][UPDATE CLOSER TO POSTING]

The impact of the COVID-19 pandemic in billing unit sales for the Fiscal Year ended June 30, 2020 was approximately 2% lower than when compared to the Fiscal Year ended June 30, 2019. However, the revenues for Fiscal Year 2020 were approximately 3.4% higher due to a rate increase in the monthly D&C charge.

The Fiscal Year 2021 water operating and capital improvement budgets were approved by the City Council in June, 2020. Because the impacts of COVID-19 were not well-known at the time the City's Fiscal Year 2021 budgets were adopted, specific impacts of the State's directives were not included. The approved Water Fund Fiscal Year 2021 budget is approximately \$66.9 million. It is anticipated that the adopted Fiscal Year 2021 budgets may be amended as the impacts of COVID-19 become more well-defined.

Although it is anticipated that many commercial customers will gradually return to business, it is expected that the impacts of COVID-19 will continue into Fiscal Year 2021. As such, based on the impacts calculated for Fiscal Year 2020, PWP is forecasting a reduction of three percent for the first quarter and a two percent reduction in the second quarter of Fiscal Year 2021 for water demand from PWP's adopted Fiscal Year 2021 budget. The updated forecasts are reflected in the projections provided in this Official Statement. PWP's long-term projections are based on a full economic recovery by Fiscal Year 2022.

Actual impact will depend on the duration of the pandemic. To provide relief for its customers, the City is currently suspending assessment of all penalties and interest on unpaid/delinquent bills and all credit disconnections.

The City cannot predict (i) the duration or extent of the COVID-19 outbreak; (ii) to what extent the COVID-19 outbreak may affect the operations and revenues of the Water System; (iii) to what extent COVID-19 may disrupt the local, State, national or global economy, manufacturing or supply chain, or whether any such disruption may adversely impact system-related construction, the cost, sources of funds, schedule or implementation of the capital improvement program, or other system operations; (iv) to what extent the City may provide additional deferrals, forbearances, adjustments or other changes to its customers or its billing and collection procedures; or (v) whether any of the foregoing may have a material adverse effect on the finances and operations of the Water System. Prospective investors should assume that the restrictions and limitations instituted related to COVID-19 will increase, and the current upheaval to the national and global economies will continue and/or be exacerbated, at least over the near term, and the recovery may be prolonged, and therefore, COVID-19 may adversely impact Water System revenues.

Basis of Financial Reporting

The City's financial statements are prepared in accordance with generally accepted accounting principles for municipal governments. Financial statements of the Water System are prepared on the accrual basis of accounting. Financial statements for the Water System for the Fiscal Year ended June 30, 2019 are included as APPENDIX B – "AUDITED FINANCIAL STATEMENTS OF PASADENA WATER AND POWER ENTERPRISE FUNDS FOR THE FISCAL YEAR ENDED JUNE 30, 2019." See also "AUDITED FINANCIAL STATEMENTS."

All revenues of the Water System are generated by charges and other activities of the Water System. The Water System does not receive funds from the City or any tax revenues. All revenues generated by the Water System are deposited into the Water Fund as required by the Charter. See "SECURITY AND SOURCES OF PAYMENT FOR THE 2020A BONDS – The Water Fund." Labor costs for personnel