

PRELIMINARY OFFICIAL STATEMENT DATED _____, 2017

NEW ISSUE – FULL BOOK-ENTRY ONLYRATINGSFitch “_____”
S&P “_____”

(See “RATINGS” herein)

In the opinion of Norton Rose Fulbright US LLP, Los Angeles, California, Bond Counsel, under existing law interest on the 2017A Bonds is exempt from personal income taxes of the State of California and, assuming compliance with the tax covenants described herein, interest on the 2017A Bonds is excluded pursuant to section 103(a) of the Internal Revenue Code of 1986 (the “Code”) from the gross income of the owners thereof for federal income tax purposes. In the further opinion of Bond Counsel, interest on the 2017A Bonds is not an item of tax preference for purposes of the federal alternative minimum tax. See “TAX MATTERS.”

\$ _____

City of Pasadena, California
Water Revenue Refunding Bonds, 2017A 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, 2017A Series (the “2017A 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 Fifth Supplement to Water Revenue Bond Indenture, dated as of March 1, 2017 (the “Fifth Supplement”) (as so amended and supplemented, the “Indenture”).

The 2017A Bonds are being issued to provide moneys, together with certain other available funds, to (i) refund all of the City’s Water Revenue Bonds, 2007 Series, and (ii) pay costs of issuance of the 2017A Bonds, as more fully described herein. See “PLAN OF REFUNDING” herein.

The 2017A 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 2017A Bonds. Beneficial ownership interests in the 2017A Bonds may be purchased in book-entry form only in denominations of \$5,000 principal amount or any integral multiple thereof. Interest on the 2017A Bonds will be payable semiannually on June 1 and December 1 of each year, commencing June 1, 2017. Payments of principal of, premium, if any, and interest on, the 2017A 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 2017A Bonds.

The 2017A Bonds are subject to redemption prior to maturity as described herein. See “DESCRIPTION OF THE 2017A BONDS – Redemption” herein.

The 2017A 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 2017A BONDS ARE SPECIAL, LIMITED OBLIGATIONS OF THE CITY. THE 2017A 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 2017A BONDS. THE ISSUANCE OF THE 2017A 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 2017A Bonds will be sold by competitive sale on or about March ____, 2017 pursuant to the Notice Inviting Bids dated March ____, 2017. See “APPENDIX G – NOTICE INVITING BIDS” attached hereto. For additional information concerning the competitive sale of the 2017A Bonds, contact the City’s financial advisor, Public Resources Advisory Group, Los Angeles, California. The 2017A Bonds will be offered when, as and if issued, sold and received by the Initial Purchaser, subject to the approval of Norton Rose Fulbright US 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 2017A Bonds. Certain legal matters will be passed upon for the City by Michele Beal Bagneris, City Attorney of the City, and by Norton Rose Fulbright US LLP, Los Angeles, California, Disclosure Counsel. It is anticipated that the 2017A 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 March ____, 2017.

Dated March ____, 2017

MATURITY SCHEDULE

\$ _____
CITY OF PASADENA, CALIFORNIA
WATER REVENUE REFUNDING BONDS, 2017A SERIES

\$ _____ **Serial 2017A Bonds**

Maturity Date (June 1)	Principal Amount	Interest Rate	Yield	CUSIP[†]
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\$ _____ % Term 2017A Bonds due June 1, 20__ – Yield _____ % CUSIP[†] _____

\$ _____ % Term 2017A Bonds due June 1, 20__ – 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 2017A 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 2017A 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 2017A Bonds.

CITY OF PASADENA

CITY COUNCIL

Terry Tornek, *Mayor*
Gene Masuda, *Vice-Mayor*
Tyron Hampton, *Council Member*
Margaret McAustin, *Council Member*
John J Kennedy, *Council Member*
Victor M Gordo, *Council Member*
Steven G 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 Bagnaris

PASADENA WATER AND POWER STAFF

Gurcharan Bawa, *Interim General Manager*
Eric Klinkner, *Assistant General Manager & Chief Deputy*
Shari M Thomas, *Assistant General Manager for Finance, Administration and Customer Service*
Shan Kwan, *Assistant General Manager for Water Delivery*
Jeff Barber, *Interim Assistant General Manager for Power Delivery*
Arturo Silva, *Interim Assistant General Manager for Power Supply*

SPECIAL SERVICES

MUNICIPAL ADVISOR

Public Resources Advisory Group
Los Angeles, California

BOND AND DISCLOSURE COUNSEL

Norton Rose Fulbright US LLP
Los Angeles, California

FISCAL AGENT AND ESCROW AGENT

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

INDEPENDENT ACCOUNTANTS

Lance, Soll & Lunghard, LLP
Brea, 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 2017A 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 2017A 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 2017A BONDS, THE INITIAL PURCHASER MAY OVER-ALLOT OR EFFECT TRANSACTIONS THAT MAY STABILIZE OR MAINTAIN THE MARKET PRICE OF SUCH 2017A 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 2017A 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 2017A 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, 2017A 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 2017A 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, 2017A Series (the “2017A Bonds”). The 2017A Bonds are being issued to provide moneys, together with certain other available funds, to (i) refund the City’s Water Revenue Bonds, 2007 Series, and (ii) pay costs of issuance of the 2017A Bonds, as more fully described herein. See “PLAN OF REFUNDING.”

Authority for Issuance

The 2017A 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 _____, 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 Fifth Supplement to Water Revenue Bond Indenture, dated as of March 1, 2017 (the “Fifth 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, 2016, the

* Preliminary, subject to change

Water System served approximately 37,959 metered accounts, and total water sales were approximately 10.3 million cubic feet. See "THE WATER SYSTEM."

Security and Sources of Payment for the 2017A Bonds

On December 23, 2010, the City issued its Water Revenue Bonds, Issue of 2010, 2010A Series (Taxable Build America Bonds – Direct Payment) (the "2010A Bonds") in the aggregate principal amount of \$25,425,000, of which \$25,425,000 currently remain outstanding, and its Water Revenue Bonds, Issue of 2010, 2010B Series (Tax-Exempt) (the "2010B Bonds," and together with the 2010A Bonds, the "2010 Bonds") in the aggregate principal amount of \$4,575,000, of which \$2,765,000 currently remain outstanding.

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 \$23,560,000 currently remain outstanding.

The 2010 Bonds, the 2011A Bonds, together with the 2017A Bonds and any additional bonds hereafter issued under the Indenture are referred to herein as the "Bonds."

The 2017A Bonds are an obligation payable exclusively from the Water Fund of the City and certain other funds and accounts pledged under the Indenture. The 2017A 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 2010 Bonds, 2011A Bonds and any additional Bonds or Parity Debt (as defined in the Indenture). See "SECURITY AND SOURCES OF PAYMENT FOR THE 2017A BONDS – Outstanding Bonds" and "– Additional Bonds and Parity Debt."

The 2017A Bonds are special, limited obligations of the City. The 2017A 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 2017A Bonds. The issuance of the 2017A 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 2017A 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 2010 Bonds, the

2011A Bonds, the 2017A 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 2010 Bonds, the 2011A Bonds, the 2017A Bonds any additional Bonds and any other Parity Debt secured thereby is insufficient therefor See "SECURITY AND SOURCES OF PAYMENT FOR THE 2017A 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 2010 Bonds, the 2011A Bonds, the 2017A 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 2010 Bonds, the 2011A Bonds, the 2017A Bonds, any additional Bonds and any other Parity Debt See "SECURITY AND SOURCES OF PAYMENT FOR THE 2017A BONDS – Rate Covenant "

Other Matters

This Official Statement includes summaries of the terms of the 2017A 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 REFUNDING

The 2017A Bonds are being issued to provide moneys, together with certain other available funds, to (i) refund all of the City's Water Revenue Bonds, 2007 Series, currently outstanding in the principal amount of \$17,370,000 (the "2007 Bonds"), and (ii) pay costs of issuance of the 2017A Bonds.

Pursuant to an Escrow Agreement dated as of March 1, 2017 (the "Escrow Agreement"), by and between the City and The Bank of New York Mellon Trust Company, N A, as escrow agent (the "Escrow Agent"), a portion of the proceeds of the 2017A Bonds, together with certain other available funds, will be deposited into an escrow fund that will be sufficient to redeem on [March 23], 2017, the 2007 Bonds at a redemption price equal to 100% of the principal amount thereof.

Upon such deposit, the 2007 Bonds will no longer be deemed to be outstanding under the Indenture, and all obligations of the City with respect to the 2007 Bonds shall cease and terminate, except for the obligation of the City to cause the amounts due on the 2007 Bonds to be paid from funds on deposit in the escrow fund.

ESTIMATED SOURCES AND USES OF FUNDS

The estimated sources and uses of funds in connection with the 2017A Bonds are as follows

Sources:

Principal Amount of 2017A Bonds
 Plus Original Issue Premium
 Transfer from Parity Reserve Fund

Total

 =====

Uses:

Deposit to Escrow Fund
 Deposit to Cost of Issuance Fund⁽¹⁾
 Initial Purchaser's Discount

Total

 =====

⁽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 2017A Bonds. Totals may not equal the sum due to rounding

DESCRIPTION OF THE 2017A BONDS

General

The 2017A 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 2017A Bonds will be payable semiannually on June 1 and December 1, commencing June 1, 2017, and will be calculated on the basis of a 360-day year comprised of twelve 30-day months. The 2017A 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 2017A Bonds, references herein to the owners or registered owners shall mean Cede & Co, and not the beneficial owners of the 2017A Bonds. See APPENDIX C – BOOK-ENTRY ONLY SYSTEM."

Redemption

Optional Redemption. The 2017A Bonds maturing on and before June 1, 20__ are not subject to redemption prior to their respective stated maturities. The 2017A Bonds maturing on and after June 1, 20__ 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, 20__, at a Redemption Price equal to the principal amount of the 2017A Bonds called for redemption, together with accrued interest thereon to the date of redemption, without premium.

Mandatory Sinking Fund Redemption. The 2017A Bonds maturing on June 1, 20__ 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, 20__, at a Redemption Price equal to the principal amount thereof, plus accrued interest thereon to the date fixed for redemption, without premium

Term 2017A Bonds Due June 1, 20__

Mandatory Sinking Fund Payment Dates (June 1)	Mandatory Sinking Fund Payments
<hr/>	<hr/>

† Final Maturity

Selection of 2017A Bonds for Redemption Whenever provision is made in the Fifth Supplement for the redemption of less than all of the 2017A Bonds, the maturities of the 2017A Bonds to be redeemed shall be specified by the City. In the case of partial redemption of less than all of the 2017A Bonds of any maturity, the Trustee shall select the particular 2017A Bonds to be redeemed, from all 2017A 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 2017A Bonds so selected for redemption. Upon an optional redemption of a portion of any term 2017A Bonds, the principal amount of such term 2017A Bonds being redeemed shall be allocated against the scheduled mandatory sinking fund payments for such term 2017A Bonds in such manner as the City may direct and the City shall provide the Trustee a revised sinking fund payment schedule.

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 2017A 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 2017A Bonds of such maturity to be redeemed and, in the case of 2017A 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 2017A Bonds the Redemption Price thereof or of said specified portion of the principal amount thereof in the case of a 2017A 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 2017A 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 2017A 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 Series 2017A 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 Series 2017A 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 2017A Bonds called for redemption (principal and premium) is set aside for that purpose, the 2017A Bonds designated for redemption shall become due and payable on the redemption date, and upon presentation and surrender of said 2017A Bonds, at the place specified in the notice of redemption, such 2017A Bonds shall be redeemed and paid at said redemption price, and no interest shall accrue on such 2017A Bonds called for redemption after the redemption date

Debt Service Requirements

The following is the annual debt service schedule for the 2007 Bonds, the 2010 Bonds, the 2011A Bonds and the 2017A Bonds assuming no redemption other than mandatory sinking account redemptions

Bond Year Ending June 1	Outstanding Bonds ⁽¹⁾	2017A Bonds		Total
		Principal	Interest	
2017	\$ 5,447,198 13			
2018	7,102,571 26			
2019	7,102,321 26			
2020	5,710,108 76			
2021	5,659,208 76			
2022	5,590,208 76			
2023	5,524,033 76			
2024	5,454,621 26			
2025	5,381,021 26			
2026	5,306,396 26			
2027	5,231,096 26			
2028	5,145,021 26			
2029	5,064,771 26			
2030	5,016,003 76			
2031	4,995,976 26			
2032	4,954,630 00			
2033	4,929,340 00			
2034	3,630,526 26			
2035	3,595,595 00			
2036	3,555,905 00			
2037	2,186,585 00			
2038	2,145,040 00			
2039	2,097,655 00			
2040	2,049,430 00			
Total	<u>\$ 112,875,264 53</u>			

⁽¹⁾ Proceeds of the 2017A Bonds will be used to refund all of the 2007 Bonds as described herein. See "PLAN OF REFUNDING" herein. Amounts do not reflect the application of the cash subsidy equal to 32.6% of the interest on the 2010A Bonds the City expects to receive from the United States Treasury when such interest becomes payable. See "SECURITY AND SOURCES OF PAYMENT FOR THE 2017A BONDS – Outstanding Bonds" herein.

SECURITY AND SOURCES OF PAYMENT FOR THE 2017A BONDS

General

The 2017A Bonds are an obligation payable exclusively from the Water Fund of the City and certain other funds and accounts pledged under the Indenture. The 2017A 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 2010 Bonds, the 2011A 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 2017A Bonds are special, limited obligations of the City. The 2017A 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 2017A Bonds. The issuance of the 2017A 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 2010 Bonds, the 2011A Bonds, the 2017A 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 General Fund The voters last amended this code section in March of 1993

In compliance with California Proposition 218, the City eliminated the General Fund Transfer from Water Fund in fiscal year 2014 Beginning fiscal year 2015, the Water Fund pays the General Fund for the cost of services provided by the City departments based upon a cost of service study conducted in 2014 The results of this study detailed the actual costs incurred by the City in support of the Water Fund Overall, the analysis of General Fund support concluded that the City provides the Water Fund with approximately \$1 5 million of actual support for Police, Fire, and Public Works related services

The following table sets out the annual transfers (Fiscal Years 2013 and 2014) and reimbursements (Fiscal Years 2015-2017) 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
TRANSFERS/REIMBURSEMENTS TO THE GENERAL FUND
(Dollar Amounts in Thousands)

<u>Fiscal Year</u>	<u>Transfer Amount</u>
2013	\$3,167
2014	3,405
2015	1,544
2016 ⁽¹⁾	1,544
2017 ⁽²⁾	1,544

⁽¹⁾ Fiscal Year ended June 30, 2016 is based on unaudited information

⁽²⁾ Adopted Budget

Section 1410 of the Charter also 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.

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 2010 Bonds, the 2011A Bonds, the 2017A 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 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 2017A 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 2010 Bonds, the 2011A Bonds, the 2017A 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

Outstanding Bonds

Upon the issuance of the 2017A Bonds and a defeasance of all of the 2007 Bonds being refunded thereby, there will be Outstanding under the Indenture \$ _____ aggregate principal amount of Bonds, consisting of \$25,425,000 principal amount of the 2010A Bonds, \$2,765,000 principal amount of the 2010B Bonds, \$23,560,000 principal amount of the 2011A Bonds and \$ _____ principal amount of the 2017A Bonds

The City issued the 2010A Bonds as taxable bonds, and designated the 2010A Bonds as "Build America Bonds" under section 54AA(d) of the Internal Revenue Code of 1986, as amended (the "Code"), and as "qualified bonds" under section 54AA(g) of the Code In connection with the issuance of the 2010A Bonds, and as permitted by the American Recovery and Reinvestment Act of 2009 (the "Stimulus Act"), the City elected (which election is irrevocable pursuant to the provisions of the Stimulus Act) to receive directly from the United States Department of the Treasury ("Department of the Treasury") on or about each interest payment date for the 2010A Bonds a subsidy payment equal to 32.6% of the taxable interest it pays on the 2010A Bonds to the holders thereof The cash subsidy payment does not constitute a full faith and credit obligation of or guarantee by the United States Government, but is required to be paid by the United States Treasury under the Stimulus Act Any cash subsidy payments received by the City will constitute Other Water Revenues as defined in the Indenture If the City fails to comply with the conditions to receiving the federal cash subsidy throughout the term of the 2010A Bonds, it may no longer receive the cash subsidy payments and could be subject to a claim for the return of previously received subsidy payments The City has not undertaken or made any covenant for the benefit of the Owners of the 2010A Bonds to comply with such conditions and maintain its right to retain or receive future subsidy payments in respect of the 2010A Bonds The City is obligated to make all payments of principal of and interest on the 2010A Bonds, solely from the sources described herein, whether or not it receives cash subsidy payments pursuant to the Stimulus Act

Sequestration of Direct Subsidy Payments. On September 14, 2012 the United States Office of Management and Budget ("OMB") delivered a report to Congress (the "OMB Report") that provided estimates of cuts to federal programs that were necessary to reduce spending to levels under the congressionally-mandated sequestration process of the Budget Control Act of 2011 The cuts identified in the OMB Report included cuts to the subsidy payments to be made by the federal government to issuers of "direct-pay" tax credit bonds, such as Build America Bonds The first cuts required under sequestration took effect in federal fiscal year ending September 30, 2013 and as subsequently extended, such cuts will continue through and including the federal fiscal year 2024, absent further Congressional action (the "Sequester Cuts") For federal fiscal year ended September 30, 2017 direct subsidy payments were reduced by 6.9% The City estimates that it will receive approximately \$43,142 less in direct

subsidy payments than it otherwise expected during federal fiscal year 2017. The City is obligated to make all debt service payments on the 2010A Bonds without regard to the receipt of any federal subsidy payments by the City.

The City believes that the current reductions in federal subsidies will not materially adversely affect the financial condition of the City or the City's ability to meet any of its outstanding water system revenue obligations. At this time the City can make no representations as to whether the Sequester Cuts will increase in the future.

Additional Bonds and Parity Debt

Other than the 2007 Bonds, which will be defeased upon the issuance of the 2017A Bonds, the 2010 Bonds and the 2011A Bonds, the City has no other Bonds or Parity Debt outstanding.

The Indenture provides that no additional indebtedness of the City payable out of the Water Fund on a parity with the 2010 Bonds, the 2011A Bonds, the 2017A 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 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, less (iv) 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, 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.

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 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,

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,

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,

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,

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,

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

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 2010 Bonds, the 2011A Bonds, the 2017A 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 2010 Bonds, the 2011A Bonds, the 2017A 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 2017A 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 2017A 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 2017A 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 Norton Rose Fulbright US LLP, Bond Counsel, concurrently with the issuance of the 2017A Bonds, that the 2017A 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 2017A 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 2017A Bonds, there can be no assurance that remedies will be available to fully protect the interests of the holders of the 2017A Bonds Bankruptcy proceedings, or the exercise of powers by the federal or State government, if initiated, could subject the Owners of the 2017A 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

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")

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.

Power Supply Business Unit – This Unit is responsible for effectively managing PWP's energy portfolio, including 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 and load dispatch operations to ensure reliable delivery of electricity.

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 Master Plan.

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 operates and maintains the local water supply resources and distribution system.

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

GURCHARAN BAWA, Interim General Manager overseeing PWP's operation. Prior to the current position, Mr. Bawa was the Assistant General Manager for Power Supply. Mr. Bawa has been with PWP for 23 years working in the Power Production field managing regulatory and environmental issues. He was responsible for evaluation 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 and 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. Mr. Klinkner previously worked at 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 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.

SHAN KWAN, Assistant General Manager for Water Delivery. Mr. Kwan has been with PWP since 1985. Prior to his appointment as Assistant General Manager for Water Delivery, Mr. Kwan was a principal engineer in the Water System. He worked in water distribution, plant and facilities, quality and supply and resource planning. Prior to his employment with PWP, he was a construction inspector for Caltrans. Mr. Kwan holds a Bachelor of Science degree in civil engineering from UCLA and a Master's Degree in Business Administration from Claremont Graduate University.

JEFF BARBER, Interim Assistant General Manager for Power Delivery. Mr. Barber joined PWP in May 1986 as a Lineman. He is currently responsible for managing the design and construction of capital improvement and maintenance programs in Power Distribution. In his 37 years of utility experience, he has worked in the capacity of Line Crew Foreman, Power Distribution Section Supervisor, Power Distribution Superintendent and Power Delivery Operations Manager. Mr. Barber has a Liberal Arts degree in Business Management.

ARTURO SILVA, Interim Assistant General Manager for Power Supply. Mr. Silva joined PWP as a Power Plant Operator in January 2004 and was promoted to his current position of Power Plant Manager in October 2014. As an interim AGM, he is responsible for managing the long and short term energy resources, including local generation. Prior to joining PWP, Mr. Silva served in the U.S. Navy and is a veteran of the Gulf War. He has an Associate of Arts in Business Administration.

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 deregulation, 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 deregulation, drawing on the perspective of City management, labor, the community and other interested parties. In addition, it provides a forum to air concerns and viewpoints regarding deregulation, works directly with consultants and City staff to achieve City Council objectives, and serves as the workshop forum for deregulation 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 37,959 water meters, 31,505 meters, or 83.0%, are within the City limits and an additional 6,454 meters, or 17.0%, are outside the City limits. In Fiscal Year 2016, the Water System provided water service to a total population of approximately 165,909 people. During this period, water sales within the City limits were about 20,537 acre-feet, or 86.7%, while approximately 3,150 acre-feet, or 13.3% of water was sold 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) 15 groundwater wells (of which nine are active) with a production capacity of 33,800 acre-feet per year, (ii) five imported water connections on the Metropolitan Water District Upper Feeder, (iii) 110 million gallons of treated water storage capacity in 14 storage reservoirs (including the 50 million gallon Morris Jones Reservoir), (iv) 19 booster pumping stations supplying 23 different pressure zones, (v) 21 chlorination stations, (vi) 30 pressure reducing stations, and (vii) approximately 520 miles of transmission and distribution pipelines. Most of the Water System was installed between 1912 and 1965. The vast majority of these pipelines are unlined cast iron pipelines.

The peak water sales month for Fiscal Year 2016 occurred in September 2015, when 2,584 acre-feet or 842 million gallons were sold, while March 2016 was the low sales month for the Fiscal Year, when only 1,521 acre-feet or 495 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,				
	2012	2013	2014	2015	2016
Population Served Inside City Limits	140,432	141,565	140,879	141,510	141,023
Population Served Outside City Limits	<u>21,065</u>	<u>21,235</u>	<u>21,132</u>	<u>24,972</u>	<u>24,886</u>
Total Population Served	161,497	162,800	162,011	166,482	165,909
Rainfall in inches (October to September)	13.4	8.1	8.6	16.5	12.2
Peak Day Distribution (Million Gallons)	35.9	38.5	37.2	35.2	29.4
Average Daily Distribution (Million Gallons)	27.4	29.4	30.3	26.1	23.2

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. The sole source of PWP's imported water is Metropolitan Water District of Southern California ("MWD").

During Fiscal Year 2016, PWP purchased 57.7% of its water from MWD. It pumped 42% 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's 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,				
	2012	2013	2014	2015	2016
Purchased from MWD	17,960	18,254	23,096	17,451	15,008
Percentage of Total Supply	58.4%	55.5%	68%	59.6%	57.7%
From Water System Wells	12,580	14,607	10,867	11,826	10,931
Percentage of Total Supply	40.9%	44.4%	32.0%	40.4%	42.0%
From interconnections	208	54	10	9	87
Percentage of Total Supply	0.7%	0.2%	0%	0%	0.3%
Total Production	30,748	32,915	33,973	29,286	26,026

Source: Pasadena Water and Power Department

Current Water Supply

As noted above, there are three existing sources from which PWP obtains water: Raymond Basin groundwater, Raymond Basin surface water, and imported water from MWD. The following discussion details each of these sources.

Raymond Basin

Located in the eastern portion of Los Angeles County, the Raymond Groundwater Basin ("Raymond Basin") is an alluvial valley that is underlain by deposits of gravel, sand, silt and clay. The Raymond Basin is approximately 40 square miles in area. The basin is bounded on the north by the San Gabriel Mountains, on the south and east by the San Gabriel Valley and on the west by the San Rafael Hills. The San Gabriel Mountains rise to over 10,000 feet in elevation north of the Raymond Basin. 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.

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 15 groundwater production wells (of which nine are active and in production) 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 including PWP that pump groundwater from the Pasadena Sub-basin of the Western Unit of the Raymond Basin voluntarily reduced its 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 to 10,304 acre-feet/year. Due to spreading at the Arroyo Seco and at the Eaton Canyon spreading grounds,

PWP has increased its annual groundwater extraction rights by an average of 1,700 acre-feet/year since 2000

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 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. See "THE WATER SYSTEM – Environmental Regulation – *Recycle Water Policy*" for information regarding the PWP's development of a Salt and Nutrient Management Plan with respect to the Raymond Basin in connection with its plan to increase use of recycled water.

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, 2016, PWP has 22,784 acre-feet of water in storage in the Raymond Basin. Also, under a cooperative storage agreement with MWD, PWP has stored an additional 16,050 acre-feet of water in storage for MWD. This water is available to PWP during drought and emergencies at MWD's call.

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. In 1970, PWP constructed the 5-million gallons per day John L. Behner Water Treatment Plant ("Behner Water Treatment Plant"), which is located directly east of Jet Propulsion Laboratories ("JPL") in the Arroyo Seco Canyon. The treatment plant was shut down in June 1993 as a result of water quality regulations imposed pursuant to the Surface Water Treatment Rule. The feasibility of upgrading this plant was evaluated in a June 1995 study funded by the American Water Works Association Research Foundation, PWP and other local surface water purveyors. However, no attempt to bring the Behner Water Treatment Plant back on-line has been made.

Until June 1993, a portion of the Arroyo Seco water that was diverted by PWP was treated at the Behner Water Treatment Plant, while the remainder of the diverted water was sent to spreading grounds. 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. However, 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 that PWP could no longer receive full credit for spreading surface water in the Arroyo Seco, even though PWP absorbs all costs to maintain and operate the spreading basins. As a result of this mandate, a spreading methodology was developed 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 behind the dam. 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.

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 up to 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") only 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 Over the past ten years (from 2006 to 2015), MWD provided nearly between 50% and 60% of the water used in 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 18.7 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 Water Supply. MWD's two primary sources of water are the State Water Project and the Colorado River.

The State Water Project is owned by the State and operated by the State Department of Water Resources ("DWR"). The State Water Project ("SWP") transports water available from the San Francisco Bay/Sacramento-San Joaquin Delta ("Bay/Delta") to Southern California via the California Aqueduct. MWD contracted with DWR in 1960 (as amended, the "State Water Contract") for a share of the State Water Project water (approximately 46%). The State Water Contract, under a 100% allocation, provides MWD 1,911,500 acre-feet of water. Deliveries from the SWP to MWD over the past fourteen years (2002 through 2015), including water from water transfer, groundwater banking and exchange programs described below, varied from a low of 634,679 acre-feet in calendar year 2015 to a high of 2,200,000 acre-feet in 2004. For calendar year 2015, DWR's allocation to State Water Project contractors was 20% of contracted amounts, reflecting pumping restrictions due to biological opinions for Delta smelt and Chinook salmon, a below average precipitation in northern California, below average reservoir levels and record low snowpack conditions in the Sierra watershed. For MWD, the 2015 allocation including water from water transfer, groundwater banking and exchange programs provided 634,679 acre-feet. For calendar year 2016, DWR's initial allocation estimate to SWP contractors was set at 60% of contracted amounts reflecting average precipitation over the entire Sierra Nevada. For MWD, the revised allocation is 1,146,900 acre-feet.

Management of the availability of State Water Project supplies through water marketing and groundwater banking plays an important role in meeting California water needs. MWD is participating in groundwater banking programs and exchanges such as the Arvin-Edison/MWD Water Management Program, the Semitropic/MWD Water Banking and Exchange Program, and the San Bernardino Valley Municipal Water District Program. MWD also has been negotiating, and will continue to pursue, water purchase, storage and exchange programs with other agencies in the Sacramento and San Joaquin Valleys. These programs involve the storage of both State Water Project supplies and water purchased from other sources to enhance MWD's dry-year supplies and the exchange of normal year supplies to enhance MWD's water reliability and water quality, in view of dry conditions and potential impacts from recent Endangered Species Act litigation.

The SWP water is managed by DWR and the operation is governed by a number of laws, regulations, and mandates that influence the amount of water supplies available to the SWP water contractors including MWD. In July 2015, DWR released the 2015 State Water Project Delivery Capability Report, and it provides estimates of the current (2015) and future (2035) SWP delivery capability for each SWP contractor under a range of hydrologic conditions. These estimates incorporate regulatory requirements in accordance with the biological opinions of the U.S. Fish and Wildlife Services and the National Marine Fishery Services issued on December 15, 2008 and June 4, 2009, respectively.

In addition, these estimates of future capability also reflect potential impacts of climate change and sea level rise

The future of the SWP's reliability is an on-going concern of many stakeholders throughout the State. The Bay Delta Conservation Plan ("BDCP") was created in 2006 to better manage the Bay Delta under co-equal goals of environmental restoration and habitat protection, and water supply reliability. The first draft of the BDCP was released in March 2012 which analyzed a number of alternatives for meeting the goals of the BDCP. In the summer of 2012, Governor Brown outlined revisions to the proposed BDCP. Throughout 2012 to 2013, public scoping meetings were held to answer questions and gather comments. In December 2013, the draft BDCP and the draft environmental impact report were released for public review and comments. A year later, the State Water Resources Control Board ("SWRCB") announced further refinements to the revised BDCP, and in April 2015 DWR announced the preferred alternative (Alternative 4A) known today as California WaterFix. Currently the proposed California WaterFix is going through a number of regulatory hearings for stream diversion permits and environmental review.

To obtain its Colorado River supply, MWD has a permanent service contract with the United States Secretary of the Interior for delivery of water via the Colorado River Aqueduct. California is apportioned the use of 4.4 million acre-feet of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California and Nevada. In addition, California has historically been allowed to use Colorado River water apportioned to but not used by Arizona and Nevada. Under the priority system that governs the distribution of Colorado River water made available to California, MWD holds the fourth priority right to 550,000 acre-feet per year. This is the last priority within California's basic apportionment of 4.4 million acre-feet. In addition, MWD holds the fifth priority right to 662,000 acre-feet of water, which is in excess of California's basic apportionment. Until 2003, MWD had been able to take full advantage of its fifth priority right entitlement as a result of the availability of surplus water and unused water. However, Arizona and Nevada increased their use of water from the Colorado River, significantly reducing unused apportionment available for California since 2002. Prior to 2003, MWD could divert over 1.2 million acre-feet in any year, but since that time, MWD's net diversions of Colorado River water have been limited to a low of nearly 445,000 acre-feet in 2011 and a high of approximately 1,176,334 acre-feet in 2015. Average annual net deliveries for 2003 through 2015 were approximately 796,000 acre-feet, with annual volumes dependent primarily on programs to augment supplies, including transfers of conserved water from agriculture. MWD projects that its available Colorado River supply augmented by various exchange and storage programs will be about 966,000 acre-feet in 2016.

MWD has taken steps to augment its share of Colorado River water through agreements with other agencies that have rights to use such water. MWD has entered into agreements with the Imperial Irrigation District, Coachella Valley Water District and Palo Verde Irrigation District and is seeking additional agreements with other agencies to reduce their diversions from the Colorado River, thereby augmenting MWD's available supply.

In 2007, the Secretary of the Interior adopted the Record of Decision to implement the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (Interim Guidelines). The Interim Guidelines, which are in effect for a 20-year period through 2026, includes shortage triggers for water users in Arizona and Nevada based on water surface elevations in Lake Mead. California was not included in these initial shortage triggers because of its higher priority confirmed in the Colorado River Basin Project Act of 1968. The Interim Guidelines address shortage amounts that are applied at certain Lake Mead water levels down to elevation 1,025'. If Lake Mead was to drop below 1,025', the Secretary of the Interior would consult with the Colorado River Basin states to discuss further actions or reductions to mitigate Lake Mead from falling below elevation

1,000' The Interim Guidelines do not address which state or agencies would take any additional water reductions

The Interim Guidelines also established the Intentionally Created Surplus (ICS) program, which allow agencies to store water developed through extraordinary conservation programs in Lake Mead for later delivery. MWD has greatly benefited from its use of the ICS program such as taking delivery of 500,000 acre-feet over the past four years to offset low water delivery via the SWP due to California's drought and pumping restrictions. At the time the Interim Guidelines were being developed, California and Arizona could not agree on how the ICS program would operate during periods when a water shortage declaration was declared at Lake Mead. Representatives from Arizona stated that without an agreement they would attempt to block any effort by California to recover ICS water when a shortage has been declared on the Colorado River.

In the summer of 2016, Lake Mead reached its lowest levels since it was initially filled in the 1930s. Projections indicated a potential risk of Lake Mead falling to critically low levels which could initiate Colorado River water users in the Lower Basin at risk for curtailments. To address this increased risk, representatives from the U.S. Bureau of Reclamation, Arizona, Nevada, California, and water agencies including MWD, began developing a proposal to reduce the likelihood of Lake Mead falling to 1,020' and to develop operational tools to provide greater flexibility to meet water supply needs. The working group proposed the Lower Colorado River Basin Drought Contingency Plan ("Contingency Plan"). The Contingency Plan includes provisions for Arizona and Nevada to implement additional reductions beyond what is identified in the Interim Guidelines, and for California to also participate in making reductions. The benefits of the Contingency Plan include significantly reducing the risk of Lake Mead reaching 1,020', the ICS program could be recoverable during reductions, and water reductions would be fully recoverable through 2057 if Lake Mead elevation increases to 1,110'. The Contingency Plan is still being negotiated between the parties.

Over the past 20 years, MWD has developed a large regional storage portfolio that includes dry year and emergency storage capacity. Storage enables the capture of surplus water during normal and wet periods, and allow for drawdown during dry year conditions. Since 1990, MWD has invested billions of dollars to develop more than 5,967,000 acre-feet of storage capacity. Examples of surface storage include Diamond Valley Lake, flexible storage in Castaic Lake and Lake Perris, and the ICS program in Lake Mead. Groundwater storage includes Semitropic Storage Program, Arvin-Edison Storage Program, San Bernardino Municipal Water District Storage Program, Kern Delta Water District Storage Program, and Mojave Storage Programs.

MWD's storage capacity, which includes reservoirs, conjunctive use and other groundwater storage programs within MWD's service area and groundwater and surface storage accounts delivered through the SWP or Colorado River Aqueduct, is approximately 5.97 million acre-feet. MWD's ability to replenish water storage, both in the local groundwater basins and in surface storage and banking programs, has been limited by Bay-Delta pumping restrictions and Endangered Species Act considerations. MWD replenishes its storage accounts when imported supplies exceed demands. Effective storage management is dependent on having sufficient years of excess supplies to store water so that it can be used during times of shortage. MWD forecasts with anticipated supply reductions from the SWP due to pumping restrictions it will need to draw down on storage.

At the end of 2006, MWD's dry-year storage reserves reached 2.2 million acre-feet. From 2007 to 2009, MWD drew down 1.2 million acre-feet of its stored water to off-set low SWP water deliveries and dry hydrological conditions. From 2009 to 2012, improved hydrological conditions on the SWP combined with low demands, allowed MWD to return 1.7 million acre-feet to its storage reserves. Due to unprecedented dry conditions in California from 2013 to 2015, MWD drew down 1.8 million acre-feet

from its storage reserves. In the winter of 2015/2016, hydrological conditions in northern California improved which allowed MWD to begin refilling its storage reserves. MWD anticipates to add approximately 376,000 acre-feet to its dry-year reserves raising the total to 1.9 million acre-feet. In addition, MWD's policy is to maintain roughly 626,000 acre-feet in emergency storage in all years.

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) population growth within the service area, (2) increased competition for low-cost water supplies, (3) variable weather conditions, and (4) increased environmental and water quality regulations.

Calendar year 2007 introduced a number of water supply challenges for MWD. Critically dry year conditions affected all of MWD's water supply sources in addition to a ruling by the Federal Courts in August 2007 provided protective measures for the Delta Smelt which brought uncertainty about future pumping operations from the SWP. This uncertainty raised the possibility that MWD would not have access to the supplies necessary to meet its water demands and would have to allocate water to its member agencies. In response, MWD and member agencies developed the Water Supply Allocation Plan ("WSAP"), and it was adopted by MWD's Board of Directors in February 2008. The WSAP sets forth specific formulas for calculating member agency supply allocations and key implementation elements necessary for administering an allocation.

In April 2015, MWD's Board adopted a resolution declaring a Regional Shortage Level 3 due to dry winter conditions in 2014 and 2015, and a 20% allocation of SWP water. The Regional Shortage Level 3 was also consistent and in support of Governor Brown's Executive Order B-29-15 calling for a 25% reduction in water use throughout California. The Regional Shortage Level 3 would be effective July 1, 2015 through June 30, 2016. As a result of aggressive conservation, public outreach and education, and cooperation of water users throughout southern California, MWD's demand was reduced beyond the Regional Shortage Level target. In addition, favorable hydrologic conditions occurred in the winter of 2015/2016 which resulted in DWR announcing a 60% allocation for SWP water. In May 2016, MWD's Board rescinded the Regional Shortage Level 3 in consideration of overall reduced water demands and increased SWP water supplies. In December 2016, the DWR updated its estimated allocation for 2018 from 20% to 45% for most requests based on recent reservoir levels and expected hydrological conditions. The allocation for 2017 is 20%.

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"). 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 2002/2003 through 2013/2014 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.

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

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

	<u>Calendar Year 2016 Rates⁽¹⁾⁽²⁾</u>	
	<u>Tier 1</u>	<u>Tier 2</u>
Supply Rate	\$156	\$290
System Access Rate	259	259
Water Stewardship Rate	41	41
System Power Rate	138	138
Treatment Surcharge	<u>348</u>	<u>348</u>
Treated Full Service	\$942	\$1,076

Source: MWD

⁽¹⁾ Effective January 1, 2017, Tier 1 and Tier 2 full service treated water is \$979/acre-foot and \$1,073/acre-foot respectively

⁽²⁾ Effective January 1, 2018, Tier 1 and Tier 2 full service treated water is \$1,015/acre-foot and \$1,101/acre-foot respectively

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 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 and the Capacity Charge.

The Readiness-to-Serve Charge is a variable annual charge of approximately \$153 million 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 Readiness-to-Serve Charge is about 1.25%.

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. Effective January 1, 2016, the Capacity Charge is \$10,900/cfs of maximum daily flow and decreases to \$8,000/cfs for calendar year 2017 and rises to \$8,700/cfs for calendar year 2018.

Future Sources of Water Supply and/or Reliability

PWP is actively pursuing local water resource projects to reduce dependence on imported water from MWD. Projects currently in progress are outlined below and comprise 35% of the anticipated \$83.2 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. In 2009, a wildfire, known as the Station Fire, swept through a large portion of the Arroyo Seco. During the winter rains of 2010, large volumes of fire debris flowed through the canyon damaging PWP's diversion structures. 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 \$12 million and is included in the expected capital requirements listed in Table 5 below. The project is expected to be partially funded through a memorandum of understanding in place between the City and the Los Angeles County Flood Control District. The City is the recipient of a \$3.271 million-Proposition 84 grant fund with the County as the grantee in an agreement with the State Department of Water Resources for this grant funding.

A lawsuit has been filed against the City regarding the Arroyo Seco Canyon Project. The petitioners in the litigation are challenging the findings in the California Environmental Quality Act Initial Study/Mitigated Negative Declaration ("CEQA IS/MND") and the approval of the City Council. The litigation is on-going, and the trial court [heard oral argument on the merits of the matter in January 2017]. Until the litigation is concluded, no reimbursements are allowed for construction-related costs under the Proposition 84 grant funding agreement.

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 Environmental Impact Report ("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 and is considered complete following certification by the Pasadena City Council.

The project will be constructed over six phases and will ultimately be capable of providing up to 3,100 acre-feet/year of non-potable water to Pasadena. The first phase will deliver approximately 700 acre-feet/year of non-potable water to the west side of the City to serve Arts Center College of Design, Brookside Golf Course, Rose Bowl, and Brookside Park.

In December 2015, PWP submitted an application to the State Water Resources Control Board for funding under Proposition 1. The project was placed on an eligibility list to receive up to 35% of the capital cost of constructing the first phase of the project with grant funding and 65% with low interest loans. Also, Pasadena is currently preparing an application package to be submitted to the United States Bureau of Reclamation for a \$7 million Title XVI grant for reimbursement of a portion of the project's planning, design, and construction costs. The total estimated construction cost for the first phase of the project is \$20 to \$25 million, and is included in the expected capital requirements listed in Table 5 below. Construction is expected to begin in 2018, pending completion of the permitting process with State and Federal agencies.

Water Conservation Programs and Water Integrated Resource Plan

Approximately 60% of the water that PWP delivers to customers is purchased from MWD. In recent years, prolonged droughts and environmental flow restrictions have triggered MWD to impose allocation limits on its member agencies. 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. In addition to the Comprehensive Water Conservation Plan, The City has adopted a comprehensive Water Integrated Resource Plan that provides a 25-year water supply plan to establish a framework and a strategy for future investment in water supply and conservation programs to reliably meet the projected needs of its water customers. The goals of the WIRP are to sustainably and cost-effectively address local and regional water supply and demand issues, reflect community values, and adapt to changing conditions.

In June 2016, the City Council adopted the City's 2015 Urban Water Management Plan ("2015 UWMP"). The 2015 UWMP included analysis of PWP's long-term supply and demand planning to 2040 under three hydrologic conditions. The reliability assessment demonstrated that with supplies from groundwater based on PWP's decreed rights, imported water as made available by MWD, and the phased implementation of the Non-Potable Water Project, supplies will be sufficient to meet PWP's projected demands. Furthermore, PWP will continue implementing its comprehensive water conservation program to reduce water demands, thus increasing supply reliability.

Both the WIRP and 2015 UWMP indicate how Pasadena will meet the new Water Conservation Act of 2009 as part of the Seventh Extraordinary Session, referred to as Senate Bill X7-7 ("SB X7-7"), requiring statewide per capita water use be reduced by 20% by the year 2020.

Included in PWP's Comprehensive Water Conservation Plan and the WIRP are the following steps:

- New ordinances to promote sustainable practices such as efficient landscaping
- An extensive array of water conservation workshops and online instructional videos for improving water efficiency
- The City has a Water Waste Prohibitions and Water Supply Shortage Plans Ordinance. On July 28, 2014 the City Council made a determination that a water shortage exists, adopted a 20% water conservation target, and approved the Level 1 Water Supply Shortage Plan. And on June 1, 2015, the City Council adopted a 28% water conservation target compared to calendar year 2013, approved the Level 2 Water Supply Shortage Plan, and adopted additional mandatory water

conservation measures including a requirement for all multifamily master metered accounts to retrofit showerheads and faucet aerators to comply with California Green Building Code standards by September 30, 2015

PWP is also implementing the following programs as part of the Comprehensive Water Conservation Plan and the WIRP

- Residential and Commercial Rebate Program PWP offers residential customers enhanced incentives for high efficiency clothes washers, high efficiency clothes washers, rain barrels, cisterns, weather based irrigation controllers, soil moisture sensors, and turf replacement The commercial program include rebates for cooling tower conductivity controllers, high efficiency toilets and urinals, air cooled ice machines and central control irrigation controllers
- Water Audits PWP offers building, landscape and irrigation audits to both residential and commercial customers, with recommendation for efficiency upgrades, retrofits, and landscape water budgets based on California's Model Water Efficiency Landscape Ordinance
- Workshops and Online Support PWP offers workshops on efficient irrigation, turf removal and drought tolerant gardens, edible gardens, and installing greywater systems In addition to the workshops, PWP developed an online resource guide that features sample landscape designs, turf removal options, irrigation retrofit instructions, a list of resources, and a link to an interactive plant palette website
- Greywater Program In Fiscal Year 2016 PWP launched its Laundry-to-Landscape ("L2L") Greywater Program, offering workshops, onsite support, and incentives for residential L2L system installations PWP has expanded the greywater program to include a no-cost direct install of L2L systems for income qualified single family residential water customers, and provides incentives to cover the cost of permit fees for simple greywater systems PWP was selected to receive a grant in the amount of \$100,000 from the United States Bureau of Reclamation to expand the L2L Greywater Program in Fiscal Years 2017 and 2018
- Drought Tolerant Demonstration Gardens at City Facilities PWP has partnered with the Pasadena Fire Department and the Housing Department to develop drought-tolerant demonstration gardens at five Pasadena Fire Stations This project is part of PWP's continuing commitment to maximize water savings throughout the City and to support water-saving opportunities at city facilities
- Under One Roof Program PWP expanded its partnership with the Maintenance Assistance for Homeowners Program ("MASH") to include free turf removal to income qualified homes MASH removes the turf, retrofits the existing inefficient irrigation to a drip system, and installs the new drought tolerant landscape
- Water Waste Enforcement Program PWP has a robust Water Waste enforcement program and in Fiscal Year 2016 it hired several additional temporary water conservation team members and enhanced its water waste patrolling to night time hours In Fiscal Year 2016, PWP received over 5,455 water waste reports, issued 2,236 violation letters, and 283 fines Reports received marked a 60% increase over Fiscal Year 2015 and a 1,100% increase over 2014
- WaterSmart Program PWP launched a water conservation behavior efficiency program that compares the water usage of each residential account holder to homes with similar characteristics and provides each home with a water usage ranking

Per the Urban Water Management Planning Act, it requires water agencies to report an interim 2015 urban water use target and a 2020 urban water use target per SB X7-7. The City's 2015 UWMP reported an interim 2015 target of 190 gallons per capita per day ("gpcd") and actual usage for calendar year 2015 was 148 gpcd. The 2020 target is calculated at 169 gpcd.

Risks to Water Supply

PWP's water supply is affected by many factors, including annual rainfall precipitation, production patterns, recharge trends, lowering of the groundwater table, and equipment and infrastructure failure. Continued 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 guarantee that PWP's sources of water supply will remain constant throughout the period the 2017A 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 57.7% of the City's water supply in Fiscal Year 2016. See "Water Production" above.

At the end of Fiscal Year 2016, PWP has 22,784 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 two years of imported water supply. The City is also looking into developing alternative sources of supply such as recycled water. See "Future Sources of Water Supply and/or Reliability" above.

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, general physical, bacteriological, volatile organic chemicals ("VOCs"), total trihalomethanes ("THMs"), perchlorate, nitrate, ammonia, nitrite, fluoride and metals analyses are performed in PWP's 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 2015 shows no objectionable water quality characteristics. However, 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 their water supply and PWP's groundwater has naturally occurring fluoride. The average fluoride level in the drinking water is 0.9 parts per million ("ppm"). At this level, fluoride has been proven to be effective in preventing tooth decay.

The quality of water in the Raymond Basin, the source of approximately 40% of the City's water supply, is generally good. The Raymond Basin has not suffered from the widespread contamination evident in some of Southern California's groundwater basins. In some portions of the Raymond Basin, the presence of nitrates requires blending of some sources 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

The most notable VOCs and perchlorate contamination is in the vicinity of 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. Recent testing indicates that some of the active wells have trace levels of perchlorate but the drinking water meets the requirements of the Division of Drinking Water. Perchlorate is generally recognized as a compound of solid rocket and missile propellant and a common waste by-product from the production and use of solid rocket fuel.

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.

The City constructed a perchlorate and VOC treatment plant, known as the Monk Hill Groundwater Treatment Plant. The plant treats the four contaminated wells in the Arroyo Seco area near the Jet Propulsion Laboratory ("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, made up of five pairs of steel tanks containing about 40,000 pounds per vessel of charcoal-like carbon particles to remove VOCs.

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 constituents 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

Escherchia 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.

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”). Currently there is a PHG for 123-TCP but there is no MCL. The State is preparing an MCL for 123-TCP which is expected to be adopted no later than the end of 2017. Four PWP wells are known to have 123-TCP in concentrations that may be near or above the proposed MCL. Should this MCL be adopted, these wells will be treated using blending at the Sunset and Jones Reservoirs.

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 using 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 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.

Recycled Water Policy. The California State Water Resources Control Board (SWRCB) adopted a Recycled Water Policy (RWP) in February 2009. The purpose of the RWP is to increase the use of recycled water in a manner that implements state and federal water quality laws. When recycled water is used in compliance with the RWP and all applicable state and federal water quality laws, the State Board and Los Angeles Regional Board strongly support its use as a safe alternative to potable water for approved uses. The RWP requires that each water basin where recycled water is going to be used develop a Salt and Nutrient Management Plan (SNMP) to facilitate basin-wide management of salts and nutrients. In every basin there are sources waterborne salts and nutrients, irrigation, septic tanks, imported water, which can accumulate in a groundwater basin, impairing the beneficial uses as drinking water or agricultural water. The RWP requires stakeholders in each basin to develop SNMPs to ensure that the beneficial uses are not impaired by the accumulation for salts and nutrients. PWP operates in the Raymond Basin where the stakeholders, including PWP, has developed a SNMP. PWP is beginning the

process of developing a system to deliver and sell recycled water. That system will have to be compliant with the Raymond Basin SNMP.

Future Regulation. Water utilities are subject to continuing 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 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 rates and charges would be required to be increased to offset those expenses.

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 2017A Bonds.

Water System Master Plan

The City adopted a Water System Master Plan in 2002. The plan provided the framework for capital investment in the water distribution system over an 18-year period, including a proposed budget and funding plan. The Water System Master Plan is currently being updated and a revised plan is expected during Fiscal Year 2017.

BELOW IS A REVIEW OF THE CAPITAL IMPROVEMENTS COMPLETED SINCE THE IMPLEMENTATION OF THE WATER SYSTEM MASTER PLAN IN FISCAL YEAR 2003.

Pipeline Replacement. Seventy miles of pipelines have been replaced in the last fourteen years averaging five miles of pipeline replacement per year. With a total of 520 miles of pipes in PWP's water system, and a five mile per year replacement schedule it will take 104 years to replace all the pipelines in the water system. The useful life of pipes is estimated to be 100 years. While the current replacement schedule may seem adequate in the long term, there are 80 miles of pre-1930 pipe remaining in the water system. Most of the remaining pipes were installed during the late 1920s. With the current replacement schedule some pipes could reach 120 plus years before being replaced.

While PWP concentrated its water main replace program on the age of the pipe 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. On an average, PWP experiences about 24 water main breaks a year.

Water Meter Replacement. The Water System Master Plan included 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 for both the Water and Power systems For the next several years, PWP will continue to support and improve the AMR program to ensure maximum value is achieved from the investments already made

Reservoir Seismic Retrofit. Two reservoirs out of the twelve reservoirs that need seismic retrofit have been retrofitted This work has been more involved than previously anticipated Most of the reservoirs are over eighty years old A full investigation of the existing structural condition must be completed before designing the retrofits Currently, PWP is investigating the five million gallon Sunset Reservoir Unit 1 This Reservoir was built in 1888 The initial investigation indicates that a total replacement of the reservoir with a new water tank will be more viable in the long term

Groundwater Wells Rehabilitated. PWP has rehabilitated more groundwater wells than was recommended in the Water System Master Plan The rehabilitations have been driven more by mechanical problems, and dealing with low groundwater levels PWP continues to have problems with many of its older groundwater wells Some of these wells were drilled over eighty years ago As part the Fiscal Year 2017 Capital Improvement Program (“CIP”), PWP will be investigating constructing new wells to replace the 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 that are the foundation of the Water System Most of the water used north of the 210 freeway flows through one of these booster stations

Water System Master Plan update. It is proposed that PWP update the Water System Master Plan in Fiscal Year 2018 While there are many facilities identified in the 2002 Water System Master Plan that still need to be upgraded or replaced, there have been significant changes in water demands and lessons learned since the implementation of the original plan

Water demands are currently 28% lower than what was projected in the Water System Master Plan The projected average annual water usage was to be 41,300 acre-feet by 2015 During the last three years the average water usage was 29,800 acre-feet The sizing of pipes, reservoirs, and booster stations are highly dependent on water demands One of the initial tasks in the new master plan will be to forecast future water demands

There has been some shift in priorities of the type of projects PWP is working on PWP has put additional emphasis on projects that increase the water supply Some of these projects were identified in the WIRP On an average for the last five fiscal years about 26% of the Water CIP has be spent on projects not identified in the Water System Master Plan

Capital Improvement Program

With the development of the Water System Master Plan and the related capital improvement program, staff conducted an analysis to determine a financial structure that supports 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 Capital Improvement Program (“CIP”) Based on this analysis, staff proposed the Capital Improvement Charge (“CIC”) based on the cost of revenue bond financing and capital expenditures In 2003, the City Council approved the implementation of the Capital Improvement Charge (“CIC”) based on staff recommendation In January 2016, the City Council approved an increase to the CIC in order to support the debt service and CIP expenditures for the Water System Through the CIC, the City has imposed water user charge increases five times totaling \$1 005 per billing unit Based

on water consumption for Fiscal Year 2017 and the current rate, the CIC will generate approximately \$10.6 million. The CIC revenues are specifically dedicated to fund the proposed Water System Master Plan water system improvements. See “SECURITY AND SOURCES OF PAYMENT FOR THE 2017A 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

Each year the City Council approves a five-year capital improvement program (“CIP”) for the Water System. The last CIP for the Water System was approved in June 2016. The CIP for Fiscal Years 2017-2021 identified approximately \$83.2 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>
2017	\$13,829
2018	16,435
2019	32,550
2020	12,381
2021	7,965

Source: Pasadena Water and Power Department

The CIP for the Water System includes the design and construction of a recycled water distribution facility, 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

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,				
	2012	2013	2014	2015	2016 ⁽¹⁾
Total Production	13,308	14,314	14,794	12,753	11,299
Water Sold	12,284	13,168	13,843	12,412 ⁽²⁾	10,318 ⁽²⁾
Water System Losses	1,024	1,146	951	341	982
Number of Services	37,891	37,934	37,974	37,972	37,959

Billing Unit = 100 Cubic Feet

⁽¹⁾ Fiscal Year ended June 30, 2016 is based on unaudited information

⁽²⁾ Decline from historical level reflects implementation of conservation measures and the effects of current economic conditions

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 87% of the volume of water sold by the Water System in Fiscal Year 2016. Receipts from customers within the City limits (including municipal and other customers) represent approximately 87% 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,				
	2012	2013	2014	2015	2016 ⁽¹⁾
Volume (000's Billing Units)					
Inside City Limits	10,168	10,861	11,471	10,353	8,692
Outside City Limits	1,682	1,779	1,871	1,684	1,372
Municipal and Other	<u>434</u>	<u>528</u>	<u>501</u>	<u>375</u>	<u>253</u>
Total	12,284	13,168	13,843	12,412	10,317
Revenue (000's Dollars)					
Inside City Limits	\$35,511	\$37,692	\$40,114	\$38,029	\$33,966
Outside City Limits	6,872	7,374	7,809	7,327	6,339
Municipal and Other	<u>11,918</u>	<u>13,470</u>	<u>13,310</u>	<u>12,084</u>	<u>10,530</u>
Total	\$54,301	\$58,536	\$61,233	\$57,440	\$50,835

Billing Unit = 100 Cubic Feet

⁽¹⁾ Fiscal Year ended June 30, 2016 is based on unaudited information

Source Pasadena Water and Power Department

Largest Customers

The ten largest customers of the Water System for the Fiscal Year ended June 30, 2011 are listed in the table below

**TABLE 8
TEN LARGEST CUSTOMERS
(Billing Units)**

<u>Customer</u>	<u>Percent of Total Operating Revenues</u>
CalTech/JPL	2.62%
American Golf (Brookside)	1.53
Public Works	1.17
Annandale Golf Club	0.91
Huntington Memorial Hospital	0.76
O&J Management	0.66
Langham Huntington Hotel	0.30
Dydee Service of Pasadena	0.28
Pasadena Villages LP	0.26
Pasadena City College	0.22
Total	8.71%

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 XIII D 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 water projected to be purchased from MWD are passed through to customers via the First Block, Second Block and Third Block commodity rates. The commodity rates are re-set from time to time to recover all costs associated with the purchase and distribution of MWD water. In order to accommodate changes in MWD's rates, water delivered under commodity rates is subject to an automatic adjustment, the purchased water adjustment charge, which tracks changes in MWD's prices occurring since the last change in rates.

The City's current rate structure is an inverted block structure as a result of the Cost of Service Study PWP completed in 2008. Water usage rates are higher for higher levels of consumption. The rates also have seasonal and inside City limits/outside City limits price differentials, with higher water rates in the summer and in areas outside the City limits.

The water commodity rate structure was amended in June 2009 to include, in addition to the First Block, Second Block and Third Block commodity rates, two additional higher priced blocks (Blocks 4

and 5) to further encourage water conservation and provide the necessary price signals required to achieve the desired water conservation objectives of reducing water demands by 10%. In addition, the water rate structure was amended to recover higher costs of purchased water in excess of the City's water allocation from MWD, including the cost of higher penalty rates, in the event that the City exceeded its water allocation level.

In June 2010, the water commodity rate structure was further modified to reduce Block 4 rates and to eliminate Block 5 rates in response to favorable conservation efforts by City's customers and based on the City's reassessment of MWD's program and pricing scheme. Additionally, in June 2015, in response to MWD's approved January 2015 and January 2016 rate increases, the City also approved increases to its purchased water adjustment charge which were implemented in October 2015 and October 2016.

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 recover 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 City's rate structure includes a 25% differential for customers located outside of the City boundaries for the Commodity charge and Distribution and Customer charge. A 35% differential is added to the Capital Improvement Charge rate component to reflect actual costs of serving those customers. At currently expected levels of water consumption, revenue from the rate differential is expected to be approximately \$1.3 million annually.

A class action lawsuit has been filed by customers located outside of the City boundaries for the 25% differential added to the Commodity and Distribution and Customer charges. The lawsuit alleges that the rate differential violates the requirements of Proposition 218 in that such rate differential is not cost-based. See "LITIGATION" herein.

The following chart outlines the current water rate structure for the City. Area A includes all areas inside the City limits and Area B includes all areas outside the City limits. A customer is charged First Block rates for initial quantity consumed, Second Block rates over initial quantity, and Third Block rates for any excess over First and Second Block quantities.

**TABLE 9
RATE STRUCTURE**

COMMODITY RATES FOR ALL WATER DELIVERED (PER 100 CUBIC FEET) ⁽¹⁾

	<u>April 1-September 30</u>		<u>October 1-March 31</u>	
<u>Area A</u>	First Block	\$1 39537	First Block	\$1 36885
	Second Block	2 98851	Second Block	2 91559
	Thrd Block	3 48921	Thrd Block	3 40171
	Fourth Block	4 24026	Fourth Block	4 13089
<u>Area B</u>	First Block	\$1 62296	First Block	\$1 58981
	Second Block	3 61438	Second Block	3 52323
	Thrd Block	4 24026	Thrd Block	4 13088
	Fourth Block	5 17907	Fourth Block	5 04235

FIRST, SECOND, AND THIRD BLOCK ALLOCATIONS ⁽²⁾

<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>
5/8", 3/4"	0-8	9-24	25-34
1"	0-12	13-40	41-60
1-1/2"	0-22	23-86	87-132
2"	0-48	49-188	189-290
3"	0-116	117-500	501-860
4"	0-225	226-1,000	1,001-1,800
6"	0-500	501-5,600	5,601-8,800
8"	0-500	501-5,600	5,601-10,000
10", 12"	0-500	501-24,000	24,001-32,000

MONTHLY DISTRIBUTION AND CUSTOMER CHARGE FOR SERVICE ⁽³⁾

<u>Meter Size (Inches)</u> <u>Area A</u>		<u>Meter Size (Inches)</u> <u>Area B</u>	
5/8" and 3/4"	\$ 17 51	5/8" and 3/4"	\$ 21 79
1"	33 25	1"	41 38
1 1/2"	68 41	1 1/2"	84 85
2"	157 66	2"	196 21
3"	385 08	3"	479 32
4"	592 13	4"	737 76
6"	912 95	6"	1,135 69
8"	1,485 83	8"	1,849 91
10"	1,933 60	10"	2,407 46
12"	2,192 38	12"	2,727 77

⁽¹⁾ The rates include 48 5¢ per 100 cubic feet of purchased water adjustment charge effective October 1, 2016

⁽²⁾ In Units of 100 cubic feet

⁽³⁾ Includes fire protection service

Sources Pasadena Water and Power Department

In 2003, the CIC was added to water rates to recover the capital improvement costs of the Water System. The current effective CIC rates (approved in January 2016) are shown in the table below.

**TABLE 10
CAPITAL IMPROVEMENTS CHARGE
(per 100 Cubic Feet)**

	<u>April 1-September 30</u>	<u>October 1-March 31</u>
Area A	\$0 98506	\$0 92930
Area B	\$1 32983	\$1 25456

Source: Pasadena Water and Power Department

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

**TABLE 11
AVERAGE RESIDENTIAL BILLING INFORMATION**

	<u>Fiscal Year Ended June 30,</u>			
	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016⁽¹⁾</u>
Residential Billing Units Sold (100 Cubic Feet)	9,059,009	9,516,960	8,419,780	6,850,632
Total Billing Units Sold (Water System)	13,168,217	13,842,791	12,411,952	10,317,835
Residential as a Percent of Total Water System	68.8%	68.8%	67.8%	66.4%
Revenues From Residential Sales Total (Water System)	\$32,184,262	\$33,904,604	\$31,657,257	\$27,519,310
Residential as a Percent of Total Water System	55.0%	55.4%	55.1%	47.2%
Number of Residential Customers Total (Water System)	32,883	32,896	32,878	32,839
Residential as a Percent of Total Water System	37.934%	37.974%	37.972%	37.959%
Average Residential Monthly Billing Unit	22.96	24.11	21.34	17.38
Average Residential Bill	\$81.56	\$85.89	\$80.24	\$82.57

⁽¹⁾ Fiscal Year ended June 30, 2016 is based on unaudited 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.

To manage late/non-payments a 48-hour notice of termination is generated approximately 45 days after the actual billing date. If payment is not received the water service is interrupted. Should the bill not be paid within a week, the electric service is then also interrupted. The total bill plus all reconnection charges must be paid to resume service. After 90 days, the account is written off by the PWP Collection Department and sent to the City Finance Department for further collection efforts.

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

	Fiscal Year Ended June 30,				
	2012	2013	2014	2015	2016 ⁽¹⁾
Bad Debt Written Off	\$176	\$164	\$91	\$178	\$46
Total Operating Revenue	\$54,301	\$58,536	\$61,233	\$57,440	\$50,835
Bad Debt as a Percent of Operating Revenue	0.32%	0.28%	0.15%	0.31%	0.09%

⁽¹⁾ Fiscal Year ended June 30, 2016 is based on unaudited information.
Source: Pasadena Water and Power Department.

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, 2015 are included as APPENDIX B – "AUDITED FINANCIAL STATEMENTS OF PASADENA WATER AND POWER ENTERPRISE FUNDS FOR THE FISCAL YEAR ENDED JUNE 30, 2015". 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 2017A BONDS – The Water Fund". Labor costs for personnel working in both the Water System and the Electric System are allocated on the basis of time worked for each division.

Employees

For Fiscal Year 2015-2016, the City has budgeted approximately 124 full time employees (FTE) for the Water System. Most Water System employees are represented either by the International Brotherhood of Electrical Workers, International Union of Operating Engineers, the American Federation of State, County and Municipal Employees, the Laborers' International Union of North America or the Pasadena Management Association in all matters pertaining to wages, benefits and working conditions. The labor agreement with the International Brotherhood of Electrical Works has expired and is being negotiated. The other labor agreements will expire through 2019. The City has no history of work interruption by employees maintaining the Water System. See APPENDIX A – "THE CITY OF PASADENA – Employee Relations".

The Water System's permanent employees are all covered by the California Public Employees Retirement System ("CalPERS") with respect to pension benefits. CalPERS is an agent multiple-employer plan public employee retirement system which acts as a common investment and administrative agent for participating public employers within the State of California. The plan provides retirement and disability benefits, annual cost-of-living adjustments and death benefits to plan members and their

beneficiaries CalPERS issues a separate publicly available financial report that includes financial statements and required supplemental information of participating public entities within the State of California Copies of the CalPERS annual financial report may be obtained from the CalPERS Executive Office, Lincoln Plaza Complex, 400 Q Street, Sacramento, California 95811 or at www.calpers.ca.gov

The law relating to CalPERS requires that the employer contribution rates for all public employers be determined on an annual basis by the actuary and shall be effective on the July 1 following notice of a change in the rate Funding contribution for the City's Miscellaneous Plan ("Plan") (which include all Water System employees) is determined annually on an actuarial basis as of June 30 by CalPERS The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability The City is required to contribute the difference between the actuarially determined rate and the contribution rate of employees

Effective with Fiscal Year 2014-15 financial statements, GASB 27 has been replaced with GASB 68 - Accounting and Financial Reporting for Pensions, with new pension reporting requirement for employers The City's net pension liability for the Plan is measured as the total pension liability, less the pension plan's fiduciary net position The net pension liability of the Plan is measured as of June 30, 2014, using an annual actuarial valuation as of June 30, 2013 rolled forward to June 30, 2014 using standard update procedures The actuarial methods and assumptions used to determine the total pension liability include entry age normal cost method in accordance with the requirements of GASB 68, an inflation rate of 2.75%, salary increase by entry age and service, an investment rate of return (net of administrative expenses) of 7.50%, and a mortality rate table derived using CalPERS' membership data for all funds The discount rate used to measure the total pension liability was 7.50% Based on CalPERS stress testing, it was determined that the discount rate is adequate and the use of the municipal bond rate calculation is not necessary All other actuarial assumptions used in the June 30, 2013 valuation were based on the results of an actuarial experience study for the period from 1997 to 2011, including updates to salary increase, mortality and retirement rates

Under GASB 68, gains and losses related to changes in total pension liability and fiduciary net position are recognized in pension expense systematically over time The first amortized amounts are recognized in pension expense for the year the gain or loss occurs The remaining amounts are categorized as deferred outflows and deferred inflows of resources related to pensions and are to be recognized in future pension expense Difference between projected and actual earnings uses five year straight-line amortization while all other amounts use straight-line basis over the expected average remaining service lives ("EARSLS") of all members that are provided with benefits (active, inactive, and retired) as of the beginning of the measurement period The EARSLS for the 2013-14 measurement periods is 3.4 years for the Plan

As of the start of the measurement period (July 1, 2013), the net pension liability of the City's Miscellaneous Plan is \$285,716,924 For the measurement period ending June 30, 2014, the City incurred a pension expense of \$14,801,182 for the Plan and the net pension liability balance is \$231,069,163 which is the total pension liability of \$970,629,661 minus the plan fiduciary net position of \$739,560,498 The deferred inflows of the resources related to the Plan at June 30, 2014 is \$50,896,904

The Water System's contributions represent a pro rata share of the City's contribution, including the employees' contribution that is paid by the Water Fund, which is based on CalPERS' actuarial determination as of July 1 of the current Fiscal Year CalPERS does not provide data to participating organizations in such a manner so as to facilitate separate disclosure for the Water Fund's share of the actuarial computed pension benefit obligation, the plan's net assets available for benefit obligation and

the plan's net assets available for benefits. The Water System employees represent approximately 5.6% of the full-time City employees.

Other than the pension benefits from the applicable retirement system, the City does not provide medical or other post-retirement benefits to its employees beyond the option to continue receiving health insurance benefits at the City's monthly rates, paid by the retired employees.

The City provides a subsidy to retirees of the City who are members of CalPERS or the Pasadena Fire and Police Pension System. Benefit provisions are established and amended through negotiations between the City and the respective unions. Two different levels of subsidy toward the purchase of medical insurance from CalPERS under the Public Employees' Medical and Hospital Care Act are offered.

The City's current contribution requirements have been established at the individual retiree levels of \$125.00 or \$62.50 per month depending on bargaining unit membership and policy enacted by CalPERS pursuant to State Law. These minimum requirements are established by CalPERS and adjusted annually. The prior contribution requirements were \$122.00 or \$54.60 per month depending on the bargaining unit or the unrepresented group of which the employee was a member. The City has historically funded these post-retirement health care benefits on a "pay-as-you-go" basis. For the Fiscal Year ended June 30, 2015, the City's contributions totaled \$623,000 (representing 22.80% of the annual other post-employment benefit ("OPEB") cost (expense)). The City's annual OPEB cost (expense) is calculated based on the annual required contribution ("ARC") of the employer, an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and to amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed thirty years. The Water System is allocated its portion of the required contributions. As of June 30, 2015, the City's unfunded actuarial accrued OPEB liability for the citywide post-retirement healthcare benefits (including the portion allocable to Water System employees) was approximately \$28,619,000, of which about \$1,602,664 or 5.6 percent represent the share of Water Fund.

See "APPENDIX A – THE CITY OF PASADENA – Employee Relations" and – Post-Retirement Medical Benefits." Further information regarding the City's participation in CalPERS and OPEB may also be found in the City's Comprehensive Annual Financial Report.

Insurance

The City funds a self-insured and self-administered program for workers' compensation claims exposures and general liability claims. Liability claims, losses and expenses paid averaged about \$1,086,072 per year for the past 10 years and, when existing "reserves" are added, averaged around \$1,114,221 in liability exposure per year over the past 10 years. The City anticipates these expenses annually and includes funding for them in its operating budget. The City carries excess liability coverage, with limits of \$20 million, with a self-insured retention of \$3 million dollars. The amount of self-insured liability claim expenditures are remaining reserves with respect to claims made in each of fiscal years 2006-07 through 2015-16 are reflected in the following table.

TABLE 13
CITY OF PASADENA
LIABILITY CLAIM EXPENDITURES AND REMAINING RESERVES
Fiscal Years 2006-07 through 2015-16

Fiscal Year⁽¹⁾ Ended June 30,	Loss Paid	Expense Paid	Total Paid	Remaining Reserves for Unpaid Claims⁽¹⁾
2007	\$629,163 33	\$140,224 34	\$769,387 67	\$25,100 00
2008	532,823 08	1,351,869 19	1,884,692 27	1,624,138 00
2009	3,097,196 51	471,126 06	3,568,322 57	1,025,000 00
2010	639,875 83	24,824 15	664,699 98	2,565,000 00
2011	897,720 69	10,282 83	908,003 52	2,111,700 00
2012	2,003,021 32	366,982 82	2,370,004 14	5,295,579 50
2013	166,779 05	---	166,779 05	968,501 00
2014	338,386 96	40,795 50	379,182 46	3,922,731 91
2015	32,609 68	---	32,609 68	1,184,613 16
2016	97,036 00	---	97,036 00	281,494 00

⁽¹⁾ Reserves reflect fiscal year in which claim occurred. Payments reflect money spent on all claims during a fiscal year.
Source: City of Pasadena, Department of Finance

The City maintains commercial property insurance on all City-owned building of an insurable nature (unless lease agreements require the occupant to carry such insurance) with limits of \$250,000,000, subject to various application sub-limits and deductible. Policy coverage excludes earth movement, including earthquake, nuclear hazard and military action. The City does not currently maintain separate earthquake coverage under another insurance policy. The City maintains boiler & machinery, and equipment breakdown insurance, on specified types of equipment/property, with limits of \$100,000,000 for each policy, subject to variety of applicable sub-limits and deductibles. In addition, the City purchases property terrorism/Nuclear, Chemical, Biological and Radiological Terrorism & Sabotage coverage, along with pollution, storage tank, and cyber liability coverage, with limits of \$1,000,000 for the pollution, storage tank and cyber liability policies, subject to variety of applicable sub-limits and deductibles.

Historical Operating Results and Cash Flows

The following table presents the historical operating results and cash flows for the Water System for the last five Fiscal Years

TABLE 14
HISTORICAL OPERATING RESULTS AND CASH FLOWS
(\$ in Thousands)

	Fiscal Year Ended June 30,				
	2012	2013	2014 ⁽¹⁾	2015	2016 ⁽²⁾
Revenue					
Sales Within City Limits	\$35,511	37,692	40,114	38,029	33,966
Sales Outside City Limits	6,872	7,374	7,809	7,327	6,339
Municipal Sales & Misc Others ⁽³⁾	<u>11,918</u>	<u>13,470</u>	<u>13,310</u>	<u>12,084</u>	<u>10,530</u>
Total Operating Revenues	<u>54,301</u>	<u>58,536</u>	<u>61,233</u>	<u>57,440</u>	<u>50,835</u>
Operating Expenses					
Purchased Water	16,748	17,953	22,596	19,198	17,216
Fuel and Purchased Power	2,368	2,465	2,305	2,377	2,278
Direct Operating Expenses	10,406	10,467	10,521	9,421	8,156
Administrative and General Expenses	6,891	6,815	27,106	7,815	7,851
Pension Expense – GASB 68	-	-	<u>(16,802)</u>	-	-
Total Expenses ⁽⁴⁾	<u>36,413</u>	<u>37,700</u>	<u>45,726</u>	<u>38,811</u>	<u>35,501</u>
Earnings from Operations	17,888	20,836	15,507	18,629	15,334
Non-Operating Income ⁽⁵⁾	8,453	7,587	5,777	9,672	7,462
Cash Flow Available for Debt Service	26,341	28,425	21,284	28,301	22,796
Debt Service	\$6,730	7,173	7,115	7,100	7,086
Debt Service Coverage	<u>3.91x</u>	<u>3.96x</u>	<u>2.99x</u>	<u>3.99x</u>	<u>3.22x</u>
Amount Available after Debt Service	\$19,611	\$21,250	\$14,169	\$21,201	\$15,710
Transfers/Reimbursement to General Fund	<u>3,313</u>	<u>3,707</u>	<u>3,968</u>	<u>1,922</u>	<u>2,015</u>
Cash Available after Debt Service and Transfer	<u>\$16,298</u>	<u>\$17,543</u>	<u>\$10,201</u>	<u>\$19,279</u>	<u>\$13,695</u>

⁽¹⁾ Restated for Fiscal Year ended June 30, 2014 following the implementation of GASB Statement No. 68, "Accounting and Financial Reporting for Pensions – an amendment of GASB Statement No. 27" This statement requires the recognition of net pension liabilities and pension expense. As a result, an adjustment of \$16,801,605 for the period prior to Fiscal Year 2015 was made to the Direct Operating Expenses and the General, Administrative and Commercial for Fiscal Year ended June 30, 2014 for accounting purposes. For the purpose of calculating debt service coverage ratio for Fiscal Year ended June 30, 2014, the adjustment was excluded. See APPENDIX B for additional information regarding GASB Statement No. 68.

⁽²⁾ Fiscal Year ended June 30, 2016 is based on unaudited information.

⁽³⁾ Includes CIC revenue.

⁽⁴⁾ Excludes depreciation and interest cost.

⁽⁵⁾ Includes interest income and capital contributions.

Sources: Pasadena Water and Power Department.

Projected Coverage and Five-Year Forecast

The following table shows a summary of the projected operating results of the Water System for the five Fiscal Years listed, assuming CIC and distribution and customer charge increases, as described below. In the preparation of the projections in this section, the City has made certain assumptions with respect to conditions that may occur in the future. While the City believes these assumptions are reasonable for the purpose of the projections, they are dependent on future events, and actual conditions may differ from those assumed. **To the extent actual future factors differ from those assumed by the City or provided to the City by others, the actual results will vary from those forecast and such variations may be material.** The City does not plan to issue any updates or revisions to the forecast if or when its assumptions, expectations, or events, conditions or circumstances on which such forecast is based, occur or do not occur.

Table 15 revenue projection assumptions include (a) an annual sales growth rate of approximately 1.4%, (b) an increase in the CIC revenue of approximately million in Fiscal Year 2017, and (c) approximately million annual purchased water adjustment charge revenues for Fiscal Year 2017. Table 15 expense projections assume 2% annual escalation in expenses, % annual increase in purchased water costs, and % in purchased power costs as well as a % annual increase in non-operating income.

TABLE 15
OPERATING STATEMENT
FIVE YEAR FORECAST
(\$ in Thousands)

	Fiscal Year Ended June 30,				
	2017	2018	2019	2020	2021
Revenue					
Sales Within City Limits	\$ 34,314	\$36,177	\$37,543	\$38,736	\$39,747
Sales Outside City Limits	6,625	6,989	6,778	7,467	7,661
Municipal Sales & Misc. Others ⁽¹⁾	<u>16,041</u>	<u>15,490</u>	<u>12,306</u>	<u>16,164</u>	<u>16,981</u>
Total Revenues	<u>\$56,980</u>	<u>\$58,656</u>	<u>\$59,627</u>	<u>\$62,367</u>	<u>64,395</u>
Operating Expenses					
Purchased Water	16,963	17,776	18,468	19,498	20,496
Fuel and Purchased Power	2,258	2,293	2,381	2,419	2,394
Direct Operating Expenses	11,270	11,495	11,725	11,960	12,516
Administrative and General Expenses	<u>10,045</u>	<u>10,246</u>	<u>10,451</u>	<u>10,660</u>	<u>11,156</u>
Total Expenses ⁽²⁾	<u>\$40,536</u>	<u>\$41,810</u>	<u>\$43,025</u>	<u>\$44,537</u>	<u>\$46,562</u>
Earnings from Operations	16,444	16,846	16,602	17,830	17,833
Non-Operating Income ⁽³⁾	<u>4,308</u>	<u>5,073</u>	<u>5,079</u>	<u>4,382</u>	<u>4,319</u>
Cash Flow Available for Debt Service	<u>\$20,752</u>	<u>\$21,919</u>	<u>\$21,681</u>	<u>\$22,212</u>	<u>\$22,152</u>
Total Debt Service ⁽⁴⁾	7,129	8,888	8,864	8,102	8,404
Debt Service Coverage	<u>2.91x</u>	<u>2.47x</u>	<u>2.45x</u>	<u>2.74x</u>	<u>2.64x</u>
Amount Available after Debt Service	\$13,623	\$13,031	\$12,817	\$14,110	\$13,748
Reimbursement to General Fund	<u>1,894</u>	<u>1,932</u>	<u>1,971</u>	<u>2,010</u>	<u>2,050</u>
Cash Available after Debt Service and Transfer	\$11,729	\$11,099	\$10,846	\$12,100	\$11,698

⁽¹⁾ Includes CIC and Purchased Water Adjustment Cost Revenues

⁽²⁾ Excludes Depreciation and Interest Expense

⁽³⁾ Includes Interest Income, Capital Contributions and the anticipated receipt of the Build America Bonds cash subsidy from the United States Treasury relating to the 2010A Bonds

⁽⁴⁾ Includes debt service for the 2007 Bonds (unrefunded), 2010 Bonds (debt service for the 2010A Bonds is gross, before application of the Build America Bonds cash subsidy expected to be received), and the 2011A Bonds

CONSTITUTIONAL AND STATUTORY LIMITATIONS ON TAXES AND APPROPRIATIONS

Article XIII A of the California Constitution

If a portion of PWP's rates or charges were determined by a court to exceed the reasonable costs of providing service, any fee which PWP charges may be considered to be a "special tax" which under Article XIII A of the State Constitution must be authorized by a two-thirds vote of the affected electorate. This requirement is applicable to PWP's rates for water service and charges for capital improvements to the Water System. The reasonable cost of providing water service has been determined by the State Controller to include depreciation and allowance for the cost of capital improvements. In addition, State courts have held that fees such as connection fees (capacity charges) will not be special taxes if they approximate the reasonable cost of constructing improvements to the Water System contemplated by the local agency imposing the fee. Such court determinations have been codified in the Government Code of the State of California (Section 6000 *et seq.*)

Article XIII B of the California Constitution

Article XIII B of the State Constitution limits the annual appropriations of State and local governmental entities to the amount of appropriations of the entity for the prior Fiscal Year, as adjusted for changes in the cost of living, changes in population and changes in services rendered by the entity

Pending clarification of certain of its provisions by the courts, or by the State Legislature, the full impact of Article XIII B on the amounts and uses of moneys to be deposited in the Water Fund is not clear. However, to the extent moneys in the Water Fund are used to pay costs of maintaining and operating the Water System and debt service on the Bonds and Parity Debt, such moneys should not, under the terms of Article XIII B, as supplemented by legislation, and based upon the official ballot argument supporting the measure, be held to be subject to the appropriation limit

Article XIII C and XIII D of the California Constitution

Proposition 218, a state ballot initiative known as the "Right to Vote on Taxes Act" was approved by California voters on November 5, 1996 and, except for certain provisions which became effective on July 1, 1997, became effective on November 6, 1996. Proposition 218 added Article XIII C, entitled "Voter Approval of Local Tax Levies" ("Article XIII C"), and Article XIII D, entitled "Assessment and Property Related Fee Reform" ("Article XIII D"), to the California Constitution. Article XIII C and Article XIII D limit the imposition by a local government of "general taxes," "special taxes," "assessments" and "fees" or "charges." The City is a local government within the meaning of Article XIII C and Article XIII D.

Article XIII C, provides, among other things, that the initiative power shall not be prohibited or otherwise limited in matters of reducing or repealing any local fee or charge. This extension of the initiative power is not limited by the terms of Article XIII C to fees and charges imposed after November 6, 1996 and, absent other authority, could result in retroactive reduction in existing fees and charges. Although the terms "fees" and "charges" are not defined in Article XIII C, the California Supreme Court, in *Bighorn-Desert View Water Agency v Kari Verjil, E W Kelley* (July 2006), has stated that there is no basis for excluding from Article XIII C's authorization any of the fees subject to Article XIII D. If fees or charges charged or collected by the City for its Water System are subjected to the initiative process and the outcome of any initiative proceedings results in a reduction or repeal of such fees or charges, the ability of the City to generate Gross Aggregate Revenues sufficient to comply with its covenants under the Indenture may be adversely affected. Furthermore, if voters were to approve an initiative lowering the City's water rates or other charges, the City would need voter approval before it could change the rate or charge that had been set by initiative. The City could, however, increase a charge that was not affected by initiative or to impose an entirely new charge without voter approval.

The California Supreme Court further stated in *Bighorn* that it was not holding that the initiative power is free of all limitations and was not determining whether the initiative power is subject to the statutory provision requiring that water service charges be set at a level that will pay debt service on bonded debt and operating expenses. Such initiative power could be subject to the limitations imposed on the impairment of contracts under the contract clause of the United States Constitution. Additionally, SB 919 provides that the initiative power provided for in Proposition 218 "shall not be construed to mean that any owner or beneficial owner of a municipal security, purchased before or after (the effective date of Proposition 218) assumes the risk of, or in any way consents to, any action by initiative measure that constitutes an impairment of contractual rights" protected by the United States Constitution. However, no assurance can be given that the voters of the City will not, in the future, approve an initiative which reduces or repeals local taxes, assessments, fees or charges.

Article XIID prohibits the assessment upon any parcel of property or upon any person "as an incident of property ownership" (defined to exclude fees for the provision of electrical or gas service) by a local government of any tax, assessment, fee or charge except voter-approved ad valorem property taxes and special taxes, fees or charges as a condition of property development, and assessments and "fees or charges for property related services" levied or imposed in accordance with the provisions of Article XIID

Under Article XIID, revenues derived from a "fee" or "charge" (defined as "any levy other than an ad valorem tax, a special tax or an assessment, imposed by a local government upon a parcel or upon a person as an incident of property ownership, including user fees or charges for a property related service") may not exceed the funds required to provide the "property-related service" and may not be used for any purpose other than that for which the fee or charge was imposed. Further, the amount of a "fee" or "charge" may not exceed the proportional cost of the service attributable to the parcel, no "fee" or "charge" may be imposed for a service unless that service is actually used by, or is immediately available to, the owner of the property in question, and no "fee" or "charge" may be imposed for general governmental service where the service is "available to the public at large in substantially the same manner as it is to the property owners."

In addition, in order for a "fee" or "charge" to be imposed or increased, Article XIID provides that, among other things, the parcel upon which a fee or charge is proposed for imposition must be identified, the amount of the fee or charge proposed to be imposed on each such parcel must be calculated, written notice by mail of the proposed fee or charge must be provided to the "record owner" of each identified parcel, and a public hearing must be conducted upon the proposed fee or charge. If written protests against the proposed "fee" or "charge" are presented by a majority of owners of the identified parcels, the fee or charge may not be imposed. The California Supreme Court in *Bighorn* indicated that once a property owner or resident has paid the connection charges and has become a customer of a public water agency, all charges for water delivery incurred thereafter are charges for a property-related service, whether the charge is calculated on the basis of consumption or is imposed as a fixed monthly fee. Accordingly, the imposition or increase of any fee or charge by the City for its water service will be the subject of such a majority protest. If such a majority protest occurs, the ability of the City to generate Gross Aggregate Revenues sufficient to comply with its covenants under the Indenture may be adversely affected.

Article XIID states that, beginning July 1, 1997, all "fees" or "charges" must comply with its provisions. It is unclear how the provisions of Article XIID will be applied to fees or charges established prior to such date. It is also unclear how the provisions of Article XIID will be applied to fees or charges established after such date but prior to the *Bighorn* decision.

As a result of the *Bighorn* decision, there can be no assurance that Proposition 218 will not limit the ability of the City to impose, levy, charge and collect increased fees and charges for water services.

Prior to 2008, the City did not comply with the applicable notice and protest procedures of Article XIID for its water rate increases. There is no pending challenge to the City's water fees, and the City cannot predict the outcome of any such challenge, if a challenge were brought. Since 2008, the City has followed the notice, hearing and protest procedures in Article XIID in connection with its water rate increases and plans to follow such notice, hearing and protest procedure in connection with future rate increases.

The City is unable to predict how Article XIIC and Article XIID will be interpreted by the courts in the future. Bond Counsel has advised that there can be no assurance that Article XIIC and Article XIID will not limit the ability of the City to charge and collect fees and charges for its water

service sufficient to enable the City to comply with its covenants under the Indenture or that the ability of the City to generate Gross Aggregate Revenues sufficient to pay principal and interest on the 2017A Bonds will not be adversely affected. See "SECURITY AND SOURCES OF PAYMENT FOR THE 2017A BONDS – Rate Covenant." Further, in such event, there can be no assurance that remedies will be available to fully protect the interests of the holders of the 2017A Bonds. See "SECURITY AND SOURCES OF PAYMENT FOR THE 2017A BONDS – Limitations on Remedies."

Proposition 26

Proposition 26 was approved by the electorate at the November 2, 2010 election and amended California Constitution Articles XIII A and XIII C. The proposition imposes a two-thirds voter approval requirement for the imposition of fees and charges by the State. It also imposes a majority voter approval requirement on local governments with respect to fees and charges for general purposes, and a two-thirds voter approval requirement with respect to fees and charges for special purposes. Proposition 26, according to its supporters, is intended to prevent the circumvention of tax limitations imposed by the voters pursuant to Proposition 13, approved in 1978, and other measures through the use of non-tax fees and charges. Proposition 26 expressly excludes from its scope a charge imposed for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable cost to the State or local government of providing the service or product to the payor. Proposition 26 may, however, be interpreted to limit fees and charges for electric utility services charged by governmental entities such as the City to preclude future transfers of utility generated funds to a local government's general fund, if applicable, and/or to require stricter standards for the allocation of costs among customer classes. The City is unable to predict at this time how Proposition 26 will be interpreted by the courts or what its ultimate impact will be.

Future Initiatives

Articles XIII A, XIII B, XIII C and XIII D were adopted as measures that qualified for the ballot pursuant to California's initiative process. From time to time other initiatives have been and could be proposed and adopted affecting PWP's revenues or ability to increase revenues. Neither the nature and impact of these measures nor the likelihood of qualification for ballot or passage can be anticipated by the City.

RATINGS

Fitch Ratings, Inc. ("Fitch") and S&P Global Ratings have assigned their municipal bond ratings of "____" and "____," respectively, to the 2017A Bonds. Such ratings reflect only the views of such organizations and any desired explanation of the significance of such ratings may be obtained from the rating agency furnishing the same, at the following addresses: Fitch Ratings, Inc., One State Street Plaza, New York, New York 10004, and S&P Global Ratings, 55 Water Street, New York, New York 10041. Generally, a rating agency bases its rating on the information and materials furnished to it and on investigations, studies and assumptions of its own. There is no assurance that any of such ratings will continue for any given period of time or that such ratings will not be revised downward or withdrawn entirely by the applicable rating agency, if in the judgment of such rating agency circumstances so warrant. Any such downward revision or withdrawal of such ratings may have an adverse effect on the 2017A Bonds.

TAX MATTERS

The Internal Revenue Code of 1986 (the "Code") imposes certain requirements that must be met subsequent to the issuance and delivery of the 2017A Bonds for interest thereon to be and remain

excluded pursuant to section 103(a) of the Code from the gross income of the owners thereof for federal income tax purposes. Noncompliance with such requirements could cause the interest on the 2017A Bonds to be included in the gross income of the owners thereof for federal income tax purposes retroactive to the date of issuance of the 2017A Bonds. The City has covenanted in the Fiscal Agent Agreement to maintain the exclusion of the interest on the 2017A Bonds from the gross income of the owners thereof for federal income tax purposes.

In the opinion of Norton Rose Fulbright US LLP, Bond Counsel, under existing law interest on the 2017A Bonds is exempt from personal income taxes of the State of California and, assuming compliance with the aforementioned covenant, interest on the 2017A Bonds is excluded pursuant to section 103(a) of the Code from the gross income of the owners thereof for federal income tax purposes. Bond Counsel is of the further opinion that the 2017A Bonds are not "specified private activity bonds" within the meaning of section 57(a)(5) of the Code and, therefore, the interest on the 2017A Bonds is not treated as an item of tax preference for purposes of computing the alternative minimum tax imposed by section 55 of the Code, however, the receipt or accrual of interest on the 2017A Bonds owned by a corporation may affect the computation of its alternative minimum taxable income. A corporation's alternative minimum taxable income is the basis on which the alternative minimum tax imposed by section 55 of the Code will be computed. In rendering the foregoing opinions, Bond Counsel will rely upon representations and certifications of the City made in a Tax Certificate dated the date of delivery of the 2017A Bonds pertaining to the use, expenditure, and investment of the proceeds of the 2017A Bonds.

The initial public offering price of certain 2017A Bonds (the "Discount Bonds") may be less than the amount payable on such 2017A Bonds at maturity. An amount equal to the difference between the initial public offering price of a Discount Bond (assuming that a substantial amount of the Discount Bonds of that maturity are sold to the public at such price) and the amount payable at maturity constitutes original issue discount to the initial purchaser of such Discount Bond. A portion of such original issue discount allocable to the holding period of such Discount Bond by the initial purchaser will, upon the disposition of such Discount Bond (including by reason of its payment at maturity), be treated as interest excludable from gross income, rather than as taxable gain, for federal income tax purposes, on the same terms and conditions as those for other interest on the 2017A Bonds described above. Such interest is considered to be accrued actuarially in accordance with the constant interest method over the life of a Discount Bond, taking into account the semiannual compounding of accrued interest, at the yield to maturity on such Discount Bond and generally will be allocated to an initial purchaser in a different amount from the amount of the payment denominated as interest actually received by the initial purchaser during the tax year.

However, such interest may be required to be taken into account in determining the alternative minimum taxable income of a corporation, for purposes of calculating a corporation's alternative minimum tax imposed by Section 55 of the Code, and the amount of the branch profits tax applicable to certain foreign corporations doing business in the United States, even though there will not be a corresponding cash payment. In addition, the accrual of such interest may result in certain other collateral federal income tax consequences to, among others, financial institutions, life insurance companies, property and casualty insurance companies, S corporations with subchapter C earnings and profits, individual recipients of Social Security or Railroad Retirement benefits, individuals otherwise qualifying for the earned income tax credit, owners of an interest in a financial asset securitization investment trust, and taxpayers who may be deemed to have incurred or continued indebtedness to purchase or carry, or who have paid or incurred certain expenses allocable to, tax-exempt obligations. Moreover, in the event of the redemption, sale or other taxable disposition of a Discount Bond by the initial owner prior to maturity, the amount realized by such owner in excess of the basis of such Discount Bond in the hands of such owner (adjusted upward by the portion of the original issue discount allocable to the period for which such Discount Bond was held) is includable in gross income. Owners of Discount Bonds should

consult with their own tax advisors with respect to the determination of accrued original issue discount on Discount Bonds for federal income tax purposes and with respect to the state and local tax consequences of owning and disposing of Discount Bonds

The purchase price of certain 2017A Bonds (the "Premium Bonds") paid by an owner may be greater than the amount payable on such 2017A Bonds at maturity. An amount equal to the excess of a purchaser's tax basis in a Premium Bond over the amount payable at maturity constitutes premium to such purchaser. The basis for federal income tax purposes of a Premium Bond in the hands of such purchaser must be reduced each year by the amortizable bond premium, although no federal income tax deduction is allowed as a result of such reduction in basis for amortizable bond premium. Such reduction in basis will increase the amount of any gain (or decrease the amount of any loss) to be recognized for federal income tax purposes upon a sale or other taxable disposition of a Premium Bond. The amount of premium that is amortizable each year by a purchaser is determined by using such purchaser's yield to maturity (or, in some cases with respect to a callable bond, the yield based on a call date that results in the lowest yield on the bond). Purchasers of the Premium Bonds should consult with their own tax advisors with respect to the determination of amortizable bond premium on Premium Bonds for federal income tax purposes and with respect to the state and local tax consequences of owning and disposing of Premium Bonds

Bond Counsel has not undertaken to advise in the future whether any events after the date of issuance of the 2017A Bonds may affect the tax status of interest on the 2017A Bonds or the tax consequences of the ownership of the 2017A Bonds. No assurance can be given that future legislation, or amendments to the Code, if enacted into law, will not contain provisions that could directly or indirectly reduce the benefit of the exemption of interest on the 2017A Bonds from personal income taxation by the State of California or of the exclusion of the interest on the 2017A Bonds from the gross income of the owners thereof for federal income tax purposes. Furthermore, Bond Counsel expresses no opinion as to any federal, state or local tax law consequences with respect to the 2017A Bonds, or the interest thereon, if any action is taken with respect to the 2017A Bonds or the proceeds thereof upon the advice or approval of other bond counsel.

Although Bond Counsel is of the opinion that interest on the 2017A Bonds is exempt from California personal income tax and excluded from the gross income of the owners thereof for federal income tax purposes, an owner's federal, state or local tax liability may be otherwise affected by the ownership or disposition of the 2017A Bonds. The nature and extent of these other tax consequences will depend upon the owner's other items of income or deduction. Without limiting the generality of the foregoing, prospective purchasers of the 2017A Bonds should be aware that (i) section 265 of the Code denies a deduction for interest on indebtedness incurred or continued to purchase or carry the 2017A Bonds and the Code contains additional limitations on interest deductions applicable to financial institutions that own tax-exempt obligations (such as the 2017A Bonds), (ii) with respect to insurance companies subject to the tax imposed by section 831 of the Code, section 832(b)(5)(B)(i) reduces the deduction for loss reserves by 15% of the sum of certain items, including interest on the 2017A Bonds, (iii) interest on the 2017A Bonds earned by certain foreign corporations doing business in the United States could be subject to a branch profits tax imposed by section 884 of the Code, (iv) passive investment income, including interest on the 2017A Bonds, may be subject to federal income taxation under section 1375 of the Code for Subchapter S corporations that have Subchapter C earnings and profits at the close of the taxable year if greater than 25% of the gross receipts of such Subchapter S corporation is passive investment income, (v) section 86 of the Code requires recipients of certain Social Security and certain Railroad Retirement benefits to take into account, in determining the taxability of such benefits, receipts or accruals of interest on the 2017A Bonds and (vi) under section 32(i) of the Code, receipt of investment income, including interest on the 2017A Bonds, may disqualify the recipient thereof from

obtaining the earned income credit Bond Counsel has expressed no opinion regarding any such other tax consequences

Bond Counsel's opinion is not a guarantee of a result, but represents its legal judgment based upon its review of existing statutes, regulations, published rulings and court decisions and the representations and covenants of the City described above No ruling has been sought from the Internal Revenue Service (the "Service") with respect to the matters addressed in the opinion of Bond Counsel, and Bond Counsel's opinion is not binding on the Service The Service has an ongoing program of auditing the tax-exempt status of the interest on municipal obligations If an audit of the 2017A Bonds is commenced, under current procedures the Service is likely to treat the City as the "taxpayer," and the owners would have no right to participate in the audit process In responding to or defending an audit of the tax-exempt status of the interest on the 2017A Bonds, the City may have different or conflicting interests from the owners Public awareness of any future audit of the 2017A Bonds could adversely affect the value and liquidity of the 2017A Bonds during the pendency of the audit, regardless of its ultimate outcome

Existing law may change so as to reduce or eliminate the benefit to holders of the 2017A Bonds of the exclusion of interest thereon from gross income for federal income tax purposes Proposed legislative or administrative action, whether or not taken, could also affect the value and marketability of the 2017A Bonds Prospective purchasers of the 2017A Bonds should consult with their own tax advisors with respect to any proposed changes in tax law

LITIGATION

The City has been sued in a putative class action lawsuit that challenges the 25 percent extra-territorial water surcharge See "THE WATER SYSTEM – Rate Structure" for additional information regarding the surcharge Trial is expected to begin in February 2017 [TO BE UPDATE] The plaintiffs claim the surcharge violates Proposition 218 and should be ceased The City believes the surcharge complies with existing law No assurance, however, can be made as to the ultimate outcome The City does not believe that a verdict in favor of the plaintiffs would have a material adverse impact on its ability to pay debt service on the 2017A Bonds

Other than the lawsuit described above, there is no litigation or action of any nature now pending against the City or, to the knowledge of its respective officers, threatened, seeking to restrain or enjoin the issuance, sale, execution or delivery of the 2017A Bonds or in any way contesting or affecting the validity of the 2017A Bonds or any proceedings of the City taken with respect to the issuance or sale thereof, or the pledge or application of any moneys or security provided for the payment of the 2017A Bonds or the use of proceeds thereof There is no litigation pending, or to the knowledge of the City, threatened, questioning the existence of the City or the title of the officers of the City to their respective offices There is no litigation pending, or to the knowledge of the City, threatened, which materially questions or affects the financial condition of the Water System

AUDITED FINANCIAL STATEMENTS

The audited financial statements of the City's Water and Power Enterprise Funds, as of June 30, 2015 and for the year then ended, are included in Appendix B to this Official Statement A complete copy of the City's Comprehensive Annual Financial Report may be obtained from the City There has been no material adverse change in the finances of the Water System since June 30, 2015 The 2017A Bonds are revenue obligations of the City payable only from the Pledged Revenues of the Water System in the Water Fund and certain other funds as provided in the Indenture The financial statements of the City's Water and Power Enterprise Funds for the Fiscal Year ended June 30, 2015 have been

audited by Lance, Soll & Lunghard, LLP, independent accountants (the “Auditor”) as stated in their report appearing in Appendix B. The Auditor has not updated its report or taken any action intended or likely to elicit information concerning the accuracy, completeness or fairness of the statements made in this Official Statement, and no opinion is expressed by the Auditor with respect to any event or transaction subsequent to their report dated February 24, 2016. The City has not requested, nor has the Auditor given, the Auditor’s consent to the inclusion in Appendix B of its report on such financial statements.

[The financial statements of the City’s Water and Power Enterprise Funds, as of June 30, 2016 and for the year then ended, are being audited by the Auditor, which audit is expected to be completed by [February 28], 2017. The City expects to provide the audited financial statements to MSRB’s EMMA System (defined below) when available. The City Council is expected to take action to accept such audited financial statements in March of 2017.]

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.

MUNICIPAL ADVISOR

The City has retained Public Resources Advisory Group, Los Angeles, California, as financial advisor (the “Municipal Advisor”) in connection with the issuance of the 2017A Bonds. The Financial Advisor has not been engaged, nor has it undertaken, to audit, authenticate or otherwise verify the information set forth in this Official Statement, or any other related information available to the City, with respect to accuracy and completeness of disclosure of such information. The Municipal Advisor has reviewed this Official Statement, but makes no guaranty, warranty or other representation respecting accuracy and completeness of the information contained in this Official Statement.

PURCHASE AND REOFFERING

_____ (the “Initial Purchaser”) purchased the 2017A Bonds from the City at a competitive sale at an aggregate purchase price of \$ _____ (representing the aggregate principal

amount of the 2017A Bonds, plus original issue premium of \$_____, and less an Initial Purchaser's discount of \$_____). The public offering prices may be changed from time to time by the Initial Purchaser. The Initial Purchaser may offer and sell 2017A Bonds to certain dealers and others at prices lower than the offering prices shown on the inside cover page hereof.

CERTAIN LEGAL MATTERS

The issuance of the 2017A Bonds is subject to the approving opinion of Norton Rose Fulbright US LLP, Los Angeles, California, Bond Counsel. A complete copy of the proposed form of Bond Counsel opinion is contained in Appendix F. Bond Counsel will receive compensation from the City contingent upon the sale and delivery of the 2017A Bonds. Certain legal matters will be passed upon for the City by Michele Beal Bagnaris, City Attorney of the City, and by Norton Rose Fulbright US LLP, Los Angeles, California, Disclosure Counsel.

CONTINUING DISCLOSURE

Pursuant to a Continuing Disclosure Agreement to be entered into with Digital Assurance Certification, LLC ("DAC") simultaneously with the issuance of the 2017A Bonds (the "Continuing Disclosure Agreement"), under which the City has designated DAC as Disclosure Dissemination Agent (the "Disclosure Dissemination Agent"), the City has covenanted for the benefit of the holders and beneficial owners of the 2017A Bonds to provide certain financial information and operating data relating to the City and the Water System by not later than 210 days following the end of the City's Fiscal Year (which Fiscal Year presently ends on June 30) (the "Annual Report"), commencing with the report for Fiscal Year 2016-17, and to provide notices of the occurrence of certain enumerated events. The Annual Report and the notices of specified events will be filed by the City with the Municipal Securities Rulemaking Board ("MSRB") through the MSRB's Electronic Municipal Market Access (EMMA) System. The specific nature of the information to be contained in the Annual Report and the notice of specified events is set forth in APPENDIX E – "FORM OF CONTINUING DISCLOSURE AGREEMENT" herein. These covenants have been made in order to assist the Initial Purchaser in complying with S E C Rule 15c2-12(b)(5) (the "Rule").

Due to the implementation of a new enterprise resource planning system, the City was 59 days late in filing its unaudited financial statements of the Light and Power Fund and did not file its unaudited Comprehensive Annual Financial Report but rather filed its audited Comprehensive Annual Financial Report when it became available on February 29, 2016.

The City will reserve the right to amend the Continuing Disclosure Agreement, and to obtain the waiver of non-compliance with any provision of the Continuing Disclosure Agreement, if such amendment or waiver is supported by a written opinion of counsel expert in federal securities laws selected by the City to the effect that such amendment or waiver would not materially impair the interest of the holders of the 2017A Bond and would not, in and of itself, cause the Continuing Disclosure Agreement to violate the Rule if such amendment or waiver had been effective at the time of the primary offering of the 2017A Bonds, after taking into account any applicable amendments to or official interpretations of the Rule.

The Disclosure Dissemination Agent has only the duties specified in the Continuing Disclosure Agreement. The Disclosure Dissemination Agent's obligation to deliver the information at the times and with the contents described in the Continuing Disclosure Agreement is limited to the extent the City has provided that information to the Disclosure Dissemination Agent as required by the Continuing Disclosure Agreement. The Disclosure Dissemination Agent has no duty with respect to the content of any disclosures or notice made pursuant to the terms of the Continuing Disclosure Agreement or duty or

obligation to review or verify any information in the Annual Report, Audited Financial Statements, notice of Notice Event or Voluntary Report (all as defined in the Continuing Disclosure Agreement), or any other information, disclosure or notices provided to it by the City, and the Disclosure Dissemination Agent shall not be deemed to be acting in any fiduciary capacity for the City, the holders of the 2017A Bonds or any other party. The Disclosure Dissemination Agent has no responsibility for any failure to report to the Disclosure Dissemination Agent a Notice Event or a duty to determine the materiality thereof, as to determine or liability for failing to determine whether the City has complied with the Continuing Disclosure Agreement, and the Disclosure Dissemination Agent may conclusively rely upon certification of the City at all times.

EXECUTION AND DELIVERY

The execution and delivery of this Official Statement have been duly authorized by the City

CITY OF PASADENA, CALIFORNIA

By _____
Director of Finance