The Water and Power Employees' Retirement Plan of the City of Los Angeles

Governmental Accounting Standards (GAS) 67 Actuarial Valuation as of June 30, 2017

This report has been prepared at the request of the Board of Administration to assist in administering the Plan. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Administration and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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September 15, 2017

Board of Administration
The Water and Power Employees' Retirement Plan of the City of Los Angeles
111 North Hope Street, Room 357
Los Angeles, CA 90012

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards (GAS) 67 Actuarial Valuation as of June 30, 2017. It contains various information that will need to be disclosed in order to comply with GAS 67.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Retirement Plan. The census and financial information on which our calculations were based was prepared by the Retirement Office. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of John Monroe, ASA, MAAA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for the Plan.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:

Paul Angelo, FSA, MAAA, FCA, EA	*John Monroe, ASA, MAAA, EA*
Senior Vice President and Actuary	*Vice President and Actuary*

TJH/bbf

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Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standards (GAS) 67 as of June 30, 2017. This valuation is based on:

- The benefit provisions of the Retirement Plan, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of March 31, 2017, provided by the Retirement Office (for the June 30, 2017 measurement);
- The assets of the Plan as of June 30, 2017, provided by the Retirement Office;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

General Observations on GAS 67 Actuarial Valuation

The following points should be considered when reviewing this GASB 67 report:

- The Governmental Accounting Standards Board (GASB) rules only define pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans can still develop and adopt funding policies under current practices.
- When measuring pension liability GASB uses the same actuarial cost method (Entry Age method) and the same type of discount rate (expected return on assets) as WRERP uses for funding. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on the same basis as WPERP's Actuarial Accrued Liability (AAL) measure for funding. We note that the same is generally true for the Normal Cost component of the annual plan cost for funding and financial reporting.
- The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) calculated on a market value basis. The NPL reflects all investment gains and losses as of the measurement date.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The NPLs measured as of June 30, 2017 and 2016 have been determined from the actuarial valuations as of July 1, 2017 and July 1, 2016, respectively.
- The NPL decreased from $2.19 billion as of June 30, 2016 to $1.34 billion as of June 30, 2017 primarily due to the 12.73% return on the market value of assets during 2016/17 (that was more than the assumed return of 7.25%). Changes in these values during the last two fiscal years ending June 30, 2017 and June 30, 2016 can be found in Exhibit 3.
- The discount rate used to determine the TPL and NPL as of June 30, 2017 and 2016 was 7.25%, following the same assumptions used by the Plan in the pension funding valuations as of July 1, 2017 and July 1, 2016. Details on the derivation of the discount rate as of June 30, 2017 can be found in Exhibit 5 of Section 2. Various other information that is required to be disclosed can be found throughout Exhibits 1 through 4 in Section 2.

Summary of Key Valuation Results

	2017	2016
Disclosure elements for fiscal year ending June 30:		
Service Cost[1]	$217,276,778	$209,832,859
Total Pension Liability	12,657,101,266	12,289,229,001
Plan's Fiduciary Net Position[2]	11,313,899,335	10,097,842,728
Net Pension Liability	1,343,201,931	2,191,386,273
Schedule of contributions for fiscal year ending June 30:		
Actuarially determined contributions[3]	$403,780,319	$368,599,924
Actual contributions	391,717,359	362,359,894
Contribution deficiency (excess)	12,062,960	6,240,030
Demographic data for plan year ending June 30:		
Number of retired members and beneficiaries	9,272	9,265
Number of vested terminated members[4]	1,648	1,612
Number of active members	9,806	9,348
Key assumptions as of June 30:		
Investment rate of return	7.25%	7.25%
Inflation rate	3.00%	3.00%
Projected salary increases[5]	4.50% to 10.00%	4.50% to 10.00%

(1) *The service cost is always based on the previous year's assumptions, meaning both the 2017 and 2016 values are based on the assumptions shown as of June 30, 2016.*

(2) *Based on preliminary unaudited financial statements as of June 30, 2017. The June 30, 2016 value has been changed to match the final audited financial statements as of June 30, 2016.*

(3) *Based on actual covered payroll reported by the Retirement Office. For the year ended June 30, 2017, reflects the effect of the phase-in over two years of the contribution rate impact of new actuarial assumptions adopted by the Board effective with the July 1, 2016 valuation.*

(4) *Includes terminated members due a refund of member contributions and members receiving PTD benefits.*

(5) *Includes inflation at 3.00% plus real across-the-board salary increases of 0.50% plus merit and promotional increases as of June 30, 2017 and 2016 respectively.*

Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare an actuarial valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the Retirement Office. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the Retirement Office.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of the Board to assist the Plan in preparing their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.

- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If WPERP is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The WPERP should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of WPERP, it is not a fiduciary in its capacity as actuaries and consultants with respect to WPERP.

EXHIBIT 1

General Information – "Financial Statements", Note Disclosures and Required Supplementary Information for a Single-Employer Pension Plan

Plan Description

Plan administration. The Water and Power Employees' Retirement Plan of the City of Los Angeles (WPERP) was established by the Los Angeles Department of Water and Power in 1938. WPERP is a single employer public employee retirement system whose main function is to provide retirement benefits to employees of the Los Angeles Department of Water and Power.

Under the provisions of the City Charter, the Board of Administration (the "Board") has the responsibility and authority to administer the Plan and to invest its assets. The Board members serve as trustees and must act in the exclusive interest of the Plan's members and beneficiaries. The Board has seven members: one member of the Board of Water and Power Commissioners, the General Manager, the Chief Accounting Employee, three employee members who are elected for three-year terms by active members of the Plan, and one retiree who is appointed by the Board of Water and Power Commissioners for a three-year term.

Plan membership. At June 30, 2017, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	9,272
Vested terminated members entitled to, but not yet receiving benefits[(1)]	1,648
Active members	9,806
Total	20,726

[(1)] *Includes terminated members due a refund of member contributions and members receiving PTD benefits.*

Benefits provided. WPERP provides service retirement, disability, death and survivor benefits to eligible employees. Most employees of the LADWP become members of WPERP effective on the first day of biweekly payroll following employment. Members employed prior to January 1, 2014 are designated as Tier 1 and those hired on or after January 1, 2014 are designated as Tier 2 (unless a specific exemption applies to the employee providing a right to Tier 1 status).

Tier 1 members are eligible to retire once they attain the age of 60 with 5 or more years of service or at age 55 with 10 or more years of service credit acquired in the last 12 years prior to retirement. A Tier 1 member with 30 years of service is eligible to retire regardless of age. Tier 2 members are eligible to retire once they attain the age of 60 with 10 or more years of service or at any age with 30 years of service. For both tiers, combined years of service between WPERP and LACERS is used to determine retirement eligibility and at least 5 years must be actual employment at DWP or City. For both tiers, members receiving Permanent Total Disability benefits may retire regardless of age. For Tier 1, to be eligible for a Formula Pension, the employee must have worked or been paid disability four of the last five years immediately preceding eligibility to retire, or while eligible to retire.

The Formula Pension benefit the member will receive is based upon age at retirement, monthly average salary base and years of retirement service credit.

The Tier 1 Formula Pension is equal to 2.1% times years of service credit times monthly average salary base. In addition, members retiring after attaining at least age 55 with 30 years of service credit, receive an increase in the benefit factor from 2.1% to 2.3%. A reduced early retirement benefit is paid for those members attaining age 55 with 10 years of service or any age (under 55) with 30 years of service. The reduction is 1.5% for each year of retirement age between 60 and 55 and 3.0% for each year of retirement before age 55.

Under Tier 2, there are various benefit factors that apply as shown below:

- 2.0% at age 55 with 30 years of Qualifying Service
- 1.5% at age 60 with 10 years of Qualifying Service
- 2.0% at age 63 with 10 years of Qualifying Service
- 2.1% at age 63 with 30 years of Qualifying Service

Reduced early retirement benefits are still available at any age (under 55) with 30 years of service and the reduction factors are the same as Tier 1. Note that these reduction factors continue to include the reduction from age 60 to 55 and from 55 to age at retirement.

For Tier 1 members, the maximum monthly retirement allowance is 100% of monthly average salary base. For Tier 2 members, the maximum monthly retirement allowance is 80% of monthly average salary base.

Under Tier 1, pension benefits are calculated based on the highest average salary earned during a 12-month period. Under Tier 2, pension benefits are calculated based on the average salary earned during a 36-month period.

For both tiers, the member may elect the Full Allowance, or choose an optional retirement allowance. The Full Allowance provides the highest monthly benefit and up to a 50% continuance to an eligible surviving spouse or domestic partner. There are five optional retirement allowances the member may choose. Each of the optional retirement allowances requires a reduction in the Full Allowance in order to allow the member the ability to provide various benefits to a surviving spouse, domestic partner, or named beneficiary.

WPERP provides annual cost-of-living adjustments (COLAs) to retirees that are not considered vested retirement. The cost-of-living adjustments are made each July 1 based on the percentage change in the average of the Consumer Price Index for the Los Angeles-Riverside-Orange County Area--All Items For All Urban Consumers. It is capped at 3.0% for Tier 1 and 2.0% for Tier 2. Tier 2 members may purchase additional 1% COLA protection at full actuarial cost.

The LADWP contributes to the retirement plan based upon actuarially determined contribution rates adopted by the Board of Administration. Employer contribution rates are adopted annually based upon recommendations received from WPERP's actuary after the completion of the annual actuarial valuation. The average employer contribution rate as of June 30, 2017 (based on the July 1, 2016 valuation) was 45.25% of compensation (after reflecting the phase-in).

All members are required to make contributions to WPERP regardless of the retirement plan or tier in which they are included. The average member contribution rate as of June 30, 2017 (based on the July 1, 2016 valuation) was 6.83% of compensation. Most Tier 1 members contribute at 6% of compensation and all Tier 2 members contribute at 10% of compensation.

EXHIBIT 2

Net Pension Liability

The components of the Net Pension Liability are as follows:

	June 30, 2017	June 30, 2016
Total Pension Liability	$12,657,101,266	$12,289,229,001
Plan's Fiduciary Net Position	(11,313,899,335)	(10,097,842,728)
Net Pension Liability	$1,343,201,932	$2,191,386,273
Plan's Fiduciary Net Position as a Percentage of the Total Pension Liability	89.39%	82.17%

The NPL was measured as of June 30, 2017 and 2016. The Plan's Fiduciary Net Position (plan assets) and Total Pension Liability (TPL) were valued as of the measurement date and are from actuarial valuations as of July 1, 2017 and 2016, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL are the same as those used in the WPERP actuarial valuations as of July 1, 2017 and 2016, respectively.

Actuarial assumptions. The TPL as of June 30, 2017 and 2016 was determined by an actuarial valuation as of July 1, 2017 and 2016, respectively. The actuarial assumptions used in the June 30, 2017 and 2016 measurements were based on the results of an experience study for the period from July 1, 2012 through June 30, 2015. They are the same as the assumptions used in the July 1, 2017 funding actuarial valuation for the WPERP. The assumptions used in the funding valuation are outlined on page 9 of this report. In particular, the following assumptions were applied to all periods included in the June 30, 2017 and 2016 measurements:

Inflation	3.00%
Salary increases	4.50% to 10.00%, varying by service, including inflation
Investment rate of return	7.25%, net of pension plan investment expense, including inflation
Other Assumptions	Same as those used in the July 1, 2017 funding valuation

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic Equity	29%	5.76%
International Equity	19%	7.25%
Custom Fixed Income	25%	1.74%
Real Estate	8%	4.37%
Real Return	5%	2.39%
Private Equity	8%	7.75%
Hedge Funds	5%	3.50%
Cash and Cash Equivalents	1%	-0.46%
Total	100%	

Discount rate: The discount rate used to measure the total pension liability was 7.25% as of June 30, 2017 and June 30, 2016, respectively. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rates and that employer contributions will be made at rates equal to the required contribution rates. For this purpose, only employee and employer contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL as of both June 30, 2017 and June 30, 2016.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the NPL of the WPERP as of June 30, 2017, calculated using the discount rate of 7.25%, as well as what the WPERP NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate:

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Net Pension Liability as of June 30, 2017	$3,062,644,973	$1,343,201,931	$(77,426,907)

EXHIBIT 3

Schedule of Changes in Net Pension Liability – Last Two Fiscal Years

	2017	2016
Total Pension Liability		
Service Cost	$217,276,778	$209,832,859
Interest	887,133,571	837,977,695
Change of benefit terms	0	0
Differences between expected and actual experience	(196,176,749)	(189,469795)
Changes of assumptions	0	722,927,661
Benefit payments, including refunds of member contributions	(540,361,335)	(510,484,986)
Net change in Total Pension Liability	$367,872,265	$1,070,783,434
Total Pension Liability – beginning	$12,289,229,001	$11,218,445,567
Total Pension Liability – ending (a)	$12,657,101,266	$12,289,229,001
Plan's Fiduciary Net Position		
Contributions – employer (including those for administrative expenses)	$ 397,747,778	$368,259,056
Contributions – employee	83,239,105	75,068,523
Net investment income	1,280,806,288	95,807,981
Benefit payments, including refunds of member contributions	(540,361,335)	(510,484,986)
Administrative expense	(5,375,229)	(5,108,115)
Other	0	0
Net change in Plan's Fiduciary Net Position	$1,216,056,607	$23,542,459
Plan's Fiduciary Net Position – beginning	$10,097,842,728	$10,074,300,269
Plan's Fiduciary Net Position – ending (b)	$11,313,899,335	$10,097,842,728
Net Pension Liability – ending (a) – (b)	$1,343,201,931	$2,191,386,273
Plan's Fiduciary Net Position as a percentage of the total pension liability	89.39%	82.17%
Covered employee payroll	$892,332,196	$861,818,854
Plan Net Pension Liability as percentage of covered employee payroll	150.53%	254.27%

Notes to Schedule:

Benefit changes: There have been no changes in plan provisions that have a material impact on the Total Pension Liability and Service Cost.

EXHIBIT 4

Schedule of Employer Contributions – Last Ten Fiscal Years

Year Ended June 30	Actuarially Determined Contributions(1)(2)(3)	Contributions in Relation to the Actuarially Determined Contributions(2)(3)	Contribution Deficiency (Excess)	Covered-Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
2008	$134,651,427	$141,862,126	-$7,210,699	$623,674,973	22.75%
2009	141,291,588	145,941,275	-4,649,687	696,704,083	20.95%
2010	200,578,728	201,034,807	-456,079	767,912,436	26.18%
2011	304,431,910	286,699,384	17,732,526	791,760,493	36.21%
2012	336,874,865	321,688,919	15,185,946	805,607,436	39.93%
2013	376,667,610	368,426,348	8,241,262	817,421,028	45.07%
2014	387,823,989	384,265,892	3,558,097	819,923,866	46.87%
2015	387,464,759	376,902,022	10,562,737	839,213,254	44.91%
2016	368,599,924	362,359,894	6,240,030	861,818,854	42.05%
2017	403,780,319	391,717,359	12,062,960	892,332,196	43.90%

(1) *All "Actuarially Determined Contributions" through June 30, 2014 were determined as the "Annual Required Contribution" under GAS 25 and 27.*

(2) *Based on actual covered payroll reported by the Retirement Office. For the year ended June 30, 2015, reflects the effect of the phase-in over two years of the contribution rate impact of new actuarial assumptions adopted by the Board effective with the July 1, 2014 valuation. For the year ended June 30, 2017, reflects the effect of the phase-in over two years of the contribution rate impact of new actuarial assumptions adopted by the Board effective with the July 1, 2016 valuation.*

(3) *Excludes employer contributions towards administrative expenses.*

See accompanying notes to this schedule on next page.

Notes to Exhibit 4

Methods and assumptions used to establish "actuarially determined contribution" rates:

Valuation date	Actuarially determined contribution rates are calculated as of June 30, one year prior to the end of the fiscal year in which contributions are reported
Actuarial cost method	Entry Age Actuarial Cost Method
Amortization method	Level dollar amortization
Remaining amortization period	The July 1, 2004 Unfunded Actuarial Accrued Liability is amortized over a 15-year period commencing July 1, 2004. Any subsequent changes in Unfunded Actuarial Accrued Liability are amortized over separate 15-year periods effective with that valuation.
Asset valuation method	The market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market returns and the expected returns on a market value basis, and is recognized over a five-year period. As directed by the Retirement Office, the actuarial valuation of assets may be reduced by an amount classified as a non-valuation reserve.

	July 1, 2017 Valuation Date	July 1, 2016 Valuation Date
Actuarial assumptions:		
Investment rate of return	7.25%, net of investment expenses	7.25%, net of investment expenses
Inflation rate	3.00%	3.00%
Real across-the-board salary increase	0.50%	0.50%
Projected salary increases*	4.50% to 10.00%	4.50% to 10.00%
Cost of living adjustments	3.00% (actual increases are contingent upon CPI increases with a 3.00% maximum for Tier 1, 2.00% maximum for Tier 2)	3.00% (actual increases are contingent upon CPI increases with a 3.00% maximum for Tier 1, 2.00% maximum for Tier 2)
Mortality	Healthy Post-retirement: Head count-weighted RP-2014 Healthy Annuitant Mortality Table with no age adjustment for males and set back one year for females, projected generationally with the two-dimensional MP-2015 projection scale	Healthy Post-retirement: Head count-weighted RP-2014 Healthy Annuitant Mortality Table with no age adjustment for males and set back one year for females, projected generationally with the two-dimensional MP-2015 projection scale
Other assumptions	Same as those used in the July 1, 2017 funding actuarial valuation	Same as those used in the July 1, 2016 funding actuarial valuation

* *Includes inflation at 3.00% plus real across-the-board salary increases of 0.50% plus merit and promotional increases as of June 30, 2017 and 2016.*

EXHIBIT 5

Projection of Plan's Fiduciary Net Position for Use in Calculation of Discount Rate as of June 30, 2017 ($ in millions)

Year Beginning July 1,	Projected Beginning Plan's Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Investment Earnings (d)	Projected Ending Plan's Fiduciary Net Position (e) = (a) + (b) - (c) + (d)
2017	$11,314	$500	$590	$817	$12,041
2018	12,041	491	624	868	12,776
2019	12,776	479	664	920	13,511
2020	13,511	448	707	970	14,222
2021	14,222	412	752	1,019	14,900
2022	14,900	405	797	1,066	15,574
2023	15,574	423	842	1,114	16,269
2024	16,269	369	885	1,161	16,915
2025	16,915	270	928	1,202	17,459
2026	17,459	237	971	1,239	17,965
2042	21,721	78	1,638	1,518	21,678
2043	21,678	71	1,664	1,514	21,599
2044	21,599	63	1,688	1,507	21,481
2045	21,481	54	1,712	1,497	21,321
2046	21,321	46	1,734	1,485	21,117
2091	30,740	0	114	2,224	32,850
2092	32,850	0	94	2,378	35,134
2093	35,134	0	76	2,544	37,602
2094	37,602	0	61	2,724	40,265
2095	40,265	0	49	2,917	43,134
2121	247,495	0	0 *	17,943	265,438
2122	265,438				
2122 Discounted Value:	171 **				

* Less than $1 million, when rounded.

** $265,438 million when discounted with interest at the rate of 7.25% per annum has a value of $171 million as of June 30, 2017.

EXHIBIT 5

Projection of Plan's Fiduciary Net Position for Use in Calculation of Discount Rate as of June 30, 2017 - continued

Notes:

(1) Amounts may not total exactly due to rounding.

(2) Years 2027-2041, 2047-2090, and 2096-2120 have been omitted from this table.

(3) Column (a): Except for the "discounted value" shown for 2122, none of the projected beginning Plan's Fiduciary Net Position amounts shown have been adjusted for the time value of money.

(4) Column (b): Projected total contributions include employee and employer normal cost rates applied to closed group projected payroll (based on covered active members as of June 30, 2017), plus employer contributions to the unfunded actuarial accrued liability. Contributions are assumed to occur halfway through the year, on average.

(5) Column (c): Projected benefit payments have been determined in accordance with Paragraph 39 of GASB Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of June 30, 2017. The projected benefit payments reflect the cost of living increase assumptions used in the July 1, 2017 valuation report. The projected benefit payments are assumed to occur halfway through the year, on average.

(6) Column (d): Projected investment earnings are based on the assumed investment rate of return of 7.25% per annum.

(7) Throughout the projection, administrative expenses are not shown as they are expected to be offset by additional employer contributions above those shown in this projection.

(8) As illustrated in this Exhibit, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected "cross-over date" when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.25% per annum was applied to all periods of projected benefit payments to determine the Total Pension Liability as of June 30, 2017 shown earlier in this report, pursuant to Paragraph 44 of GASB Statement No. 67.