



City of Los Angeles Department of Water and Power

**Funding Actuarial Valuation and Review of Other
Postemployment Benefits (OPEB) as of
June 30, 2018**

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October 15, 2018

*Ms. Ann Santilli
Interim Chief Financial Officer
City of Los Angeles Department of Water and Power
111 N. Hope Street, Room 450
Los Angeles, CA 90011*

Dear Ann:

We are pleased to submit this Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2018. The report summarizes the actuarial data used in the valuation, establishes the Actuarially Determined Contribution (ADC) for the coming year, and analyzes the preceding year's experience. This report was based on the census and financial data provided by the Department of Water and Power (DWP), with exceptions noted for data in Exhibit II, and the terms of the Plan as communicated to us by DWP. The actuarial calculations were completed under the supervision of Thomas Bergman, ASA, MAAA, EA and Andy Yeung, ASA, MAAA, FCA, EA. The health care trend and other related medical assumptions have been reviewed by Melissa Bissett, FSA, MAAA.

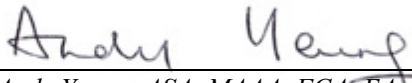
This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions used in this valuation and described in Exhibit II are reasonably related to the experience of and the expectations for the Plan. The actuarial projections are based on these assumptions and the plan of benefits as summarized in Exhibit III.

Sincerely,

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

By: 

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



*Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary*

JAC/bbf

cc: Kathy Fong

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PURPOSE

This report presents the results of our actuarial valuation of the City of Los Angeles Department of Water and Power (DWP) postretirement medical and dental benefits plan as of June 30, 2018 for funding purposes. The results are also consistent with the current Governmental Accounting Standards (GAS), which prescribe an accrual methodology for accumulating the value of other postemployment benefits (OPEB) over participants' active working lifetimes.

The membership data used in the June 30, 2018 valuation was based on the characteristics of covered active members, retired members and beneficiaries as of March 31, 2018.

HIGHLIGHTS OF THE VALUATION

- **The Actuarially Determined Contribution (ADC)** decreased from 8.60% of payroll for the 2017-2018 fiscal year to 7.53% of payroll for the 2018-2019 fiscal year. The reasons for the decrease in ADC include: (a) actual 2017-2018 medical premiums, on average, increased less than assumed in our prior valuation, and (b) favorable investment experience. The return on market value of assets was 9.08% and the return on actuarial value of assets was 8.28% after reflecting the recognition of deferred gains from prior years.
- As of June 30, 2018, the ratio of assets, on an actuarial value basis, to the Actuarial Accrued Liability (AAL), i.e., the funded ratio, is 83.24% compared to 80.86% in the prior valuation. These ratios if measured on a Market Value basis have increased to 84.46% from 81.44% during 2017-2018. There is a reduction in the Unfunded Actuarial Accrued Liability (UAAL) to

\$413.9 million from \$449.3 million calculated in the prior valuation. A detailed reconciliation of the change in UAAL can be found in Chart 2.

- DWP has recently agreed to our recommendation to develop a formal written funding policy. In the interim, we will continue to use the current practice, including a single, declining amortization period and the following approach in developing the Actuarially Determined Contribution (ADC):

Normal cost plus amortization of the UAAL using the following basis:

- Declining 30-year amortization beginning June 30, 2005, with 17 years remaining as of June 30, 2018 and,
- UAAL amortized as a level percent of payroll.
- The GAS 74 report with a measurement date of June 30, 2018 for financial reporting purposes for the Plan was provided as a separate report.
- The GAS 75 report with a measurement date of June 30, 2018 for financial reporting purposes for the employer (with a reporting date of June 30, 2019) will be provided in the next few months.

SECTION 1: Executive Summary for City of Los Angeles Department of Water and Power

The key valuation results for the current and prior years are shown.

SUMMARY OF VALUATION RESULTS

	June 30, 2018	June 30, 2017
Actuarial Accrued Liability (AAL)	\$2,469,304,377	\$2,347,483,631
Actuarial Value of Assets (AVA)	2,055,373,577	1,898,136,791
Unfunded Actuarial Accrued Liability on AVA Basis	413,930,800	449,346,840
Funded Ratio on AVA Basis	83.24%	80.86%
Market Value of Assets (MVA)	2,085,697,159	\$1,911,892,665
Unfunded Actuarial Accrued Liability on MVA Basis	383,607,218	435,590,966
Funded Ratio on MVA Basis	84.46%	81.44%
<hr/>		
Actuarially Determined Contribution (ADC) for Fiscal Year Ending:	June 30, 2019	June 30, 2018
Normal cost (beginning of year)	\$46,187,613	\$49,190,698
Amortization of the unfunded actuarial accrued liability	31,882,546	33,213,505
Adjustment for timing	<u>2,780,528</u>	<u>2,934,888</u>
Total Actuarially Determined Contribution (payable throughout the year)	\$80,850,687	\$85,339,091
Projected total compensation	1,073,554,608	991,814,994
ADC as a percentage of pay	7.53%	8.60%
<hr/>		
Total Participants	18,299	17,844
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IMPORTANT INFORMATION ABOUT ACTUARIAL VALUATIONS

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 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 DWP with exceptions noted for Data in Exhibit II. 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 DWP.
- **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 health care trends and member enrollment in retiree health benefits. 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 DWP. 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 DWP 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.

SECTION 1: Executive Summary for City of Los Angeles Department of Water and Power

- Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in plan enrollment, emerging claims experience and health care trend, not just the current valuation results.
- 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. DWP 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 DWP, it is not a fiduciary in its capacity as actuaries and consultants with respect to DWP.

October 15, 2018

ACTUARIAL CERTIFICATION

This is to certify that Segal Consulting, a Member of The Segal Group, Inc. has conducted an actuarial valuation of certain benefit obligations of City of Los Angeles Department of Water and Power's other postemployment benefit programs as of June 30, 2018, in accordance with generally accepted actuarial principles and practices.

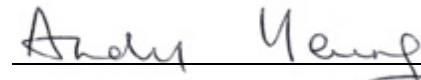
The actuarial valuation is based on the plan of benefits verified by the Employer and reliance on participant, premium, claims and expense data provided by the Employer or from vendors employed by the Employer with exceptions noted for Data in Exhibit II. Segal Consulting does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. Segal, however, does review the data for reasonableness and consistency.

The actuarial computations made are for purposes of funding the plan. Determinations for purposes other than funding may be significantly different from the results reported here. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security at termination of the plan, or determining short-term cash flow requirements.

To the best of our knowledge, this report is complete and accurate and in our opinion presents the information necessary to fund the Plan with respect to the benefit obligations addressed. The signing actuaries are members of the Society of Actuaries, the American Academy of Actuaries, and other professional actuarial organizations and collectively meet their "General Qualification Standards for Statements of Actuarial Opinions" to render the actuarial opinion contained herein.



Thomas Bergman, ASA, MAAA, EA
Retiree Health Actuary



Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary

SECTION 2: Valuation Results for the City of Los Angeles Department of Water and Power

The actuarial present value of total projected benefits uses the actuarial assumptions disclosed in Section 4 to calculate the value today of all benefits expected to be paid to current actives and retired plan members. The actuarial balance sheet shows the expected breakdown of how these benefits will be financed.

CHART 1

Actuarial Present Value of Total Projected Benefits (APB) and Actuarial Balance Sheet

	Actuarial Present Value of Total Projected Benefits (APB)	
	June 30, 2018	June 30, 2017
Participant Category		
Current retirees, beneficiaries, and dependents	\$1,382,806,558	\$1,330,963,851
Current active members	<u>1,575,295,649</u>	<u>1,525,681,292</u>
Total	\$2,958,102,207	\$2,856,645,143
	June 30, 2018	June 30, 2017
Actuarial Balance Sheet		
The actuarial balance sheet as of the valuation date is as follows:		
Assets		
1. Actuarial value of assets	\$2,055,373,577	\$1,898,136,791
2. Present value of future normal costs	488,797,830	509,161,512
3. Unfunded actuarial accrued liability	<u>413,930,800</u>	<u>449,346,840</u>
4. Present value of current and future assets	\$2,958,102,207	\$2,856,645,143
Liabilities		
5. Actuarial Present Value of total Projected Benefits	\$2,958,102,207	\$2,856,645,143

SECTION 2: Valuation Results for the City of Los Angeles Department of Water and Power

The actuarial accrued liability shows that portion of the APB (Chart 1) allocated to periods prior to the valuation date by the actuarial cost method. The chart below shows the portion covered by accumulated plan assets, and reconciles the unfunded actuarial accrued liability from last year to this year.

CHART 2

Actuarial Accrued Liability (AAL) and Unfunded AAL (UAAL)

	June 30, 2018	June 30, 2017
Participant Category		
Current retirees, beneficiaries, and dependents	\$1,382,806,558	\$1,330,963,851
Current active members	<u>1,086,497,819</u>	<u>1,016,519,780</u>
Total actuarial accrued liability	<u>\$2,469,304,377</u>	<u>\$2,347,483,631</u>
Actuarial value of assets	<u>2,055,373,577</u>	<u>1,898,136,791</u>
Unfunded actuarial accrued liability	\$413,930,800	\$449,346,840
Development of Unfunded Actuarial Accrued Liability		
1. Unfunded actuarial accrued liability as of June 30, 2017		\$449,346,840
2. Employer normal cost at beginning of year		49,190,698
3. Total employer contributions		-95,918,712
4. Interest on 1, 2 and 3		<u>32,666,919</u>
5. Expected unfunded actuarial accrued liability (sum of 1 – 4)		\$435,285,745
6. Change due to investment experience gains		-19,481,628
7. Change due to non-investment experience losses		36,394,283
8. Change due to premiums on average, increasing less than expected		-48,133,764
9. Change due to updating health trend assumptions		4,798,880
10. Change due to plan amendments*		-285,566
11. Change from other assumption and method changes		<u>5,352,850</u>
12. Subtotal of 6 – 9		<u>-\$21,354,945</u>
13. Unfunded actuarial accrued liability as of June 30, 2018		\$413,930,800

*Certain technical amendments related to the administration of Tier 2 provisions were adopted. The vesting requirement for Tier 2 members was amended to include a reduction in the minimum vesting requirement for Tier 2 members to 5 years.

SECTION 2: Valuation Results for the City of Los Angeles Department of Water and Power

DWP has recently agreed to our recommendation to develop a formal written funding policy. In the interim, we continue to use the current practice, including a single, declining amortization period, and the following approach in developing the Actuarially Determined Contribution (ADC):

Normal cost plus amortization of the UAAL using the following rules:

- Declining 30-year amortization beginning June 30, 2005, with 17 years remaining as of June 30, 2018 and
- UAAL amortized as a level percent of payroll.

CHART 3

Table of Amortization Bases

Type	Date Established	Initial Year	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
Total Unfunded Actuarial Accrued Liability	6/30/2018	17	\$413,930,800	\$31,882,546	17	\$413,930,800

* *Level percentage of pay*

SECTION 2: Valuation Results for the City of Los Angeles Department of Water and Power

As described on the previous page, the calculation of the ADC consists of adding the Normal Cost of the plan to an amortization payment. The resulting sum is then adjusted with interest assuming that the annual cost will be contributed throughout the fiscal year.

The primary reasons behind the decrease in the ADC from the prior valuation were:

- Premiums on average, increasing less than expected
- Favorable investment experience

CHART 4

Determination of Actuarially Determined Contribution (ADC) – Payable Throughout Fiscal Year Total

Cost Element	Fiscal Year Beginning July 1, 2018 and Ending June 30, 2019		Fiscal Year Beginning July 1, 2017 and Ending June 30, 2018	
	Amount	Percentage of Compensation	Amount	Percentage of Compensation
1. Normal cost	\$46,187,613	4.30%	\$49,190,698	4.96%
2. Amortization of the unfunded actuarial accrued liability (17 years as of June 30, 2018)	31,882,546	2.97%	33,213,505	3.35%
3. Adjustment for timing	<u>2,780,528</u>	<u>0.26%</u>	<u>2,934,888</u>	<u>0.29%</u>
4. Total Actuarially Determined Contribution (ADC)	<u>\$80,850,687</u>	<u>7.53%</u>	<u>\$85,339,091</u>	<u>8.60%</u>
5. Total Compensation	\$1,073,554,608		\$991,814,994	

SECTION 2: Valuation Results for the City of Los Angeles Department of Water and Power

CHART 4 (continued)

Determination of Actuarially Determined Contribution (ADC) – Payable Throughout Fiscal Year Tier 1

Cost Element	Fiscal Year Beginning July 1, 2018 and Ending June 30, 2019		Fiscal Year Beginning July 1, 2017 and Ending June 30, 2018	
	Amount	Percentage of Compensation	Amount	Percentage of Compensation
1. Normal cost	\$35,641,844	4.37%	\$40,861,763	5.06%
2. Amortization of the unfunded actuarial accrued liability (17 years as of June 30, 2018)	24,214,092	2.97%	27,020,381	3.35%
3. Adjustment for timing	<u>2,131,815</u>	<u>0.26%</u>	<u>2,417,674</u>	<u>0.30%</u>
4. Total Actuarially Determined Contribution (ADC)	<u>\$61,987,751</u>	<u>7.60%</u>	<u>\$70,299,818</u>	<u>8.71%</u>
5. Total Compensation	\$815,357,490		\$806,945,610	

SECTION 2: Valuation Results for the City of Los Angeles Department of Water and Power

CHART 4 (continued)

**Determination of Actuarially Determined Contribution (ADC) – Payable Throughout Fiscal Year
Tier 2**

Cost Element	Fiscal Year Beginning July 1, 2018 and Ending June 30, 2019		Fiscal Year Beginning July 1, 2017 and Ending June 30, 2018	
	Amount	Percentage of Compensation	Amount	Percentage of Compensation
1. Normal cost	\$10,545,769	4.08%	\$8,328,935	4.51%
2. Amortization of the unfunded actuarial accrued liability (17 years as of June 30, 2018)	7,668,454	2.97%	6,193,124	3.35%
3. Adjustment for timing	<u>648,713</u>	<u>0.26%</u>	<u>517,214</u>	<u>0.28%</u>
4. Total Actuarially Determined Contribution (ADC)	<u>\$18,862,936</u>	<u>7.31%</u>	<u>\$15,039,273</u>	<u>8.14%</u>
5. Total Compensation	\$258,197,118		\$184,869,384	

SECTION 2: Valuation Results for the City of Los Angeles Department of Water and Power

CHART 5

Schedule of Employer Contributions

Fiscal Year Ended June 30	Actuarially Determined Contributions ⁽¹⁾	Actual Contributions ⁽¹⁾⁽²⁾	Percentage Contributed
2014	\$58,453,215	\$74,714,782	127.82%
2015	70,748,429	79,160,430	111.89%
2016	61,971,138	80,606,726	130.07%
2017	93,920,143	91,023,926	96.92%
2018	85,339,091	95,918,712	112.40%
2019	80,850,687	Not Made Yet	N/A

⁽¹⁾ Payable throughout the year.

⁽²⁾ Contributions were:

<i>Fiscal Year</i>	<i>Contribution towards insurance premiums (A)</i>	<i>Contributions towards administrative expenses (B)</i>	<i>Total Department contributions (A) + (B)</i>
2013-2014	\$74,105,548	\$609,234	\$74,714,782
2014-2015	78,496,618	663,812	79,160,430
2015-2016	79,895,671	711,055	80,606,726
2016-2017	90,310,419	713,507	91,023,926
2017-2018	95,233,622	685,090	95,918,712

SECTION 2: Valuation Results for the City of Los Angeles Department of Water and Power

This schedule of funding progress presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

CHART 6

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) – (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) – (a) / (c)]
06/30/2013	\$1,332,135,662	\$1,743,726,715	\$411,591,053	76.40%	\$900,254,454	45.72%
06/30/2014	1,485,139,934	1,947,912,233	462,772,299	76.24%	900,126,274	51.41%
06/30/2015	1,637,578,438	1,956,230,463	318,652,025	83.71%	920,781,074	34.61%
06/30/2016	1,752,195,162	2,334,042,813	581,847,651	75.07%	928,888,680	62.64%
06/30/2017	1,898,136,791	2,347,483,631	449,346,840	80.86%	991,814,994	45.31%
06/30/2018	2,055,373,577	2,469,304,377	413,930,800	83.24%	1,073,554,608	38.56%

SECTION 3: Supplemental Valuation Details for the City of Los Angeles Department of Water and Power

This exhibit summarizes the participant data used for the current and prior valuations.

EXHIBIT A

Summary of Participant Data - Total

	June 30, 2018	June 30, 2017
Retirees		
Number*	6,752	6,674
Average age of retirees	72.8	72.8
Number of spouses	3,546	3,476
Average age of spouses	67.2	68.7
Surviving Spouses		
Number*	1,433	1,364
Average age	80.6	80.8
Active Participants		
Number	10,114	9,806
Average age	47.5	47.9
Average years of qualifying service**	16.2	16.3
Average expected retirement age	63.1	63.0

* A retiree or surviving spouse is only counted if receiving a medical and/or dental benefit.

**Differs from the service type shown (Service Credit) in the Retirement Plan valuation.

SECTION 3: Supplemental Valuation Details for the City of Los Angeles Department of Water and Power

EXHIBIT A (continued)

Summary of Participant Data – Tier 1

	June 30, 2018	June 30, 2017
Retirees		
Number*	6,752	6,674
Average age of retirees	72.8	72.8
Number of spouses	3,546	3,476
Average age of spouses	67.2	68.7
Surviving Spouses		
Number*	1,433	1,364
Average age	80.6	80.8
Active Participants		
Number	7,196	7,543
Average age	51.2	50.6
Average years of qualifying service**	21.0	20.2
Average expected retirement age	62.7	62.6

* A retiree or surviving spouse is only counted if receiving a medical and/or dental benefit.

**Differs from the service type shown (Service Credit) in the Retirement Plan valuation.

SECTION 3: Supplemental Valuation Details for the City of Los Angeles Department of Water and Power

EXHIBIT A (continued)

Summary of Participant Data – Tier 2

	June 30, 2018	June 30, 2017
Retirees		
Number*	0	0
Average age of retirees	N/A	N/A
Number of spouses	N/A	N/A
Average age of spouses	N/A	N/A
Surviving Spouses		
Number*	0	0
Average age	N/A	N/A
Active Participants		
Number	2,918	2,263
Average age	38.6	38.8
Average years of qualifying service**	4.4	3.4
Average expected retirement age	64.0	64.4

* A retiree or surviving spouse is only counted if receiving a medical and/or dental benefit.

**Differs from the service type shown (Service Credit) in the Retirement Plan valuation.

SECTION 3: Supplemental Valuation Details for the City of Los Angeles Department of Water and Power

EXHIBIT B

Cash Flow Projections

Initially, the ADC generally exceeds the current pay-as-you-go (“paygo”) cost of an OPEB plan. Over time the paygo cost will tend to grow and becomes close to and may exceed the ADC, which is expected in a well-funded and more mature plan such as this one. The following table projects the paygo cost over the next ten years.

Year Ending June 30	Projected Number of Retirees*			Projected Benefit Payments		
	Current	Future	Total	Current	Future	Total
2019	11,731	639	12,370	\$102,176,529	\$6,111,605	\$108,288,134
2020	11,348	1,233	12,581	104,862,538	12,679,691	117,542,229
2021	10,966	1,857	12,823	107,105,588	20,271,908	127,377,496
2022	10,590	2,460	13,050	109,228,218	28,365,525	137,593,743
2023	10,210	3,022	13,232	111,550,601	38,170,476	149,721,077
2024	9,835	3,558	13,393	112,462,159	46,874,558	159,336,717
2025	9,461	4,057	13,518	113,246,778	55,110,828	168,357,606
2026	9,091	4,526	13,617	113,175,521	63,268,099	176,443,620
2027	8,721	4,962	13,683	113,030,885	71,134,751	184,165,636
2028	8,354	5,363	13,717	112,965,625	77,989,032	190,954,657

* Includes spouses of retirees.

SECTION 3: Supplemental Valuation Details for the City of Los Angeles Department of Water and Power

EXHIBIT C

Actuarial Value of Assets

To minimize volatility in the calculation of the Actuarially Determined Contribution, the Employer may choose to smooth out short-term changes in the market value of plan assets by use of an actuarial value of assets method. City of Los Angeles Department of Water and Power adopted the following method that smooths such changes over a five-year period.

Determination of Actuarial Value of Assets as of June 30, 2018

1. Market value of assets				\$2,085,697,159
	Original Amount	Percent Unrecognized	Unrecognized Amount	
2. Calculation of unrecognized return*				
(a) Year ended June 30, 2018	\$35,065,044	80%	\$28,052,035	
(b) Year ended June 30, 2017	96,241,076	60%	57,744,646	
(c) Year ended June 30, 2016	-111,317,036	40%	-44,526,814	
(d) Year ended June 30, 2015	-54,731,423	20%	-10,946,285	
(e) Year ended June 30, 2014	127,229,022	0%	<u>0</u>	
3. Total unrecognized return**				\$30,323,582
4. Actuarial value: (1) - (3)				\$2,055,373,577
5. Actuarial value as a percentage of market value: (4) ÷ (1)				<u>98.55%</u>

* Total return minus expected return on a market value basis

** Deferred return as of June 30, 2018 recognized in each of the next 4 years:

(a) Amount recognized during 2018-2019:	-\$6,948,468
(b) Amount recognized during 2019-2020:	3,997,817
(c) Amount recognized during 2020-2021:	26,261,224
(d) Amount recognized during 2021-2022:	<u>7,013,009</u>
(e) Total	\$30,323,582

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

EXHIBIT I

Summary of Supplementary Information

Valuation date	June 30, 2018
Actuarial cost method	Entry Age, Level Percent of Pay
Amortization method	30-Year Amortization Closed, Level Percent of Pay
Remaining amortization period	17 years as of June 30, 2018
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.

Actuarial assumptions:

Investment rate of return	7.25%
Inflation rate	3.00%
Projected salary increases	3.50%, plus merit and promotional increases, shown in Exhibit II.
Non-Medicare cost trend rate	7.00%, graded down to an ultimate rate of 4.50% over 10 years
Medicare cost trend rate	6.50%, graded down to an ultimate rate of 4.50% over 8 years
Dental and Medicare Part B subsidy costs trend rate	4.00%

Plan membership:

	June 30, 2018	June 30, 2017
Current retirees* and beneficiaries receiving dental and/or medical subsidy	8,185	8,038
Current active participants	<u>10,114</u>	<u>9,806</u>
Total	18,299	17,844

* Excludes 3,546 and 3,476 spouses from the June 30, 2018 and 2017 valuations, respectively.

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method

Data: Detailed census data and financial data for postemployment benefits were provided by DWP. Consistent with valuation for the Retirement Plan, that service has been increased by three months to account for the difference between the date the active census data was captured (March 31) and the valuation date (June 30). Where known, actual subsidies (updated from March 31 to July 1) were valued.

Actuarial Cost Method: Entry age, level percent of pay.

Rationale for Assumptions: The information and analysis used in selecting each non-health-related assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2012 through June 30, 2015 Actuarial Experience Study dated May 23, 2016 performed by Segal for the Retirement Plan.

The information and analysis used in selecting health-related assumptions is shown in our assumptions letter dated September 28, 2018. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both Tier 1 and Tier 2 employees.

Mortality Rates:

Pre-retirement: Head count-weighted RP-2014 Employee Mortality Table times 80%, projected generationally with the two-dimensional MP-2015 projection scale.

After Service 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.

After Disability 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.

The RP-2014 mortality tables and adjustments as shown above reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

Termination Rates Before Retirement:

Age	Rate (%)	
	Male Mortality*	Disability
25	0.049	0.006
30	0.048	0.012
35	0.053	0.012
40	0.064	0.018
45	0.098	0.030
50	0.167	0.054
55	0.273	0.126
60	0.452	0.240
65	0.779	0.000

Age	Female	
	Mortality*	Disability
25	0.017	0.000
30	0.022	0.006
35	0.029	0.036
40	0.039	0.072
45	0.058	0.102
50	0.100	0.138
55	0.168	0.168
60	0.241	0.000
65	0.356	0.000

* Note that generational projections beyond the base year (2014) are not reflected in the above mortality rates.

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

Withdrawal Rates:

<u>Years of Service</u>	<u>Total Withdrawal*</u>
Less than 1	12.00%
1	6.00%
2	4.00%
3	2.50%
4	2.00%
5	2.00%
6	1.75%
7	1.50%
8	1.25%
9	1.00%
10 & over	0.75%

**No withdrawal is assumed after a member is first eligible to retire*

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

Retirement Rates:

Age	Rate (%)			
	Tier 1		Tier 2	
	Under 30 Years of Service	30 or More Years of Service	Under 30 Years of Service	30 or More Years of Service
55	4.50%	25.00%	0.0%	25.0%
56	2.00	20.00	0.0	14.0
57	2.50	17.00	0.0	12.0
58	3.00	17.00	0.0	12.0
59	3.00	17.00	0.0	12.0
60	5.00	20.00	5.0	17.5
61	6.00	20.00	2.5	5.0
62	6.00	20.00	0.0	5.0
63	6.00	25.00	20.0	25.0
64	7.00	25.00	15.0	25.0
65	11.00	28.00	14.0	28.0
66	11.00	28.00	14.0	28.0
67	11.00	28.00	14.0	28.0
68	11.00	28.00	14.0	28.0
69	13.00	28.00	13.0	28.0
70	25.00	25.00	100.0	100.0
71	25.00	25.00	100.0	100.0
72	25.00	25.00	100.0	100.0
73	25.00	25.00	100.0	100.0
74	25.00	25.00	100.0	100.0
75	100.00	100.00	100.0	100.0

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

Measurement Date: June 30, 2018

Discount Rate: 7.25%, net of investment expenses.

Salary Increases: Annual Rate of Compensation Increase

Inflation: 3.00% per year, plus “across the board” salary increases of 0.50% per year, plus the following merit and promotional increases.

<u>Years of Service</u>	<u>Increase</u>
Less than 1	6.50%
1	6.00%
2	5.50%
3	4.50%
4	3.00%
5	2.00%
6	1.50%
7	1.40%
8	1.30%
9	1.20%
10 & over	1.00%

The merit and promotional increases are added to the sum of the inflationary and “across the board” salary increases.

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

Per Capita Cost Development:

The assumed per capita claims cost by age (and other demographic factors such as sex and family status) is the future per capita cost of providing postretirement health care benefits at each age. The factors on page 28 are applied to the premiums shown on pages 26 and 27 to calculate the age-based costs.

Medical and Dental Annual Subsidy

Where known, actual subsidies provided in the data were used. For periods where subsidy is unknown, the average monthly retiree subsidies effective July 1, 2018 were assumed as shown below:

Dental Premium Subsidy (For Single and Multi-Party, Tiers 1 and 2)

Carrier	Election Percent	Premium
		Single Party
United Concordia DHMO	20%	\$18.24
United Concordia PPO	65%	\$35.79
IBEW Local 18	15%	\$117.90

The maximum monthly dental subsidy is \$35.79, except for Local 18 with a maximum of \$117.90.

Eligible spouses and survivors are not eligible for DWP dental subsidy.

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

For retirees in pay status, we use the relevant premiums provided on participant records. In cases where the carrier elections are unknown, we will assume the participant elects a carrier in the same proportion as current retirees in that group. The table below shows the assumed distribution of medical insurance carriers for retirees and the monthly premiums as of July 1, 2018.

Under Age 65			
Carrier	Assumed Election Percent	Single Party Premium	Participant +1 Both Under 65
Kaiser	55.0	\$875.59	\$1,751.18
United Health Care Option A	5.0	1,434.40	2,868.87
Blue Cross HMO	20.0	1,518.83	1,797.80
United Health Care HMO	5.0	1,488.90	3,072.59
United Health Care Option B	5.0	1,244.91	2,489.87
Blue Cross PPO	5.0	1,716.26	2,179.43
United Health Care Option C	5.0	968.92	1,937.87

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

Age 65 and Older			
Carrier	Assumed Election Percent	Single Party Premium	Participant +1 Both Age 65+
Kaiser Senior Advantage	55.0	\$344.23	\$688.46
United Health Care Option A	25.0	605.10	1,210.20
United Health Care Medicare Advantage	10.0	462.91	925.82
Senior Dimensions	5.0	289.52	579.04
Blue Cross HMO	5.0	961.02	1,556.75
Medicare Part B	100	\$134.00	\$268.00

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

The per capita costs were then adjusted for age and gender using the below factors:

Applied to Per Capita Costs for under age 65				
Age	Retiree		Spouse	
	Male	Female	Male	Female
55	0.9029	0.9322	0.7106	0.8049
60	1.0723	1.0048	0.9513	0.9335
64	1.2302	1.0659	1.2009	1.0506

Applied to Per Capita Costs for age 65 and older				
Age	Retiree		Spouse	
	Male	Female	Male	Female
65	0.9130	0.7760	0.9130	0.7760
70	1.0582	0.8363	1.0582	0.8363
75	1.1403	0.9002	1.1403	0.9002
80+	1.2280	0.9705	1.2280	0.9705

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EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

Health Care Cost Subsidy Trend Rates:

Health care trend measures the anticipated overall rate at which health plan costs are expected to increase in future years. Trend rates are used to increase the premiums and the stated subsidies into the future. For example, the expected maximum monthly medical subsidy for a Tier 1 retiree with 30 years of service in the year July 1, 2019 through June 30, 2020 (set equal to the two-party, under-65 Kaiser premium) would be determined with the following formula:

$$[\$1,751 \times (1 + 7.00\%)] = \$1,874$$

Year Ending June 30	Medical			Dental
	Non-Medicare	Medicare	Medicare Part B	
2019	7.00%	6.50%	4.00%	4.00%
2020	6.75	6.25	4.00	4.00
2021	6.50	6.00	4.00	4.00
2022	6.25	5.75	4.00	4.00
2023	6.00	5.50	4.00	4.00
2024	5.75	5.25	4.00	4.00
2025	5.50	5.00	4.00	4.00
2026	5.25	4.75	4.00	4.00
2027	5.00	4.50	4.00	4.00
2028	4.75	4.50	4.00	4.00
2029 & Later	4.50	4.50	4.00	4.00

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

Marital Status	Actives at the time of retirement: 75% of male employees and 40% of female employees assumed to be married with coverage for spouse. Retirees at the time of retirement: Actual data included in census.
Spouse Age Difference	Husbands are assumed to be 1 year older than female members. Wives are assumed to be 3 years younger than male members.
Future Benefit Accruals:	1.0 year of service per year.
Other Government Service:	Tier 1 members are assumed to purchase an additional 0.10 years of service per year. Tier 2 members are assumed to purchase an additional 0.03 years of service per year. These service purchases exclude those priced at full actuarial cost.
Participation	97% of the current actives are assumed to enroll in medical coverage at retirement. 95% of the current actives are assumed to enroll in dental coverage at retirement.
Asset Valuation Method	Any actual investment gains and losses that are above or below the annual return assumed in the valuation are recognized over 5-year periods.
Plan Design:	Development of plan liabilities was based on the substantive plan of benefits in effect as described in Exhibit III.
Administrative Expenses:	No administrative expenses were valued separately from the claim costs.
Implicit Subsidy:	None. Premiums paid by the retirees reflect rates underwritten for retirees only.

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method (continued)

Impact of Affordable Care Act:

As directed by DWP, we have reflected in the current valuation the impact of potential excise tax imposed by the Affordable Care Act (ACA), and related statutes.

In particular, it is our understanding that beginning in 2022 (deferred from 2018 when thresholds begin), the legislation will impose a 40 percent excise tax on the cost of health plans above a certain threshold. It is our further understanding that the thresholds in 2018 for non-Medicare retirees aged 55 through 64 are \$11,850 for single coverage and \$30,950 for family coverage as specified in the Health Care Reform. For all other retirees the thresholds in 2018 are \$10,200 for single coverage and \$27,500 for family coverage. ACA allows the higher thresholds also to be used for any member “who participates in a plan sponsored by an employer the majority of whose employees covered by the plan are engaged in a high-risk profession or employed to repair or install electrical or telecommunication lines.” We did not have the data available to identify such members in the current valuation, and so have not applied these higher thresholds except for members aged 55 through 64 (to whom the higher thresholds apply regardless of risk-type profession classification). If such data is provided by DWP, we can reflect this higher threshold in the excise tax calculation in our future valuations.

The thresholds in 2019 are indexed and for the purpose of this valuation, they are assumed to increase by 4.00% (i.e., 1% over the assumed 3.00% CPI assumption used in the retirement valuation) over those in 2018. After 2019, the thresholds are assumed to increase by 3.00% (assumed CPI inflation) per year. In this valuation, we have allocated the excise tax between the Plan and the retiree, based on the proportion of the health care cost expected to be paid by each party.

Assumption Changes Since Prior Valuation:

The following assumptions were changed since the prior valuation:

- Updated spouse age difference assumption.
- Updated per capita costs.
- Decreased dental and Medicare Part B subsidy trend from 4.50% to 4.00%.

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

EXHIBIT III

Summary of Plan

This exhibit summarizes the major benefit provisions as included in the valuation. To the best of our knowledge, the summary represents the substantive plans as of the measurement date. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions.

Eligibility:	A retiree who was an employee of DWP immediately prior to retirement and is receiving a monthly allowance under DWP’s retirement plan is eligible for the subsidy.
<i>Tier 1</i>	All members hired before January 1, 2014.
<i>Tier 2</i>	All members hired on or after January 1, 2014.
Age & Service Requirement:	Eligible for minimum pension from the Retirement Plan as follows:
<i>Tier 1</i>	Age 60 with 5 years of Department service; or Age 55 with 10 years of Department service in the last 12 years; or Any age with 30 years of Department service; or Receiving permanent total disability benefits from the Plan. Note: To be eligible, 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.
<i>Tier 2</i>	Age 60 with 5 years of continuous Department Service with the Plan immediately prior to reaching eligibility; or Age 60 with 10 years of Qualifying service; or Any age with 30 years of Qualifying service; or Receiving permanent total disability benefits from the Plan.

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

Benefit Types:

The DWP subsidy is computed by a formula related to years of qualifying service and attained age at retirement. The actual years of qualifying service are rounded either up or down to the nearest integer value.

The subsidy limit is applied to the combined medical carrier and Medicare Part B premium, but not the dental premium.

Tier 1

Age at Retirement	Years of Service				
	10	15	20	25	30
55	\$350	\$700	\$1,051	\$1,401	\$1,751
56	357	713	1,070	1,426	1,751
57	363	726	1,089	1,452	1,751
58	369	739	1,108	1,477	1,751
59	376	751	1,127	1,503	1,751
60	382	764	1,146	1,528	1,751
61	388	777	1,165	1,554	1,751
62	395	790	1,184	1,579	1,751
63	401	802	1,204	1,605	1,751
64	408	815	1,223	1,630	1,751
65	414	828	1,242	1,656	1,751

Tier 2

Age at Retirement	Years of Service				
	10	15	20	25	30
55	\$175	\$350	\$525	\$700	\$876
56	178	357	535	713	876
57	181	363	544	726	876
58	185	369	554	739	876
59	188	376	564	751	876
60	191	382	573	764	876
61	194	388	583	777	876
62	197	395	592	790	876
63	201	401	602	802	876
64	204	408	611	815	876
65	207	414	621	828	876

SECTION 4: Supporting Information for the City of Los Angeles Department of Water and Power

As shown, the maximum possible subsidy is \$1,751 and \$876 for Tier 1 and 2, respectively. Subsidies may increase until age at retirement reaches 69.

Dependent Coverage:

Dependent spouses are eligible for the DWP medical subsidy coverage. Surviving spouses are eligible to receive the DWP medical subsidy that would have been given to the deceased employee or retiree if still living, and only if the surviving spouse was enrolled in the deceased members' plan at the time of the members' death. Surviving spouses and dependent spouses are not eligible for the dental subsidy.

Retiree Contributions:

To the extent the DWP subsidies are less than the medical or dental premiums, the retiree contributes the cost difference.

Changes in Plan Provisions:

Certain technical amendments related to the administration of Tier 2 provisions were adopted. The vesting requirement for Tier 2 members was amended to include a reduction in the minimum vesting requirement for Tier 2 members to 5 years.

EXHIBIT IV

Definitions of Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial

Assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

**Actuarial Present Value of Total
Projected Benefits (APB):**

Present value of all future benefit payments for current retirees and active employees taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions.

Normal Cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

**Actuarial Accrued Liability
For Actives:**

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

**Actuarial Accrued Liability
For Retirees:**

The single sum value of lifetime benefits to existing retirees. This sum takes account of life expectancies appropriate to the ages of the retirees and of the interest which the sum is expected to earn before it is entirely paid out in benefits.

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Actuarial Value of Assets (AVA):	The value of assets used by the actuary in the valuation. These may be at market value or some other method used to smooth variations in market value from one valuation to the next.
Funded Ratio:	The ratio AVA/AAL.
Unfunded Actuarial Accrued Liability (UAAL):	The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.
Amortization of the Unfunded Actuarial Accrued Liability:	Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.
Investment Return (discount rate):	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next. If the plan is funded on a pay-as-you-go basis, the discount rate is tied to the expected rate of return on day-to-day employer funds.
Covered Payroll:	Annual reported salaries for all active participants on the valuation date.
ADC as a Percentage of Covered Payroll:	The ratio of the Actuarially Determined contribution to covered payroll.
Health Care Cost Trend Rates:	The annual rate of increase in net claims costs per individual benefiting from the Plan.
Actuarially Determined Contribution (ADC):	The ADC is equal to the sum of the normal cost and the amortization of the unfunded actuarial accrued liability.

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