City of Los Angeles Department of Water and Power

Actuarial Valuation and Review of Other Postemployment Benefits (OPEB)

As of June 30, 2020

Segal

Segal

180 Howard Street, Suite 1100
San Francisco, CA 94105-6147
segalco.com
T 415.263.8200

December 2, 2020

Ms. Ann Santilli
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, 2020. 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 Paul Sadro, ASA, MAAA.

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

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

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

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

JAC/jl

Table of Contents

Section 1: Executive Summary

Purpose

This report presents the results of our actuarial valuation of the City of Los Angeles Water and Power (DWP) postretirement medical and dental benefits plan as of June 30, 2020 for funding purposes. The results of the valuation for financial reporting purposes consistent with Governmental Accounting Standards Board (GASB) Statement No. 74 are provided in a separate report.

Highlights of the Valuation

- The Actuarially Determined Contribution (ADC) rate has decreased from 8.35% of payroll to 5.21% of payroll for the 2020/2021 fiscal year. The decrease in ADC was primarily due to: (i) 2020/2021 premium and subsidy levels substantially lower than expected (as the 2020-2021 Kaiser non-Medicare premiums, upon which the maximum subsidies are based, were projected to be 7.6%[1] higher than their 2019-2020 levels but actually decreased by 7.2%.) and (ii) repeal of the excise tax on high cost health plans ("Cadillac Tax"), offset to some degree by (iii) updated trend for projecting medical premiums after 2020/2021. Rates are shown separately for Tier 1 and Tier 2 in Section 2D.
- The ratio of the actuarial value of assets to actuarial accrued liabilities increased from 81.85% to 93.90%. On a market value of assets basis, the funded ratio increased from 82.75% to 92.51%. The unfunded actuarial accrued liability decreased from $487.0 million to $151.8 million. A complete reconciliation of the System's unfunded actuarial accrued liability is provided in Section 2B.
- As noted above, the Governmental Accounting Standards (GAS) 74 report with a measurement date of June 30, 2020 for financial reporting purposes for the Plan was provided as a separate report.
- The GAS 75 report with a measurement date of June 30, 2020 for financial reporting purposes for the employer (with a reporting date of June 30, 2021) will be provided in the next few months.
- The actuarial valuation report as of June 30, 2020 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan.

[1] 7.6% was the sum of a 6.75% assumed premium increase for non-Medicare Plans and a 0.85% assumed average premium increase due to the application of the Health Insurance Tax (HIT) expected at the time of the June 30, 2019 valuation.

Section 1: Executive Summary

- As noted above this actuarial valuation is based on plan assets as of June 30, 2020. Due to the COVID-19 pandemic, market conditions have varied significantly during 2020. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. While it is impossible to determine how the pandemic will continue to affect market conditions, health care costs, and other demographic experience of the Plan prior to next year's valuation, Segal is available to prepare projections of potential outcomes upon request.

Summary of Valuation Results

	June 30, 2020	June 30, 2019
Actuarial Accrued Liability (AAL)	$2,490,223,378	$2,683,446,018
Actuarial Value of Assets (AVA)	2,338,427,041	2,196,487,396
Unfunded Actuarial Accrued Liability on AVA Basis	151,796,337	486,958,622
Funded Ratio on AVA Basis	93.90%	81.85%
Market Value of Assets (MVA)	$2,303,713,346	$2,220,545,145
Unfunded Actuarial Accrued Liability on MVA Basis	186,510,032	462,900,873
Funded Ratio on MVA Basis	92.51%	82.75%
Actuarially Determined Contribution (ADC) for Fiscal Year Ending:	**June 30, 2021**	**June 30, 2020**
Normal cost (beginning of year)	$48,226,344	$52,963,965
Amortization of the unfunded actuarial accrued liability	12,837,468	39,239,001
Adjustment for timing	2,101,087	3,172,523
Total Actuarially Determined Contribution (payable throughout the year)	$63,164,899	$95,375,489
Projected total compensation	1,211,798,340	1,141,875,615
ADC as a percentage of pay	5.21%	8.35%
Total Participants	19,099	18,615

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

Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of an OPEB 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 a valuation, 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. 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 plan trend and enrollment. 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.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Section 1: Executive Summary

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.
- 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 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.

Actuarial Certification

December 2, 2020

This is to certify that Segal, 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 benefits program as of June 30, 2020, 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 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	Paul Sadro, ASA, MAAA Health Benefits Consultant

Section 2: Valuation Results

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

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.

	Actuarial Present Value of Total Projected Benefits (APB)	
	June 30, 2020	June 30, 2019
Participant Category		
Current retirees, beneficiaries, and dependents	$1,454,173,533	$1,513,238,096
Current active members	1,572,488,640	1,755,498,622
Total	**$3,026,662,173**	**$3,268,736,718**

	Actuarial Balance Sheet	
	June 30, 2020	June 30, 2019
Assets		
1. Actuarial value of assets	$2,338,427,041	$2,196,487,396
2. Present value of future normal costs	536,438,795	585,290,700
3. Unfunded actuarial accrued liability	151,796,337	486,958,622
4. Present value of current and future assets	**$3,026,662,173**	**$3,268,736,718**
Liabilities		
5. Actuarial present value of total projected benefits	$3,026,662,173	$3,268,736,718

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

The actuarial accrued liability shows that portion of the APB allocated to periods prior to the valuation date by the actuarial cost method. The chart below shows the portion of the liability for active and inactive members, and reconciles the unfunded actuarial accrued liability from last year to this year.

	June 30, 2020	June 30, 2019
Participant Category		
Current retirees, beneficiaries, and dependents	$1,454,173,533	$1,513,238,096
Current active members	1,036,049,845	1,170,207,922
Total actuarial accrued liability	**$2,490,223,378**	**$2,683,446,018**
Actuarial value of assets	2,338,427,041	2,196,487,396
Unfunded actuarial accrued liability	**$151,796,337**	**$486,958,622**
Development of Unfunded Actuarial Accrued Liability for the Year Ended June 30, 2020		
1. Unfunded actuarial accrued liability as of June 30, 2019		**$486,958,622**
2. Employer normal cost at beginning of year		52,963,965
3. Total employer contributions		-110,444,724
4. Interest on 1, 2 and 3		33,929,017
5. Expected unfunded actuarial accrued liability (sum of 1 – 4)		$463,406,880
6. Change due to investment experience losses after asset smoothing		12,134,286
7. Change due to non-investment experience losses		25,802,238
8. Change due to premiums on average increasing less than expected		-295,927,431
9. Change due to updating health trend assumptions		898,876
10. Change due to other health-related assumption and method changes		-17,294,848
11. Change due to repeal of excise tax on certain high-cost health plans (“Cadillac Tax”)		-37,223,664
12. Subtotal of 6 – 11		-$311,610,543
13. Unfunded actuarial accrued liability as of June 30, 2020		**$151,796,337**

C. Table of Amortization Bases

DWP is currently working with Segal to develop a formal written funding policy. Pending formal adoption of such policy, 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 basis:

- Declining 30-year amortization beginning June 30, 2005, with 15 years remaining as of June 30, 2020 and
- UAAL amortized as a level percent of payroll.

Type	Date Established	Initial Year	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
Total Unfunded Actuarial Accrued Liability	06/30/2020	15	$151,796,337	$12,837,468	15	$151,796,337

*Level percent of payroll

D. Determination of Actuarially Determined Contribution (ADC)

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 reason behind the decrease in the ADC from the prior valuation was medical premiums for 2020-2021 lower than projected in the prior valuation.

Total Plan

		ADC Determined as of			
		June 30, 2020		June 30, 2019	
		Amount	Percentage of Compensation	Amount	Percentage of Compensation
1.	Normal cost	$48,226,344	3.98%	$52,963,965	4.64%
2.	Amortization of the unfunded actuarial accrued liability	12,837,468	1.06%	39,239,001	3.44%
3.	Adjustment for timing	2,101,087	0.17%	3,172,523	0.27%
4.	**Total Actuarially Determined Contribution(payable throughout the year)**	**$63,164,899**	**5.21%**	**$95,375,489**	**8.35%**
5.	Total Projected Compensation	$1,211,798,340		$1,141,875,615	

Section 2: Valuation Results

Tier 1

	ADC Determined as of			
	June 30, 2020		June 30, 2019	
	Amount	Percentage of Compensation	Amount	Percentage of Compensation
6. Normal cost	$32,530,645	4.16%	$38,428,200	4.78%
7. Amortization of the unfunded actuarial accrued liability	8,279,761	1.06%	27,628,539	3.44%
8. Adjustment for timing	1,404,207	0.18%	2,272,883	0.27%
9. Total Actuarially Determined Contribution payable throughout the year)	**$42,214,613**	**5.40%**	**$68,329,622**	**8.49%**
10. Total Projected Compensation	$781,826,000		$804,362,186	

Tier 2

	ADC Determined as of			
	June 30, 2020		June 30, 2019	
	Amount	Percentage of Compensation	Amount	Percentage of Compensation
11. Normal cost	$15,695,699	3.65%	$14,535,765	4.31%
12. Amortization of the unfunded actuarial accrued liability	4,557,707	1.06%	11,610,462	3.44%
13. Adjustment for timing	696,880	0.16%	899,640	0.26%
14. Total Actuarially Determined Contribution (payable throughout the year)	**$20,950,286**	**4.87%**	**$27,045,867**	**8.01%**
15. Total Projected Compensation	$429,972,340		$337,513,429	

E. Schedule of Employer Contributions

Fiscal Year Ended June 30	Actuarially Determined Contributions[1]	Actual Contributions[1, 2]	Percentage Contributed
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	102,631,460	126.94%
2020	95,375,489	110,444,724	115.80%
2021	63,164,899	Not Made Yet	N/A

[1] Payable throughout the year.

[2] Contributions were:

Fiscal Year	Contribution towards insurance premiums (A)	Contributions towards administrative expenses (B)	Total Department contributions (A) + (B)
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
2018-2019	101,594,970	1,036,490	102,631,460
2019-2020	109,401,181	1,043,543	110,444,724

F. Schedule of Funding Progress

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.

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)]
06/30/2015	$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%
06/30/2019	2,196,487,396	2,683,446,018	486,958,622	81.85%	1,141,875,615	42.65%
06/30/2019	2,338,427,041	2,490,223,378	151,796,337	93.90%	1,211,798,340	12.53%

Section 3: Supplemental Information

Exhibit A: Summary of Participant Data

Total Plan

	June 30, 2020	June 30, 2019
Retired Members		
Number[1]	6,960	6,871
Average age of retirees	72.7	72.8
Number of spouses	3,703	3,649
Average age of spouses[2]	62.9	62.5
Surviving Spouses		
Number[1]	1,361	1,382
Average age	81.2	81.0
Active Participants		
Number	10,778	10,362
Average age	46.7	47.2
Average years of qualifying service[3]	15.0	15.7
Average expected retirement age	63.3	63.1

1 A retiree or surviving spouse is only counted if receiving a medical and/or dental benefit.
2 The average spouse ages shown are based on records provided with actual spouse date of birth.
3 Differs from the service type shown (Service Credit) in the Retirement Plan valuation.

Tier 1

	June 30, 2020	June 30, 2019
Retired Members		
Number[1]	6,960	6,871
Average age of retirees	72.7	72.8
Number of spouses	3,703	3,649
Average age of spouses[2]	62.9	62.5
Surviving Spouses		
Number[1]	1,361	1,382
Average age	81.2	81.0
Active Participants		
Number	6,394	6,801
Average age	52.2	51.7
Average years of qualifying service[3]	22.0	21.5
Average expected retirement age	62.8	62.6

1 A retiree or surviving spouse is only counted if receiving a medical and/or dental benefit.
2 The average spouse ages shown are based on records provided with actual spouse date of birth.
3 Differs from the service type shown (Service Credit) in the Retirement Plan valuation.

Tier 2

	June 30, 2020	June 30, 2019
Retired Members		
Number[1]	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[1]	0	0
Average age	N/A	N/A
Active Participants		
Number	4,384	3,561
Average age	38.8	38.7
Average years of qualifying service[2]	4.9	4.6
Average expected retirement age	64.0	64.1

[1] A retiree or surviving spouse is only counted if receiving a medical and/or dental benefit.
[2] Differs from the service type shown (Service Credit) in the Retirement Plan valuation.

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[1]			Projected Benefit Payments		
	Current	Future	Total	Current	Future	Total
2021	12,024	692	12,716	$108,339,265	$6,826,835	$115,166,100
2022	11,626	1,318	12,944	109,743,819	13,679,552	123,423,371
2023	11,233	1,895	13,128	111,809,683	20,692,817	132,502,500
2024	10,841	2,447	13,288	113,551,324	27,874,205	141,425,529
2025	10,452	2,960	13,412	114,878,649	34,852,465	149,731,114
2026	10,067	3,445	13,512	115,566,925	41,806,713	157,373,638
2027	9,681	3,901	13,582	116,109,363	48,439,038	164,548,401
2028	9,298	4,324	13,622	116,385,271	54,804,676	171,189,947
2029	8,917	4,733	13,650	116,321,775	60,987,492	177,309,267
2030	8,535	5,152	13,687	116,249,260	67,790,544	184,039,804

[1] Includes spouses of retirees.

Exhibit C: Determination of 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.

		Original Amount	Percent Deferred	Unrecognized Amount	
1.	Market value of assets (for Retirement and Health Subsidy Benefits)				$2,303,713,346
2.	Calculation of unrecognized return[1]	Original Amount	Percent Deferred	Unrecognized Amount	
	a. Year ended June 30, 2020	-$72,596,502	80%	-58,077,203	
	b. Year ended June 30, 2019	-16,517,875	60%	-9,910,725	
	c. Year ended June 30, 2018	35,065,044	40%	14,026,018	
	d. Year ended June 30, 2017	96,241,076	20%	19,248,215	
	e. Year ended June 30, 2016	-111,317,036	0%	0	
3.	Total unrecognized return[2]				-$34,713,695
4.	Actuarial value: (1) - (3)				$2,338,427,041
5.	Actuarial value as a percentage of market value: (4) ÷ (1)				101.51%

[1] Total return minus expected return on a market value basis.

[2] Deferred return as of June 30, 2020 recognized in each of the next 4 years:

(a) Amount recognized during 2020-2021	$8,438,349
(b) Amount recognized during 2021-2022	-10,809,867
(c) Amount recognized during 2022-2023	-17,822,875
(d) Amount recognized during 2023-2024	-14,519,302
(e) Total	-$34,713,695

Section 4: Actuarial Valuation Basis

Exhibit I: Summary of Supplementary Information

Valuation date	June 30, 2020
Actuarial cost method	Entry age, level percent of pay
Amortization method	30-year amortization closed, level percent of pay
Remaining amortization period	Market Value of Assets (MVA) less unrecognized returns. Unrecognized returns are equal to the difference between the actual market return and the expected return on the market value, and are recognized over a five-year period..
Actuarial assumptions:	
Investment rate of return	7.00%
Inflation rate	2.75%
Projected salary increases	3.25%, plus merit and promotional increases, shown in Exhibit II.
Non-Medicare cost trend rate[1]	6.75%, graded down to an ultimate rate of 4.50% over 9 years
Medicare cost trend rate[1]	6.25%, graded down to an ultimate rate of 4.50% over 7 years
Medicare cost trend rate	4.00%
Medicare Part B subsidy costs trend rate	4.50%

Plan membership — Excluding retirees and beneficiaries not receiving subsidy:	June 30, 2020	June 30, 2019
Current retirees[2] and beneficiaries receiving dental and/or medical subsidy	8,321	8,253
Current active participants	10,778	10,362
Total	19,099	18,615

[1] In addition, we have reduced the first-year trend rates to reflect the estimated impact of the repeal of the Health Insurance Tax (HIT). The weighted average decrease was 0.85% for non-Medicare and 1.95% for Medicare health plans.

[2] Excludes 3,703 and 3,649 spouses from the June 30, 2020 and 2019 valuations, respectively.

Exhibit II: Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2015 through June 30, 2018 Actuarial Experience Study dated June 12, 2019. Following the most recent experience study, the Retirement Board adopted benefit-weighted tables for the Retirement Plan. For the OPEB Plan, we will continue to use headcount-weighted mortality tables, as benefits do not vary by salary as in the OPEB Plan. The information and analysis used in selecting health-related assumptions is shown in our assumptions letter dated October 2, 2020. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both Tier 1 and Tier 2 employees.
Economic Assumptions	
Net Investment Return	7.00%, net of investment expenses.
Administration Expenses	No administrative expenses were valued separately from the claim costs.
Salary Increases:	The annual rate of compensation Increase includes inflation at 2.75%, plus "across the board" salary increases of 0.50% per year, plus the following merit and promotional increases:

Years of Service	Rate (%)
Less than 1	7.00
1 – 2	7.00
2 – 3	6.50
3 – 4	5.25
4 – 5	3.75
5 – 6	2.75
6 – 7	2.25
7 – 8	2.00
8 – 9	1.70
9 – 10	1.60
10 – 11	1.50
11 – 12	1.45
12 – 13	1.40
13 – 14	1.35
14 – 15	1.30
15 & over	1.25

Demographic Assumptions	
Post-Retirement Mortality Rates	*Service Retirement and Disability Retirement* • Pub-2010 General Healthy Retiree Headcount-Weighted Above-Median Mortality Table (separate tables for males and females) times 105% for males and 100% for females, projected generationally with the two-dimensional mortality improvement scale MP-2018. *Beneficiaries* • Pub-2010 General Healthy Retiree Headcount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2018. The Pub-2010 mortality tables and adjustments as shown above reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.
Pre-Retirement Mortality	Pub-2010 General Employee Headcount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2018.

	Rate (%)	
Age	**Male**	**Female**
25	0.027	0.011
30	0.035	0.016
35	0.046	0.024
40	0.063	0.036
45	0.091	0.054
50	0.137	0.082
55	0.203	0.120
60	0.292	0.177
65	0.421	0.275

Note that generational projections beyond the base year (2010) are not reflected in the above mortality rates.

Disability Incidence Rate

	Disability Incidence Rate (%)	
Age	**Male**	**Female**
25	0.006	0.000
30	0.012	0.006
35	0.012	0.036
40	0.018	0.072
45	0.030	0.102
50	0.054	0.138
55	0.126	0.168

Termination Rates

Total Termination	
Years of Service	**Rate (%)**
Less than 1	10.00
1 – 2	5.25
2 – 3	3.75
3 – 4	3.50
4 – 5	2.50
5 – 6	2.00
6 – 7	1.50
7 – 8	1.50
8 – 9	1.50
9 – 10	1.00
10 – 20	0.75
20 & over	0.50

Retirement Rates

	Rate (%)			
	Tier 1		Tier 2	
Age	Under 30 Years of Service	30 or More Years of Service	Under 30 Years of Service	30 or More Years of Service
50	0.00	1.00	0.00	0.00
51	0.00	0.00	0.00	0.00
52	0.00	0.00	0.00	0.00
53	0.00	0.00	0.00	0.00
54	0.00	0.00	0.00	0.00
55	4.25	27.00	0.00	25.00
56	2.00	20.00	0.00	14.00
57	2.50	17.50	0.00	13.00
58	3.50	17.50	0.00	13.00
59	3.50	17.50	0.00	13.00
60	5.50	22.00	5.50	17.50
61	6.50	22.00	3.50	10.00
62	7.00	22.00	2.50	10.00
63	8.00	25.00	20.00	25.00
64	8.50	27.00	12.00	25.00
65	11.50	30.00	11.00	28.00
66	12.00	30.00	11.00	28.00
67	12.50	30.00	12.00	28.00
68	13.00	30.00	12.50	28.00
69	17.00	30.00	15.00	28.00
70	22.00	25.00	50.00	50.00
71	22.00	25.00	50.00	50.00
72	22.00	25.00	50.00	50.00
73	22.00	25.00	50.00	50.00
74	22.00	25.00	50.00	50.00
75 & Over	100.00	100.00	100.00	100.00

Section 4: Actuarial Valuation Basis

Unknown Data for Members	Same as those exhibited by members are similar known characteristics. If not specified, members are assumed to be male.
Data Adjustments	Data as of March 31 has been adjusted to June 30 by adding three months of age and, for active employees, three months of service.
Percent Married/Domestic Partner	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.
Age of Spouse	Husbands are assumed to be 2 years older than female members. Wives are assumed to be 2 years younger than male members.
Future Benefit Accruals	1.0 year of service per year.
Additional Service Accrual	Tier 1 members are assumed to purchase an additional 0.07 years of service per year. Tier 2 members are assumed to purchase an additional 0.02 years of service per year. These service purchases exclude those priced at full actuarial cost.
Participation	95% 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**.
Implicit Subsidy	None. Premiums paid by the retirees reflect rates underwritten for retirees only.

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 26 are applied to the premiums shown on pages 25 and 26 to calculate the age-based costs.

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, 2020 were assumed as shown below:

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

Carrier	Election Percent (%)	Single Party Premium
United Concordia DHMO	15	$18.88
United Concordia PPO	65	37.58
IBEW Local 18	20	121.55

The maximum monthly dental subsidy is $37.58, except for Local 18 with a maximum of $121.55.

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

Medical Annual Subsidy

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, 2020.

Under Age 65

Carrier	Assumed Election Percent	Single Party Premium	Participant +1 Both Under 65
Kaiser	50.0	$910.63	$1,821.26
United Health Care Option A	10.0	1,398.63	2,797.33
Blue Cross HMO	25.0	1,586.55	1,854.80
United Health Care HMO	5.0	1,646.30	3,397.40
Blue Cross PPO	5.0	1,775.46	2,224.92
United Health Care Option C	5.0	944.76	1,889.55

Per Capita Cost Development (continued)

Age 65 and Older

Carrier	Assumed Election Percent	Single Party Premium	Participant +1 Both Under 65
Kaiser Senior Advantage	55.0	$341.73	$683.46
United Health Care Option A	25.0	491.05	982.10
United Health Care Medicare Advantage	10.0	452.52	905.04
Senior Dimensions	2.5	265.63	531.26
United Health Care Option B	2.5	410.57	821.14
Blue Cross HMO	5.0	1,052.88	1,624.21
Medicare Part B	100.0	148.95	297.90

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

Applied to Per Capita Costs for under Age 65

	Retiree		Spouse	
Age	Male	Female	Male	Female
55	0.9056	0.9350	0.7127	0.8072
60	1.0755	1.0078	0.9541	0.9363
64	1.2339	1.0691	1.2045	1.0538
65	0.9129	0.7760	0.9129	0.7760
70	1.0581	0.8362	1.0581	0.8362
75	1.1402	0.9001	1.1402	0.9001
80+	1.2279	0.9704	1.2279	0.9704

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, 2021 through June 30, 2022 (set equal to the two-party, under-65 Kaiser premium) would be determined with the following formula:

[$1,821.26 x (1 + 6.75% - 0.85%)] = $1,928.71

Year Ending June 30	Non-Medicare	Medicare	Medicare Part B	Dental
2021	6.75%[1]	6.25%[1]	4.50%	4.00%
2022	6.50	6.00	4.50	4.00
2023	6.25	5.75	4.50	4.00
2024	6.00	5.50	4.50	4.00
2025	5.75	5.25	4.50	4.00
2026	5.50	5.00	4.50	4.00
2027	5.25	4.75	4.50	4.00
2028	5.00	4.50	4.50	4.00
2029	4.75	4.50	4.50	4.00
2030 & Later	4.50	4.50	4.50	4.00

[1] Before reflecting additional estimated decreases of 0.85% (non-Medicare) and 1.95% (Medicare) from the repeal of the Health Insurance Tax (HIT).

Impact of Affordable Care Act:	In the prior valuation, we included the impact of the projected excise tax ("Cadillac Tax") on certain high cost medical plans beginning in 2022 as prescribed by the Affordable Care Act (ACA) and related statutes. Subsequent to the June 30, 2019 valuation, the excise tax was repealed and is no longer reflected.
Assumption Changes Since Prior Valuation:	The following assumptions were changed since the prior valuation: • Updated per capita costs. • Updated medical premium and subsidy trend. • Updated assumed age difference for covered spouses.

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.
Tier 1	All members hired before January 1, 2014.
Tier 2	All members hired on or after January 1, 2014.
Age & Service Requirement:	Eligible for minimum pension from the Retirement Plan as follows:
Tier 1	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.
Tier 2	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.

Benefit Types:

The maximum monthly dental subsidy (for Tiers 1 and 2) is $37.58, except for Local 18 with a maximum of $121.55.

The DWP medical premium 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

	Years of Service				
Age at Retirement	**10**	**15**	**20**	**25**	**30**
55	$364	$729	$1,093	$1,457	$1,821
56	371	742	1,113	1,484	1,821
57	378	755	1,132	1,510	1,821
58	384	768	1,152	1,536	1,821
59	391	782	1,172	1,563	1,821
60	397	795	1,192	1,589	1,821
61	404	808	1,212	1,616	1,821
62	411	821	1,232	1,642	1,821
63	417	835	1,252	1,669	1,821
64	424	848	1,272	1,695	1,821
65	431	861	1,291	1,722	1,821

Tier 2

	Years of Service				
Age at Retirement	**10**	**15**	**20**	**25**	**30**
55	$182	$364	$546	$729	$911
56	185	371	556	742	911
57	189	378	566	755	911
58	192	384	576	768	911
59	195	391	586	782	911
60	199	397	596	795	911
61	202	404	606	808	911
62	205	411	616	821	911
63	209	417	626	835	911
64	212	424	636	848	911
65	215	430	646	861	911

As shown, the maximum possible subsidy is $1,821 and $911 for Tier 1 and 2, respectively. Subsidies may increase until age at retirement reaches 80

Section 4: Actuarial Valuation Basis

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:	None.

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: **Investment return** — the rate of investment yield that the Plan will earn over the long-term future; **Mortality rates** — the death rates of employees and pensioners; life expectancy is based on these rates; **Retirement rates** — the rate or probability of retirement at a given age; **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.
Actuarial Value of Assets (AVA)	The value of assets used by the actuary in the valution. 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.

Section 4: Actuarial Valuation Basis

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.
Employer Contributions	An employer has contributed to an OPEB plan if the employer has (a) provided benefits directly to retired plan members or their beneficiaries, (b) paid insurance premiums to insure the payment of benefits, or (c) irrevocably transferred assets to a qualifying trust, or equivalent arrangement, in which plan assets are dedicated to providing benefits to retirees and their beneficiaries in accordance with the terms of the plan and are legally protected from creditors of the employer(s) or plan administrator

5660947v5/04994.012