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

Governmental Accounting Standards Board Statement 74 (GAS 74) Actuarial Valuation for the Death Benefit Fund

As of June 30, 2020

- Family Death Benefit Allowance Fund
- Supplemental Family Death Benefit Allowance Fund
- Insured Lives Portion of the Death Benefit Fund

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, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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October 19, 2020

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) 74 Actuarial Valuation of the Death Benefit Fund as of June 30, 2020. It contains various information that will need to be disclosed in order to comply with GAS 74.

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 Eva Yum, FSA, 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

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

Eva Yum, FSA, MAAA, EA
Senior Actuary

JAC/jl

Table of Contents

Segal

Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present certain disclosure information required by Governmental Accounting Standards (GAS) 74 for the Water and Power Employees' Death Benefit Fund as of June 30, 2020. This valuation is based on:

- The benefit provisions of the Fund, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired and disabled members as of March 31, 2020, provided by the Retirement Office;
- The assets of the Fund as of June 30, 2020, provided by the Retirement Office;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the July 1, 2020 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the July 1, 2020 valuation.

General observations on GAS 74 actuarial valuation

1. The Governmental Accounting Standards Board (GASB) rules only define OPEB liability and expense for financial reporting purposes, and do not apply to contribution amounts for OPEB funding purposes. Employers and plans should develop and adopt funding policies under current practices.
2. The Total OPEB Liability (TOL) is determined using the Entry Age actuarial cost method as specified by GASB and the same 3.50% per year expected return on Fund assets as WPERP uses for funding of the Death Benefit Fund.
3. The Net OPEB Liability (NOL) is equal to the difference between the TOL and the Plan Fiduciary Net Position. The Plan Fiduciary Net Position is equal to the market value of assets and therefore, the NOL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) calculated on a market value basis. The NOL reflects all investment gains and losses as of the measurement date.

Highlights of the valuation

1. For the June 30, 2020 and June 30, 2019 measurements, we used assumptions and methods consistent with those used by the Retirement Plan, with the exception of a 3.50% discount rate assumption and additional assumptions regarding family composition for the Family Death Benefit and Supplemental Family Death Benefit. The 3.50% discount rate is based on the Death Benefit Fund's current target asset allocation that is virtually all fixed income investments. It reflects expected real returns for that asset class as well as the 2.75% inflation assumption for the July 1, 2020 and July 1, 2019 valuation reports.
2. The NOL decreased from $105.5 million as of June 30, 2019 to $96.4 million as of June 30, 2020 primarily due to the favorable actuarial experience and the 8.82% return on the market value of assets during 2019/2020 (that was more than the assumed return of 3.50%). Changes in these values during the last two fiscal years ending June 30, 2019 and June 30, 2020 can be found in Section 2, Schedule of changes in Net OPEB Liability on page 12.
3. The NOLs measured as of June 30, 2020 and 2019 have been determined from the actuarial valuations as of July 1, 2020 and July 1, 2019, respectively.
4. The discount rate used to determine the TOL and NOL as of June 30, 2020 and 2019 was 3.50%. Details on the derivation of the discount rate as of June 30, 2020 can be found in Section 3, Appendix A. Various other information that is required to be disclosed can be found throughout Section 2. Actuarial assumptions and methods can be found in the Actuarial Assumptions and Methods subsection in Section 2.
5. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2020. Due to the COVID-19 pandemic, market conditions have changed 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. Moreover, this actuarial valuation is based on Plan data as of March 31, 2020 (adjusted to June 30, 2020 by adding 3 months of age, service and interest on contribution balance, and increasing benefit by the assumed July 1 COLA for members in pay status) and it does not include any short-term or long-term impacts on mortality of the covered population since March 31, 2020, except for actual death benefit payments that are reflected in the plan assets as of June 30, 2020. While it is impossible to determine how the pandemic will continue to affect market conditions 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 key valuation results

Measurement Date	June 30, 2020	June 30, 2019
Disclosure elements for fiscal year ending June 30:		
Service Cost[1]	$4,716,844	$4,779,848
Total OPEB Liability	133,737,063	134,257,596
Plan Fiduciary Net Position[2]	37,364,822	28,806,740
Net OPEB Liability	96,372,241	105,450,856
Schedule of contributions for fiscal year ending June 30:		
Actuarially determined contributions[3]	$13,334,780	$7,259,955
Actual contributions	13,299,775	7,259,955
Contribution deficiency (excess)	35,005	0
Demographic data for plan year ending June 30:		
Number of beneficiaries[4]	88	90
Number of retired members	7,472	7,355
Vested terminated members[5]	619	630
Number of active members[6]	10,778	10,362
Key assumptions as of June 30:		
Discount rate	3.50%	3.50%
Inflation rate	2.75%	2.75%
Projected salary increases[7]	4.50% to 10.25%; varying by service, including inflation	4.50% to 10.25%; varying by service, including inflation

1 The service cost is always based on the previous year's assumptions, meaning that the June 30, 2020 and June 30, 2019 measurement values are based on the assumptions shown as of July 1, 2019 and July 1, 2018, respectively. The key assumptions in the July 1, 2018 valuation were as follows:

Investment rate of return:	3.50%
Inflation rate:	3.00%
Projected salary increases:	4.50% to 10.00%, varying by service, including inflation.

2 Based on preliminary unaudited financial statements as of June 30, 2020.

3 Starting in 2020, the actuarially determined contribution is determined based on actual covered payroll reported by the Retirement Office.

4 Receiving Family Death or Supplemental Family Death benefits.

5 Includes members receiving Permanent Total Disability (PTD) benefits. Excludes terminated members with less than five years of service who are not eligible for death benefits.

6 Includes 1,524 and 1,789 active members who have Supplemental Family Death Benefit coverage for 2020 and 2019, respectively.

7 Includes inflation at 2.75% per year plus real across-the-board salary increases of 0.50% plus merit and promotion increases as of June 30, 2020 and 2019.

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 (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan provisions.
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 measurement 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, termination, 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. 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: Actuarial Valuation 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 the WPERP 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 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.

Section 2: GAS 74 Information

General information about the OPEB 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, 2020, the members of the Death Benefit Fund consisted of the following:

Beneficiaries currently receiving benefits from Death Benefit Fund	88
Retired members currently receiving benefits from Retirement Plan	7,472
Vested terminated members entitled to, but not yet receiving benefits[1]	619
Active members	10,778
Total	18,957

[1] Includes members receiving Permanent Total Disability (PTD) benefits. Excludes terminated members with less than five years of service who are not eligible for death benefits.

Benefits provided. The WPERP Death Benefit Fund pays death benefits to the beneficiaries of eligible employees. Generally, to be eligible for the Family Death Benefit allowance, an employee must be a full member of WPERP and contributing to WPERP at the time of death. If death occurs after retirement, the retired member must be receiving a monthly retirement allowance from WPERP, and had a least five years of Department Service at retirement. The Family Death Benefit program pays a monthly allowance of $416 to the surviving spouse of a member with minor (or disabled) children plus $416 for each minor (or disabled) child up to a maximum monthly allowance of $1,170. In addition, the spouse's portion will not be paid if the spouse is receiving a Survivor's Optional Death Benefit Allowance or an Eligible Spouse Allowance from the Retirement Plan.

Section 2: GAS 74 Information

The Supplemental Family Death program is similar, but is optional and subject to making additional member contributions. The Supplemental Family Death Benefit program pays a monthly allowance of $520 for each surviving spouse or child, in addition to the amounts payable from the Family Death Benefit program, subject to a maximum of $1,066 for the additional benefits.

The Insured Lives Death Benefit Fund for Contributing Members provides death benefits to employees that die while employed by the Department. Generally, to be eligible, an employee must be a full member of WPERP and contributing to WPERP at time of death. The benefit paid from the Death Benefit Fund is a single sum that is equal to 14 times the member's monthly compensation with no maximum.

The Insured Lives Death Benefit Fund for Noncontributing Members provides death benefits to employees that were employed by the Department for at least five years and death occurred after retirement. The death benefit is paid in a single sum that is equal to the lesser of 14 times the member's Full Retirement Allowance or $20,000.

The LADWP contributes to the Death Benefit Fund 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 review of the death benefit fund. The employer and member contribution rates as of June 30, 2020 are as follows:

		Members	
	Department	**Active**	**Retired**
Total Death Benefit Fund	1.18% of payroll		
Family Death Benefit		N/A	N/A
Supplemental Family Death Benefit		$2.25 biweekly	$4.90 monthly
Insured Lives:			
Contributing		$1.00 biweekly	N/A
Noncontributing		N/A	N/A

Net OPEB Liability

Measurement Date	**June 30, 2020**	**June 30, 2019**
Components of the Net OPEB Liability		
Total OPEB Liability	$133,737,063	$134,257,596
Plan Fiduciary Net Position	-37,364,822	-28,806,740
Net OPEB Liability	$96,372,241	$105,450,856
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	27.94%	21.46%

The Net OPEB Liability (NOL) was measured as of June 30, 2020 and 2019 and determined based upon the Plan Fiduciary Net Position (plan assets) and Total OPEB Liability (TOL) from actuarial valuations as of July 1, 2020 and 2019, respectively.

Plan provisions. The plan provisions used in the measurement of the NOL are the same as those described previously.

Actuarial assumptions. The TOL as of June 30, 2020 and 2019 were determined by actuarial valuations as of July 1, 2020 and 2019, respectively. The actuarial assumptions used in the June 30, 2020 measurement were based on the results of an experience study for the period from July 1, 2015 through June 30, 2018. They are the same as the assumptions used in the July 1, 2020 actuarial valuation for the Retirement Plan, with the exception of a 3.50% investment return assumption and additional assumptions regarding family composition for the Family Death Benefit and Supplemental Family Death Benefit. In particular, the following assumptions were applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	4.50% to 10.25%, vary by service, including inflation
Investment rate of return	3.50%, net of investment expense, including inflation
Other assumptions:	Same as those described in the Actuarial assumptions and Methods subsection in Section 2.

Section 2: GAS 74 Information

The actuarial assumptions used in the June 30, 2019 measurement were based on the results of an experience study for the period from July 1, 2015 through June 30, 2018. They are the same as the assumptions used in the July 1, 2019 actuarial valuation for the Retirement Plan, with the exception of a 3.50% investment return assumption and additional assumptions regarding family composition for the Family Death Benefit and Supplemental Family Death Benefit. In particular, the following assumptions were applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	4.50% to 10.25%, vary by service, including inflation
Investment rate of return	3.50%, net of investment expense, including inflation
Other assumptions:	Same as those described in the Actuarial assumptions and Methods subsection in Section 2.

Determination of discount rate and investment rates of return

The long-term expected rate of return on OPEB plan investments was determined in 2019 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. This information is 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 as of June 30, 2020 are summarized in the following table. This information will change every three years based on the actuarial experience study.

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Fixed Income	96%	1.42%
Cash and Cash Equivalents	4%	0.25%
Total	100%	

Discount rate: The discount rate used to measure the TOL was 3.50% as of June 30, 2020 and June 30, 2019, respectively. The projection of cash flows used to determine the June 30, 2020 discount rate assumed 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 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 the Death Benefit Fund's investments was applied to all periods of projected benefit payments to determine the TOL as of June 30, 2020.

A “crossover test” was not explicitly performed as of June 30, 2019 since the municipal bond rate as of June 30, 2019 was 3.50% which was equal to the 3.50% long-term expected rate of return on OPEB plan investments. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the TOL as of June 30, 2019.

Discount rate sensitivity

Sensitivity of the Net OPEB Liability to changes in the discount rate. The following presents the NOL of the Plan as of June 30, 2020, calculated using the discount rate of 3.50%, as well as what the Plan NOL would be if it were calculated using a discount rate that is 1-percentage-point lower (2.50%) or 1-percentage-point higher (4.50%) than the current rate:

	1% Decrease (2.50%)	Current Discount Rate (3.50%)	1% Increase (4.50%)
Net OPEB Liability as of June 30, 2020	$117,812,862	$96,372,241	$79,310,994

Since there is no trend rate assumption used in valuing these benefits, the NOL is unaffected by any changes in trend rates.

Schedule of changes in Net OPEB Liability

Measurement Date	June 30, 2020	June 30, 2019
Total OPEB Liability		
• Service Cost	$4,716,844	$4,779,848
• Interest	4,725,458	5,058,685
• Change of benefit terms	0	0
• Differences between expected and actual experience	-2,040,143	485,084
• Changes of assumptions	0	-11,703,994
• Benefit payments	-7,922,692	-8,232,053
Net change in Total OPEB Liability	**-$520,533**	**-$9,612,430**
Total OPEB Liability – beginning	**134,257,596**	**143,870,026**
Total OPEB Liability – ending (a)	**$133,737,063**	**$134,257,596**
Plan Fiduciary Net Position		
• Contributions – employer (including those for administrative expenses)	$14,908,884	$8,777,581
• Contributions – employee	384,893	358,073
• Net investment income	2,793,526	2,292,799
• Benefit payments	-7,922,692	-8,232,053
• Administrative expense	-1,606,529	-1,599,880
Net change in Plan Fiduciary Net Position	**$8,558,082**	**$1,596,520**
Plan Fiduciary Net Position – beginning	**28,806,740**	**27,210,220**
Plan Fiduciary Net Position – ending (b)	**$37,364,822**	**$28,806,740**
Net OPEB Liability – ending (a) – (b)	**$96,372,241**	**$105,450,856**
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	**27.94%**	**21.46%**
Covered payroll	**$1,130,066,141**	**$1,028,212,002**
Plan Net OPEB Liability as percentage of covered payroll	**8.53%**	**10.26%**

Schedule of Employer Contributions – Last Five Fiscal Years

Year Ended June 30	Actuarially Determined Contributions[1,2]	Contributions in Relation to the Actuarially Determined Contributions[1]	Contribution Deficiency / (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2016	$7,206,780	$7,206,780	$0	$861,818,854	0.84%
2017	7,137,953	7,137,953	0	892,332,196	0.80%
2018	7,137,211	7,137,211	0	953,635,670	0.75%
2019	7,259,955	7,259,955	0	1,028,212,002	0.71%
2020	13,334,780	13,299,775	35,005	1,130,066,141	1.18%

See accompanying notes to this schedule on the next page.

[1] Excludes employer contributions towards administrative expenses.

[2] Starting in 2020, the actuarially determined contribution is determined based on actual covered payroll reported by the Retirement Office.

Notes to Schedule:

Methods and assumptions used to establish "actuarially determined contribution" (ADC) 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
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 and expected returns on a market value basis and is recognized over a five-year period. Prior to the July 1, 2020 valuation, as directed by the Retirement Office, the actuarial value of assets was reduced by 1% as an amount classified as a non-valuation reserve to develop the net actuarial value of assets.
Amortization Method	Level dollar amortization
Remaining amortization period	The July 1, 2019 Unfunded Actuarial Accrued Liability is amortized over a fifteen-year period commencing July 1, 2019 (fully amortized as of July 1, 2034). Any subsequent changes in Surplus or Unfunded Actuarial Accrued Liability are amortized over separate fifteen-year periods. All amortization amounts are determined in equal dollar amounts over the amortization period. The Board may, by resolution, adopt a separate period of not more than thirty years to amortize the change in Surplus or Unfunded Actuarial Accrued Liability resulting from an unusual event, plan amendment or change in assumptions or methods.

Actuarial assumptions:

Valuation Date:	**July 1, 2020 Valuation Date**	**July 1, 2019 Valuation Date**
Investment rate of return:	3.50%, net of investment expenses	3.50%, net of investment expenses
Inflation rate:	2.75%	2.75%
Real across-the-board salary increase:	0.50%	0.50%
Projected salary increases:[1]	4.50% to 10.25%	4.50% to 10.25%
Cost of living adjustments:	2.75% (actual increases are contingent upon CPI increases with a 3.00% maximum for Tier 1, 2.00% maximum for Tier 2)	2.75% (actual increases are contingent upon CPI increases with a 3.00% maximum for Tier 1, 2.00% maximum for Tier 2)
Other assumptions:	Same as those used in the July 1, 2020 funding actuarial valuation	Same as those used in the July 1, 2019 funding actuarial valuation

Actuarial Assumptions and Methods

Actuarial assumptions:

Net Investment Return:	3.50%, net of investment expenses.
Family Composition at Death for Active Members:	(see table below)

Plan	Family Death Benefits	Supplemental Family Death Benefit
Not Married; No Children	20%	0%
Not Married; One Child	5%	15%
Not Married; 2+ Children	7%	17%
Married; No Children	16%	0%
Married; One Child	15%	22%
Married; 2+ Children	30%	39%
Married; One Disabled Child	7%	7%
1st Child's Age	10	10
2nd Child's Age	8	8

No benefits are assumed to be payable upon deaths of active members age 55 or over or deaths of inactive vested members (receiving a Permanent Total Disability benefit) or retirees at any age.

Healthy child payments are assumed to end when the child reaches age 18. Disabled child payments are assumed to continue for life.

Other Actuarial Assumptions:	Same as those used in July 1, 2020 actuarial valuation report for the Retirement Plan
Actuarial cost method:	Entry Age Actuarial Cost Method.
Changes in Actuarial Assumptions:	There have been no changes in actuarial assumptions since the last valuation.

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.

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Section 3: Appendix

Appendix A: Projection of Plan Fiduciary Net Position for use in the Calculation of Discount Rate as of June 30, 2020

Year Beginning July 1,	Projected Beginning Plan Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Investment Earnings (d)	Projected Ending Plan Fiduciary Net Position (e) = (a) + (b) - (c) + (d)
2020	$37,364,822	$13,526,789	$7,374,232	$1,415,439	$44,932,818
2021	44,932,818	13,389,682	7,418,820	1,677,139	52,580,819
2022	52,580,819	13,263,702	7,484,777	1,941,460	60,301,203
2023	60,301,203	13,131,350	7,584,229	2,207,617	68,055,941
2024	68,055,941	13,002,876	7,647,787	2,475,672	75,886,703
2025	75,886,703	12,898,556	7,753,212	2,746,078	83,778,124
2026	83,778,124	12,794,642	7,897,288	3,017,938	91,693,416
2027	91,693,416	12,695,923	8,030,857	3,290,908	99,649,390
2028	99,649,390	12,593,075	8,157,592	3,565,350	107,650,223
2029	107,650,223	12,477,446	8,289,049	3,841,055	115,679,675
2045	129,196,515	1,622,492	8,935,084	4,393,908	126,277,831
2046	126,277,831	1,469,728	8,863,073	4,290,341	123,174,826
2047	123,174,826	1,309,277	8,758,907	4,180,750	119,905,946
2048	119,905,946	1,138,832	8,626,497	4,065,674	116,483,956
2049	116,483,956	955,726	8,457,743	3,945,653	112,927,592
2094	2,859,350	0	562,503	90,233	2,387,081
2095	2,387,081	0	462,446	75,455	2,000,090
2096	2,000,090	0	373,731	63,463	1,689,822
2097	1,689,822	0	296,571	53,954	1,447,204
2098	1,447,204	0	230,725	46,614	1,263,093
2119	1,422,614	0	1	49,791	1,472,404
2120	1,472,404				
2120	Discounted Value: 47,205 *				

* $1,472,404 when discounted with interest at the rate of 3.50% per annum has a value of $47,205 as of June 30, 2020.

Notes

1. Amounts may not total exactly due to rounding.
2. Various years have been omitted from this table.
3. Column (a): Except for the "discounted value" shown for 2120, none of the projected beginning Plan 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 contributions based on closed group projections (based on covered active members as of June 30, 2020), 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 paragraphs 43 - 44 of GASB Statement No. 74, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of June 30, 2020. The projected benefit payments reflect the cost of living increase assumptions used in the June 30, 2020 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 3.50% 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 Appendix, the Plan 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 3.50% per annum was applied to all periods of projected benefit payments to determine the Total OPEB Liability as of June 30, 2020 shown earlier in this report, pursuant to paragraph 48 of GASB Statement No. 74.
9. This projection is based on a model developed by our Actuarial Technology and Systems unit, comprised of both actuaries and programmers. The model allows the client team, under the supervision of the responsible actuary, control over the entry of future expected contribution income, benefit payments and administrative expenses. The projection of fiduciary net position and the discounting of benefits is part of the model.

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