



The Water and Power Employees' Retirement Disability and Death Benefit Insurance Plan

Review of the Death Benefit Fund as of July 1, 2018

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

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January 4, 2019

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

Dear Board Members:

We are pleased to submit this review of the Family Death Benefit Allowance Fund, the Supplemental Family Death Benefit Allowance Fund, and the Insured Lives Portion of the Death Benefit Fund as of July 1, 2018. It establishes the funding requirements for fiscal year 2018-2019 and analyzes the preceding year's experience.

This review has been completed in accordance with generally accepted actuarial principles and practices. 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 review 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; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

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

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

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

By:

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SECTION 1: Review Summary for the Water and Power Employees' Death Benefit Fund

CONTRIBUTION RECOMMENDATIONS

- The following table summarizes the contribution recommendations for the Department and the members for the various Funds. We recommend decreasing the Department contribution rate for the Family Death Benefit Allowance Fund from \$1.76 to \$1.36 per month per active covered member. This recommended Department contribution would total approximately \$165,000 on an annual basis. We also recommend reducing the Department contribution rate for the Insured Lives Death Benefit Fund for Contributing Members from \$0.21 to \$0.20 per \$100 of payroll. In addition, we are recommending a decrease in the Department contribution rate for the Insured Lives Death Benefit Fund for Noncontributing Members from \$1.01 to \$0.96 per \$100 of monthly retirement benefit.

	Department	Members	
		Active	Retired and Disabled
Family Death Benefit	\$1.36 monthly per active member (\$165,000 on an annual basis)	N/A	N/A
Supplemental Family Death Benefit	N/A	\$2.25 biweekly	\$4.90 monthly
Insured Lives:			
Contributing	\$0.20 per \$100 of payroll	\$1.00 biweekly	N/A
Noncontributing	\$0.96 per \$100 of monthly retirement benefit	N/A	N/A

- The Board should consider a level cost funding approach consistent with that used by the Retirement Plan. Some of the results used to calculate a level cost contribution were already included in the Governmental Accounting Standards (GAS) Statement No. 74 valuation for financial reporting. We are available to work with the Retirement Office to bring further information on this topic to the Board.

SECTION 1: Review Summary for the Water and Power Employees' Death Benefit Fund

Important Information about Actuarial Valuations

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

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

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the Retirement Office. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the Retirement Office.
- **Actuarial assumptions** There is a reasonable range for each assumption used and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

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

- The valuation is prepared at the request of the WPERP. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- 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.

SECTION 1: Review Summary for the Water and Power Employees' Death Benefit Fund

- If WPERP is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The WPERP should look to their other advisors for expertise in these areas.

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

SECTION 2: Family Death Benefit Allowance Fund and Supplemental Family Death Benefit Allowance Fund

A. INTRODUCTION

The Family Death Benefit Allowance program was adopted under Resolution No. 470 dated December 19, 1963. The initial benefit was a monthly allowance payable to the surviving spouse of a member with minor children and was equal to \$95 plus \$96 for each minor child up to a maximum monthly allowance of \$254. The individual's benefit was increased to \$120 and the family maximum was increased to \$340 as of July 1, 1969. After 1989, these benefit levels were increased to \$160 and \$450 respectively. On February 18, 2003, the individual's benefit was raised from \$160 to \$416 and the family maximum was raised from \$450 to \$1,170. The increases were applied retroactively to July 1, 2001.

The Department pays the entire cost of the Family Death Benefit Allowance program. Due to the size of the general reserve, contributions were temporarily suspended starting January 1, 1993. The contribution was restarted effective January 1, 2016. A history of contribution rates for this Fund is displayed in Section 4, Exhibit I.

The Supplemental Family Death Benefit Allowance plan was adopted effective September 7, 1981. A monthly allowance of \$200 was provided to each surviving spouse or child, subject to a maximum of \$410 per family. On February 18, 2003, the monthly allowance was raised to \$520 for each surviving spouse or child, in addition to the amounts payable from the Family Death Benefit Allowance Fund, subject to a maximum of \$1,066 for the total of additional allowances. The increases were also applied retroactively to July 1, 2001.

Participation in the supplemental plan is optional and subject to member contributions. Please see Section 4, Exhibit I for a history of contribution rates. The Department will only contribute as necessary to fund the benefit.

Under the funding method for the Family Death Benefit Allowance program and the Supplemental Family Death Benefit Allowance program, the total annual contribution is equal to the expected incurred claims for the coming year. This is the same method used for disability benefits and for the other death benefits. Under the funding method, no additional contributions are expected to accumulate to help cover future claims beyond those incurred during the forthcoming year.

SECTION 2: Family Death Benefit Allowance Fund and Supplemental Family Death Benefit Allowance Fund

B. REVIEW OF EXPERIENCE AND RECOMMENDATIONS

The charts that follow show a summary of the cost of the Family Death Benefit Allowance Fund and the Supplemental Family Death Benefit Allowance Fund from the inception of the plans to June 30, 2018.

In the early years of the operation of the Family Death Benefit Allowance, the Department contribution rate was somewhat low. For this reason, a deficit in the contribution account gradually accumulated. Also, the extension of the \$120 benefit level in 1969 to current recipients temporarily compounded the deficit and produced abnormally high costs per member. To reverse these trends, a \$3.00 contribution rate was adopted in 1973 but was decreased to \$2.50 in 1981. Substantial reserves were built up so that contributions were suspended in 1993.

The experience table on pages 4 and 5 shows the cumulative monthly cost per active covered member since 1970. In years 1970 through 1989 the Family Death Benefit level was \$120. After 1989, the benefit level increased to \$160. On February 18, 2003, the benefit level was increased to \$416 per person, subject to a maximum of \$1,170 per family. The increase was retroactive to July 1, 2001. The current cumulative experience in the table has been adjusted as if the benefit had always been \$416. The cumulative cost since 1970 of a \$416 benefit level is now \$4.58.

CHART 1

Family Death Benefit and Supplemental Family Death Benefit Allowance Fund

	<u>June 30, 2018</u>	<u>June 30, 2017</u>
<u>Family Death Benefit</u>		
Reserve for benefits granted	\$2,801,523	\$3,156,025
Contribution account	<u>977,907</u>	<u>842,836</u>
Subtotal	\$3,779,430	\$3,998,861
<u>Supplemental Family Death Benefit</u>		
Reserve for benefits granted	\$1,140,295	\$1,036,311
Contribution account	<u>6,276,277</u>	<u>6,018,747</u>
Subtotal	\$7,416,572	\$7,055,058
<u>Family Death Benefit and Supplemental Family Death Benefit</u>		
Reserve for benefits granted	\$3,941,818	\$4,192,336
Contribution account	<u>7,254,184</u>	<u>6,861,583</u>
Grand Total	\$11,196,002	\$11,053,919

SECTION 2: Family Death Benefit Allowance Fund and Supplemental Family Death Benefit Allowance Fund

For the Family Death Benefit Allowance program, the Plan's funding goal is to have 20% of the reserve for benefits granted, or \$560,305 (20% of \$2,801,523), in the contribution account. The actual contribution account of \$977,907 is more than the target.

This review also shows the experience for the Supplemental Family Death Benefit Allowance Fund. A stable long-term cost of this benefit is starting to emerge. On the basis of the experience of the fund, the contribution rate for the Supplemental Family Death Benefit Allowance Fund does appear to be approximately equal to the cost of the benefit (after adjusting earlier years to reflect the current benefit level payable). We will continue to monitor this in future valuations.

We recommend that the Board do the following:

1. Decrease the monthly Department contribution rate from \$1.76 to \$1.36 per active covered member. This recommended Department contribution would total approximately \$165,000 on an annual basis.
Contributing at this rate is expected to allow the contribution account to reduce gradually so as to be reasonably close to the target level in 10 years. This calculation is based on a ten-year average monthly cost of \$1.95 per active covered member.
2. Maintain the employee contribution rate to the Supplemental Family Death Benefit Allowance Fund. No Department contribution is necessary at this time.

SECTION 2: Family Death Benefit Allowance Fund and Supplemental Family Death Benefit Allowance Fund

CHART 2

Family Death Benefit Allowance Fund Costs Since 1970

Year Ending June 30	Department Contribution⁽¹⁾	Benefits Paid⁽¹⁾	Incurred Claims⁽¹⁾	Monthly Cost Per Active Covered Member	Cumulative Monthly Cost Per Active Covered Member Since 1970⁽²⁾	Contribution Account⁽¹⁾
1970	\$363,096	\$217,040	\$571,988	\$3.94	\$3.94	\$ (668,804)
1971	374,304	257,643	505,849	3.38	3.65	(796,683)
1972	374,796	687,680	378,207	2.52	3.27	(793,744)
1973	364,716	311,080	429,984	2.95	3.19	(857,180)
1974	396,721	334,840	352,399	2.66	3.10	(810,500)
1975	414,036	358,395	144,020	1.04	2.77	(527,656)
1976	396,216	349,267	275,033	2.08	2.68	(389,944)
1977	386,173	321,168	259,379	2.01	2.49	143,731
1978	386,172	305,318	196,128	1.52	2.49	349,389
1979	357,948	309,497	285,996	2.40	2.48	425,441
1980	348,545	304,798	284,255	2.45	2.48	481,694
1981	341,964	283,053	49,077	0.43	2.31	643,080
1982	294,180	267,499	85,774	0.73	2.19	868,296
1983	350,000	274,048	326,799	2.33	2.20	910,910
1984	350,000	257,921	110,795	0.79	2.10	1,087,934
1985	363,125	238,901	(25,809)	(0.18)	1.96	1,311,244
1986	370,348	234,734	41,907	0.28	1.86	1,716,681
1987	308,185	256,954	158,680	1.29	1.77	2,095,779
1988	315,468	240,469	208,955	1.66	1.76	2,453,938
1989	314,648	237,469	37,952	0.30	2.25	3,026,436
1990	310,323	319,285	226,394	1.82	2.23	3,444,701
1991	303,370	307,277	144,080	1.19	2.19	3,942,195
1992	314,800	327,945	213,107	1.69	2.17	4,450,836
1993	138,610	305,640	247,740	2.23	2.17	4,781,241
1994	0	303,760	249,738	2.03	2.17	4,943,478
1995	0	289,345	172,190	1.57	2.15	5,193,160
1996	0	275,635	87,162	0.80	2.12	5,484,570
1997	0	270,250	174,119	1.67	2.10	5,749,544
1998	0	255,710	144,186	1.44	2.13	5,173,823
1999	0	240,510	81,436	1.04	2.11	5,477,863

SECTION 2: Family Death Benefit Allowance Fund and Supplemental Family Death Benefit Allowance Fund

CHART 2 (continued)

Family Death Benefit Allowance Fund Costs Since 1970

Year Ending June 30	Department Contribution⁽¹⁾	Benefits Paid⁽¹⁾	Incurred Claims⁽¹⁾	Monthly Cost Per Active Covered Member	Cumulative Monthly Cost Per Active Covered Member Since 1970⁽²⁾	Contribution Account⁽¹⁾
2000	\$0	\$ 251,304	\$232,032	\$2.84	\$2.13	\$5,609,914
2001	0	252,315	108,792	1.25	2.11	5,910,787
2002	0	271,890	235,495	2.65	2.12	6,052,048
2003	0	1,081,801	62,037	0.67	5.40	6,423,011
2004	0	672,819	385,532	4.07	5.37	6,359,890
2005	0	669,108	356,271	3.73	5.33	6,368,082
2006	0	626,379	399,459	4.20	5.31	6,052,843
2007	0	609,538	346,865	3.62	5.27	5,947,619
2008	0	628,434	261,430	2.67	5.22	5,794,022
2009	0	564,364	86,070	0.81	5.12	5,996,936
2010	0	578,479	428,575	3.84	5.09	5,859,057
2011	0	580,313	28,599	0.26	4.98	1,904,393
2012	0	516,691	208,611	1.94	4.91	1,695,783
2013	0	457,624	266,651	2.49	4.86	1,429,131
2014	0	424,112	273,466	2.54	4.82	1,155,665
2015	0	457,002	229,101	2.07	4.76	926,564
2016	211,000	418,418	197,115	1.76	4.70	982,438
2017	193,896	449,150	361,272	3.07	4.66	842,836
2018	194,512	443,638	89,135	0.73	4.58	977,907

⁽¹⁾ Provided by retirement office. Benefits paid in 2003 included retroactive payments.

⁽²⁾ Experience for earlier years has been adjusted to reflect the benefit level payable at the end of the corresponding plan year. For example, the 2002 cumulative monthly cost reflects the 2002 benefit level for all earlier experience, while the 2003 cumulative monthly cost reflects the 2003 benefit level for all earlier experience.

SECTION 2: Family Death Benefit Allowance Fund and Supplemental Family Death Benefit Allowance Fund

CHART 3

Supplemental Family Death Benefit Allowance Fund Costs Since 1981

Year Ending June 30	Member Contribution⁽¹⁾	Department Contribution⁽¹⁾	Benefits Paid⁽¹⁾	Incurred Claims⁽¹⁾	Monthly Cost Per Active Covered Member	Cumulative Monthly Cost Per Active Covered Member Since 1981⁽²⁾	Contribution Account⁽¹⁾
1981	\$ 0	\$ 0	\$ 0	\$ 0	\$0.00	\$0.00	\$ 0
1982	13,671	5,101	0	0	0.00	0.00	18,772
1983	21,226	7,920	0	0	0.00	0.00	50,126
1984	21,080	48,410	2,000	24,723	5.74	1.43	100,057
1985	28,611	0	4,800	0	0.00	1.15	137,476
1986	48,404	0	4,800	0	0.00	0.96	198,659
1987	54,767	0	4,800	0	0.00	0.82	271,350
1988	64,647	0	7,820	39,179	2.97	1.09	318,969
1989	71,156	0	19,680	397	0.00	0.97	417,710
1990	77,032	0	17,010	0	0.00	0.87	530,857
1991	82,920	0	14,013	51,651	3.05	1.07	640,671
1992	82,819	0	24,250	0	0.00	0.98	778,171
1993	86,571	0	27,813	34,148	1.93	1.05	896,213
1994	88,580	0	43,460	0	0.00	0.98	1,060,428
1995	91,712	0	55,450	0	0.00	0.91	1,241,074
1996	92,096	0	55,033	18,189	0.97	0.92	1,436,538
1997	97,317	0	60,990	10,690	0.54	0.89	1,653,015
1998	88,986	0	52,870	13,638	0.70	0.87	1,877,926
1999	82,676	0	47,840	25,523	1.51	0.92	2,114,501
2000	81,992	0	49,450	63,652	3.66	1.11	2,369,023
2001	83,148	0	52,590	33,835	2.05	1.16	2,645,265
2002	83,248	0	58,280	82,257	4.95	1.38	2,943,731
2003	84,444	0	271,238	46,674	2.79	3.80	3,267,363
2004	82,603	0	165,929	162,149	9.50	4.10	3,614,809
2005	88,088	0	170,436	116,371	6.69	4.23	3,995,966

SECTION 2: Family Death Benefit Allowance Fund and Supplemental Family Death Benefit Allowance Fund

CHART 3 (continued)

Supplemental Family Death Benefit Allowance Fund Costs Since 1981

Year Ending June 30	Member Contribution⁽¹⁾	Department Contribution⁽¹⁾	Benefits Paid⁽¹⁾	Incurred Claims⁽¹⁾	Monthly Cost Per Active Covered Member	Cumulative Monthly Cost Per Active Covered Member Since 1981⁽²⁾	Contribution Account⁽¹⁾
2006	\$88,784	\$0	\$153,510	\$294,903	\$16.56	\$4.85 ⁽³⁾	\$4,337,758
2007	88,782	0	164,092	51,780	2.87	4.75 ⁽³⁾	4,678,699
2008	91,815	0	165,444	176,260	9.68	4.98	5,022,667
2009	89,307	0	148,722	0	0.00	4.76	5,365,241
2010	90,804	0	119,620	0	0.00	4.57	5,726,685
2011	95,952	0	107,751	0	0.00	4.38	5,303,305
2012	96,631	0	70,779	0	0.00	4.22	5,399,935
2013	96,809	0	77,820	109,043	5.17	4.26	5,387,702
2014	98,487	0	78,104	108,897	5.84	4.32	5,377,291
2015	98,520	0	91,832	18,719	1.00	4.20	5,457,092
2016	100,029	0	76,960	0	0.00	4.05	5,782,065
2017	101,599	0	91,000	70,951	3.73	4.04	6,018,747
2018	102,380	0	99,606	59,299	3.12	4.01	6,276,277

⁽¹⁾ Provided by retirement office. Benefits paid in 2003 included retroactive payments.

⁽²⁾ Experience for earlier years has been adjusted to reflect the benefit level payable at the end of the corresponding plan year. For example, the 2002 cumulative monthly cost reflects the 2002 benefit level for all earlier experience, while the 2003 cumulative monthly cost reflects the 2003 benefit level for all earlier experience.

⁽³⁾ Amount recalculated using a methodology consistent with the July 1, 2005 Review.

SECTION 3: Insured Lives Portion of the Death Benefit Fund

A. INTRODUCTION

The funding of the Insured Lives Portion of the Death Benefit is similar to that of the Family Death Benefit allowances, with the following two exceptions:

1. Unlike the Family Death Benefit payments, which may extend over future years, lump sum death benefits are settled promptly. Thus for lump sum death benefits there is little need for claim reserves, and the incurred claims for a year are taken to be the amount of paid claims.
2. Only retirees are covered for noncontributing death benefits, so the cost is paid by the Department as a monthly dollar charge per retiree per \$100 of retirement benefits.

As with the Family Death Benefit allowances, costs do not include any amounts to build up reserves for future claims; hence, if contributions were terminated in the future, the fund would not be sufficient to cover all future claims. A small claims reserve has accumulated which can help manage any potential lag time in processing current benefit payouts.

SECTION 3: Insured Lives Portion of the Death Benefit Fund

B. INSURED LIVES DEATH BENEFITS FOR CONTRIBUTING ACTIVE MEMBERS

Upon the death of an active member before retirement, the beneficiary receives any death benefit payable from the Retirement Fund, plus a benefit payable from this Death Benefit Fund in an amount equal to 14 times the member's monthly salary (or \$1,000, if greater).

Currently department contributions are \$0.21 per \$100 of covered compensation. Please see Section 4, Exhibit I for a history of contribution rates.

In Chart 4 that follows, we summarize the cost of the salary related death benefit before retirement for the last ten fiscal years.

The ten-year average annual rate of total cost of \$0.24 per \$100 of covered compensation is shown in Chart 4. We recommend a continuation of the methodology in which the general reserve target is the average of the benefits paid for the last five years, or \$2,180,947. The actual reserve as of June 30, 2018 was \$4,357,966 which is higher than the target.

We recommend reducing the Department contribution to the Contributory Death Benefit Fund from \$0.21 to \$0.20 per \$100 of payroll. Contributing at this rate is expected to allow the general reserve to be reasonably close to the target level in ten years.

SECTION 3: Insured Lives Portion of the Death Benefit Fund

CHART 4

Summary of Cost of Insured Lives Death Benefits for Contributing Members, 2009 - 2018

Year Ending June 30	Covered Payroll	Benefits Paid During Year	Total Cost Per \$100 of Covered Payroll	General Reserve
2009	\$696,704,083	\$1,512,070	\$0.22	\$3,708,088
2010	767,912,436	1,777,835	0.23	2,335,239
2011	791,760,493	1,785,250	0.23	2,191,722
2012	805,607,436	2,091,708	0.26	2,647,087
2013	817,421,028	1,977,664	0.24	3,013,166
2014	819,923,866	2,868,039	0.35	2,555,247
2015	839,213,254	1,479,924	0.18	3,440,791
2016	861,818,854	2,386,106	0.28	3,836,355
2017	892,332,196	2,080,824	0.23	3,805,713
2018	953,635,670	2,089,840	0.22	4,357,966
5-Year Average	\$873,384,768	\$2,180,947	\$0.25	N/A
10-Year Average	\$824,632,932	\$2,004,926	\$0.24	N/A

SECTION 3: Insured Lives Portion of the Death Benefit Fund

C. INSURED LIVES DEATH BENEFITS FOR NONCONTRIBUTING (RETIRED AND DISABLED) MEMBERS

In September 26, 1963, the Plan began providing for a benefit payable on the death of a retired member equal to 14 times the retired member's unmodified retirement allowance, with a minimum death benefit of \$2,000 (subsequently changed to \$3,000 if eligible for the minimum pension) and a maximum death benefit of \$10,000. Note that only retired members are covered, not spouses and beneficiaries. Contributions were increased as of July 1, 1973 to cover the cost of the benefits, and \$2,598,912 was transferred from the General Reserve – Contributing Members to the General Reserve – Noncontributing Members. The Plan was amended in December 1980 to provide a maximum death benefit of \$20,000. A history of contribution rates is given in Section 4, Exhibit I.

In Chart 5 that follows, we summarize recent costs of the retirees' death benefit.

The experience rate for 2018 is \$0.89. For this valuation, we continue to recommend basing the Department contribution rate on the ten-year average annual experience rate, which is \$1.08 as of June 30, 2018. We will review this procedure again at the next valuation.

The experience rate does not take into account the amount of interest earned on the Death Benefit fund. Interest expected to be earned on the Noncontributing Members' Reserve for the next year is \$323,268 (assuming a 3.50% investment return). This is equal to \$0.06 per \$100 of retired member payroll. After taking the interest credit into account, the net rate based on the ten years of experience amounts to \$1.02 per \$100 of retired payroll.

A previous review recommended that the reserve target be equal to the average death benefits for the last five years, currently \$4,929,317. The reserve amount is currently \$9,236,239, resulting in a target surplus of \$4,306,922.

If we further adjust the Department contributions so as to decrease the general reserve to the target level over a period of ten years, then Department contributions to the Noncontributing Death Benefit would need to decrease to \$0.96 per \$100 of retirement benefits actually paid.

We recommend that the Department contributions to the noncontributing Death Benefits be decreased from \$1.01 to \$0.96. This is expected to allow the reserve to reach the target level over a period of ten years.

SECTION 3: Insured Lives Portion of the Death Benefit Fund

CHART 5

Summary of Cost of Insured Lives Death Benefits for Noncontributing Members, 2009 - 2018

Year Ending June 30	Retirement Benefits Paid During Year	Death Benefits Paid During Year	Cost Per \$100 of Retirement Benefits	General Reserve
2009	\$363,691,635	\$4,650,282	\$1.28	\$4,658,213
2010	377,061,806	4,811,131	1.28	5,265,931
2011	396,136,140	5,360,830	1.35	5,744,571
2012	410,859,162	4,555,657	1.11	6,631,921
2013	432,738,112	4,666,084	1.08	7,177,683
2014	457,558,214	4,273,388	0.93	8,289,278
2015	480,465,024	5,419,347	1.13	7,933,897
2016	505,600,036	4,637,320	0.92	9,523,136
2017	535,914,984	5,347,036	1.00	9,447,070
2018	558,900,946	4,969,493	0.89	9,236,239
5-Year Average	\$507,687,841	\$4,929,317	\$0.97	N/A
10-Year Average	\$451,892,606	\$4,869,057	\$1.08	N/A

SECTION 4: Supplemental Information

EXHIBIT I

History of Contribution Rates

Date	Department Contribution to Family Death Benefit Allowance Fund	Members' Contribution to Insured Lives Portion of the Death Benefit Fund (Contributing Active Members)	Department Contribution to Insured Lives Portion of the Death Benefit Fund (Contributing Active Members)	Department Contribution to Insured Lives Portion of the Death Benefit Fund (Noncontributing Retired and Disabled Members)
1942		\$0.48 / \$100 of compensation	\$0.32 / \$100 of compensation	
September 26, 1963				\$23.88 / retired member each year
December 19, 1963	\$1.25 / month			
July 1, 1969	\$2.50 / month	\$0.36 / \$100	\$0.24 / \$100	
July 1, 1973	\$3.00 / month			
Fiscal year 1979 - 1980				\$23.06 / retired member each year
July 1, 1980		\$1.00 / month	Balance of \$0.60 / \$100	\$27.39 / retired member each year
September 1, 1981	\$2.50 / month			
January 9, 1984		\$1.00 / pay period		
March 1, 1984				\$3.36 / \$100 of retired member payroll
July 1, 1988			Balance of \$0.50 / \$100	
July 1, 1993	Suspended		Balance of \$0.15 / \$100	
July 1, 1994			Balance of \$0.05 / \$100	\$2.86 / \$100
March 1, 1996				\$2.35 / \$100
August 1, 1999			Suspended	\$2.00 / \$100
July 1, 2000				\$1.50 / \$100
July 1, 2001				\$1.30 / \$100
January 1, 2009				\$1.64 / \$100
January 1, 2011			\$0.29 / \$100	\$1.48 / \$100
January 1, 2012			\$0.25 / \$100	\$1.44 / \$100
January 1, 2013				\$1.35 / \$100
January 1, 2014				\$1.27 / \$100

SECTION 4: Supplemental Information

EXHIBIT I (continued)

History of Contribution Rates

Date	Department Contribution to Family Death Benefit Allowance Fund	Members' Contribution to Insured Lives Portion of the Death Benefit Fund (Contributing Active Members)	Department Contribution to Insured Lives Portion of the Death Benefit Fund (Contributing Active Members)	Department Contribution to Insured Lives Portion of the Death Benefit Fund (Noncontributing Retired and Disabled Members)
January 1, 2015				\$1.19 / \$100
January 1, 2016	\$1.91 / month		\$0.23 / \$100	\$1.14 / \$100
January 1, 2017	\$1.62 / month		\$0.22 / \$100	\$1.05 / \$100
January 1, 2018	\$1.76 / month		\$0.21 / \$100	\$1.01 / \$100

Note: Supplemental Family Death Benefit allowance plan is subject to member contributions. The initial member contribution was \$3.35 per biweekly period or \$7.28 per month if retired. This rate was decreased to \$2.25 per biweekly period or \$4.90 per month if retired.

SECTION 4: Supplemental Information

EXHIBIT II

Combined Assets

Statement of Death Benefit Fund Assets	Year Ended June 30, 2018	Year Ended June 30, 2017
Cash	\$939,600	\$960,417
Accounts receivable	1,178,351	1,022,576
Investments in bonds and mortgaged-backed securities	29,554,341	28,789,442
Short-term commercial paper	<u>248,138</u>	<u>743,931</u>
Total Assets	\$31,920,430	\$31,516,366
Accounts payable	(1,069,990)	(993,381)
Death claims in process-insured lives	<u>(3,640,220)</u>	<u>(2,938,851)</u>
Net Assets	\$27,210,220	\$27,584,134

SECTION 4: Supplemental Information

EXHIBIT III

Methods, Assumptions and Plan Summary for the Family Death Benefit Fund

Plan Year:	July 1 through June 30
Net Investment Return:	3.50%, net of investment expenses. The information and analysis used in selecting this assumption is shown in the Proposed Change in Investment Return Assumption for Death and Disability Funds letter dated May 31, 2016.
Monthly Cost Per Active Member:	\$1.95 per month (based on ten-year average monthly cost)
Definition of Active Employee:	First day of biweekly payroll period following employment for new Department employees. Immediately following transfer from other City departments.
Active Member Growth:	Number of active members is assumed to stay level each year.
Member Contribution Rate:	None
Department Contribution Rate:	Recommended monthly rate is \$1.36 per active covered member.
Funding Method:	Annual contributions equal the expected incurred claims for the coming year subject to modification by the Board's funding policy.
Funding Policy:	Recommend a contribution rate to have 20% of the reserve for allowances granted in the contribution account.
Incurred Claims:	Provided by Retirement Office.
Age and Service Requirement:	Pre-retirement death of an active member at any age who is a full member of WPERP and was contributing to WPERP. If death occurs after retirement, must be receiving a retirement monthly retirement allowance from WPERP and had at least five years of Department Service at retirement.

SECTION 4: Supplemental Information

EXHIBIT III (continued)

Methods, Assumptions and Plan Summary for the Family Death Benefit Fund

Other Requirements:

The plan provides a monthly benefit for each surviving child that is:

- the naturally or legally adopted child of the member
- is under 18 and unmarried, or
- disabled and over age 18 (only if the disability occurred before age 18) and unmarried.

Monthly Benefit:

The monthly benefit is the sum of:

- \$416 per month to each surviving child, plus
- \$416 per month to spouse (if the member's spouse has care of one or more of the member's eligible children)

limited so that the total amount payable cannot exceed \$1,170 per month. 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. The benefit is no longer payable when the member's children no longer satisfy the eligibility requirements noted above.

Changes in Actuarial Assumptions:

There have been no changes in actuarial assumptions since the prior valuation.

SECTION 4: Supplemental Information

EXHIBIT IV

Methods, Assumptions and Plan Summary for the Supplemental Family Death Benefit Fund

Plan Year:	July 1 through June 30
Net Investment Return:	3.50%, net of investment expenses. The information and analysis used in selecting this assumption is shown in the Proposed Change in Investment Return Assumption for Death and Disability Funds letter dated May 31, 2016.
Definition of Active Employee:	First day of biweekly payroll period following employment for new Department employees. Immediately following transfer from other City departments.
Member Contribution Rate:	\$2.25 per biweekly period (or \$4.90 per month if retired).
Department Contribution Rate:	The department will provide any additional funds necessary to fund the benefits.
Funding Method:	Annual contributions equal the expected incurred claims for the coming year subject to modification by the Board's funding policy.
Funding Policy:	To be established once stable annual costs are achieved.
Incurred Claims:	Provided by Retirement Office.
Age and Service Requirement:	Pre-retirement death of an active member at any age who is a full member of WPERP and was contributing to WPERP or post-retirement death of retired member receiving monthly retirement allowance from WPERP. Must be enrolled and make contributions by payroll deductions for 39 successive biweekly payroll periods (approximately 18 months) before coverage becomes effective.
Other Requirements:	The plan provides a monthly benefit for each surviving child that is: <ul style="list-style-type: none">• the naturally or legally adopted child of the member• is under 18 and unmarried, or• disabled and over age 18 (only if the disability occurred before age 18) and unmarried.

SECTION 4: Supplemental Information

EXHIBIT IV (continued)

Methods, Assumptions and Plan Summary for the Supplemental Family Death Benefit Fund

Monthly Benefit:

The monthly benefit is the sum of:

- \$520 per month to each surviving child, plus
- \$520 per month to spouse (if the member's spouse has care of one or more of the member's eligible children)

limited so that the total amount payable cannot exceed \$1,066 per month. 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. The benefit is no longer payable when the member's children no longer satisfy the eligibility requirements noted above.

Changes in Actuarial Assumptions:

There have been no changes in actuarial assumptions since the prior valuation.

SECTION 4: Supplemental Information

EXHIBIT V

Methods, Assumptions and Plan Summary for the Insured Lives Death Benefit Fund (Contributing Active Members)

Plan Year:	July 1 through June 30
Net Investment Return	3.50%, net of investment expenses. The information and analysis used in selecting this assumption is shown in the Proposed Change in Investment Return Assumption for Death and Disability Funds letter dated May 31, 2016.
Projected Covered Payroll:	\$1,073,554,607 for 2018-2019 plan year.
Projected Distributions:	\$2,576,531 for 2018-2019 plan year (Projected Covered Payroll times ten-year average cost per \$100 of covered payroll) increasing 3.50% per year thereafter.
Definition of Active Employee:	First day of biweekly payroll period following employment for new Department employees. Immediately following transfer from other City departments.
Funding Method:	Pay as you go, subject to modification by the Board's funding policy.
Funding Policy:	Recommend a contribution rate that maintains the general reserve at a target level of the average of the benefits paid for the last five years.
Incurred Claims:	Provided by Retirement Office.
Member Contribution Rate:	Employees contribute \$1.00 per biweekly payroll period.
Department Contribution Rate:	Rate recommended by Board's Actuary as an amount per \$100 of covered payroll. Recommended contribution rate is \$0.20 per \$100 of payroll.
Age and Service Requirement:	Any age with six months of continuous service. Pre-retirement death of an active member who is a full member of WPERP and was contributing to WPERP.
Benefit:	A single sum distribution equal to 14 times monthly salary. In addition to this Insured Lives Death Benefit, death benefits payable from the Retirement Plan are payable to the beneficiary.
Changes in Actuarial Assumptions:	There have been no changes in actuarial assumptions since the prior valuation.

SECTION 4: Supplemental Information

EXHIBIT VI

Methods, Assumptions and Plan Summary for the Insured Lives Death Benefit Fund (Noncontributing Retired and Disabled Members)

Plan Year:	July 1 through June 30
Net Investment Return	3.50%, net of investment expenses. The information and analysis used in selecting this assumption is shown in the Proposed Change in Investment Return Assumption for Death and Disability Funds letter dated May 31, 2016.
Funding Method:	Pay as you go, subject to modification by the Board's funding policy
Funding Policy:	Recommend a contribution rate that maintains the general reserve at a target level of the average of the benefits paid for the last five years.
Incurred Claims:	Provided by Retirement Office.
Member Contribution Rate:	None
Department Contribution Rate:	Rate recommended by Board's Actuary as an amount per \$100 of retirement benefits paid during the year. Recommended contribution rate is \$0.96 per \$100 of monthly retirement benefit.
Age and Service Requirement:	Death occurs after retirement and member was receiving a retirement monthly allowance from WPERP and had at least five years of Department Service at retirement.
Benefit:	<p>A single sum distribution equal to 14 times the member's Full Retirement Allowance (to a maximum of \$20,000), provided member was employed by the Department for at least five years.</p> <p>In addition to this Insured Lives Death Benefit, death benefits payable from the Retirement Plan include any unpaid Retirement Plan allowances due and the balance of contributions remaining in the Retirement Plan if Option A was the member's selected method of pension payment all of which is payable to beneficiary.</p>
Changes in Actuarial Assumptions:	There have been no changes in actuarial assumptions since the prior valuation.

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