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

Review of the Death Benefit Fund

As of July 1, 2023

Segal

Segal

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January 9, 2024

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 Actuarial Valuation and Review as of July 1, 2023 for the Death Benefit Fund. It summarizes the actuarial data used in the valuation and establishes the funding requirements for July 1, 2023 to June 30, 2024.

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

Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

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; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

The actuarial calculations were directed under the supervision of Eva Yum, FSA, MAAA and 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 actuarial valuation is complete and accurate. The assumptions used in this actuarial valuation were selected by the Board based upon our analysis and recommendations. In our opinion, the assumptions are reasonable and take into account the experience of the Plan and reasonable expectations. In addition, in our opinion, the combined effect of these assumptions is expected to have no significant bias.

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

Sincerely,

Segal

Paul Angelo, FSA, EA, MAAA, FCA Senior Vice President and Actuary	Todd Tauzer, FSA, MAAA, FCA, CERA Senior Vice President and Actuary	Eva Yum, FSA, EA, MAAA Vice President and Actuary

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Section 1: Actuarial Valuation Summary

Purpose and Basis

This report was prepared by Segal to present a valuation of the Death Benefit Fund as of July 1, 2023. The valuation was performed to determine whether the assets and contribution rates are sufficient to provide the prescribed benefits.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Fund, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of March 31, 2023, provided by the Retirement Office;
- The assets of the Fund as of June 30, 2023, provided by the Retirement Office;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Retirement Board for the July 1, 2023 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Retirement Board for the July 1, 2023 valuation; and
- The funding policy adopted by the Retirement Board.

One of the general goals of an actuarial valuation is to establish contributions which fully fund the Fund's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

Section 1: Actuarial Valuation Summary

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions to evaluate the Fund's assets, liabilities and future contribution requirements. Our calculations are based upon member data and financial information provided to us by the Retirement Office. This information has not been audited by us, but it has been reviewed and found to be consistent, both internally and with prior year's information.

The contribution requirements are determined as a percentage of payroll. The employer rates provide for both normal cost and a contribution to amortize any unfunded or overfunded actuarial accrued liabilities. In this valuation, we have applied the funding policy adopted by the Retirement Board, as revised in 2022. Details of the funding policy are provided in Section 4, Exhibit 1 on page 39.

A schedule of current amortization balances and payments may be found in Section 3, Exhibit F on page 32. A graphical projection of the unfunded actuarial accrued liabilities (UAAL) amortization balances and payments has been included in Section 3, Exhibit G starting on page 33.

The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2023 through June 30, 2024.

Highlights of the Valuation

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1. The actuarial accrued liability exceeds the actuarial value of assets, resulting in an unfunded actuarial accrued liability (UAAL) of $103.9 million as of July 1, 2023, which is a decrease from $108.0 million in the previous valuation. This decrease is primarily due to the expected decrease due to contribution made to pay down the UAAL, offset somewhat by an investment return on actuarial value (i.e., after asset smoothing) lower than the 2.75% rate assumed in the prior valuation and the actual employer contributions in 2022-2023 being less than expected. A reconciliation of the Fund's UAAL is provided in Section 2, Subsection C. A schedule of the current UAAL amortization amounts is provided in Section 3, Exhibit F. A graphical projection of the UAAL amortization bases and payments is provided in Section 3, Exhibit G.

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2. The funded ratio (the ratio of the actuarial value of assets to actuarial accrued liability) is 33.06%, compared to the prior year funded ratio of 29.48%. This ratio is one measure of funding status, and its history is a measure of funding progress. The funded ratio measure on a market value basis is 29.98%, compared to 26.45% as of the prior valuation date. The measurements are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for, or the amount of, future contributions. A history of the funded ratio for the Plan is provided in Section 2, Subsection E.

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3. The Board's funding policy determines the Department's required contribution as the normal cost increased by a UAAL amortization charge. Under this funding policy, the Plan's UAAL is amortized over various 15-year periods, each beginning with the year that each portion or base of the UAAL was first identified and amortized. The Department's required contribution rate decreased from 1.21% to 1.14% of payroll for the 2023-2024 plan year; those contributions are estimated to be $16.4 million. This decrease is primarily due to the increase in total payroll reducing the UAAL contribution rate and the changes in member demographics reducing the normal cost contribution rate, offset somewhat by an investment return on actuarial value (i.e., after asset smoothing) lower than the 2.75% rate assumed in the prior valuation and the actual employer contributions in 2022-2023 being less than expected. A complete reconciliation of the aggregate required contribution rate is provided in Section 2, Subsection D.

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4. The market value of assets earned a return of (0.64)% for the July 1, 2022 to June 30, 2023 plan year. The actuarial value of assets earned a return of (0.29)% for the July 1, 2022 to June 30, 2023 plan year due to the deferral of most of the current year investment loss and the partial recognition of prior investment gains and losses. This resulted in an actuarial loss of $1.5 million when measured against the assumed rate of return of 2.75% for 2022-2023. This actuarial investment loss increased the Department's required contribution rate by 0.01%.

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5. The actuarial loss from investment is $1.5 million, or 0.94% of actuarial accrued liability. The net experience loss from sources other than investment is $1.8 million or 1.17% of actuarial accrued liability and this loss was primarily due to the actual employer contributions in 2022-2023 being less than expected.

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6. The net total unrecognized return (i.e., the difference between the market value of assets and the "smoothed" actuarial value of assets) changed by $0.2 million during the plan year, from a $4.6 million unrecognized net investment loss in 2022 to a $4.8 million unrecognized net investment loss in 2023. This net deferred investment loss will be recognized in the determination of the actuarial value of assets for funding purposes over the next four years. This means that, if the plan earns the assumed rate of investment return of 2.75% per year (net of expenses) on a market value basis, then the net deferred losses will be recognized over the next four years as shown in the footnote to the determination of actuarial value of assets in Section 2, Subsection B.
7. The unrecognized net investment losses of $4.8 million represent about 10.3% of the market value of assets. Unless offset by future investment gains or other favorable experience, the recognition of the $4.8 million in the net market losses is expected to have an impact on the plan's future funded ratio and the Department's required contributions. The potential impact may be illustrated as follows:
   a. If the net deferred losses were recognized immediately in the actuarial value of assets, the funded percentage would decrease from 33.06% to 29.98%.

      For comparison purposes, if the net deferred losses in the July 1, 2022 valuation had been recognized immediately in the July 1, 2022 valuation, the funded percentage would have decreased from 29.48% to 26.45%.
   b. If the net deferred losses were recognized immediately in the actuarial value of assets, the Department's required contribution rate would increase from 1.14% to 1.17% of covered payroll.

      For comparison purposes, if the net deferred losses in the July 1, 2022 valuation had been recognized immediately in the July 1, 2022 valuation, the Department's required contribution rate would have increased from 1.21% to 1.24% of covered payroll.

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8. Actuarial Standard of Practice No. 51 (ASOP 51) requires actuaries to identify and assess risks that "may reasonably be anticipated to significantly affect the plan's future financial condition". The key risk that is particularly relevant to the Death Benefit Fund is longevity risk. The standard also requires an actuary to consider if there is any ongoing contribution risk to the plan, however it does not require the actuary to evaluate the particular ability or willingness of contributing entities to make contributions when due, nor does it require the actuary to assess the likelihood or consequence of future changes in applicable law.

   The actuary's assessment can be qualitative or quantitative (e.g., based on numerical demonstrations). The actuary may use nonnumerical methods for assessing risks that might take the form of commentary about potential adverse experience and the likely effect on future results. While the standard does not require that every valuation include a quantitative risk assessment, the actuary may recommend that a more detailed risk assessment be performed. When making that decision, the actuary will take into account such factors as the Fund's design, maturity, size, funded status, asset allocation, cash flow, possible insolvency and current market conditions.

   Because the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions.

This potential divergence may have a significant impact on the future financial condition of the plan. We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the future financial condition of the plan, but have included a brief discussion of key risks that may affect the Plan in Section 2, Subsection G.

9. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The funding policy adopted by the Board meets this standard.
10. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution under the Plan's funding policy and measuring the progress of that funding policy. The Net OPEB Liability (NOL) and OPEB expense under Governmental Accounting Standards Board (GASB) Statements No. 74 and No. 75, for inclusion in the Plan's and employer's financial statements as of June 30, 2023 are to be provided separately. The accounting disclosures will utilize different methodologies from those employed in the funding valuation, as required by the GASB. However, the actuarially determined contribution in this valuation is expected to be used as the actuarially determined contribution for GASB financial reporting.
11. The actuarial valuation as of July 1, 2023 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.
12. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2023. The Fund'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 Fund data as of March 31, 2023 (adjusted to June 30, 2023 by adding 3 months of age, service and interest on contribution balance, and increasing Retirement 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 that may emerge after March 31, 2023 due to COVID-19. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.

Summary of key valuation results

	July 1, 2023		July 1, 2022	
	Total Rate (% of Compensation)	Estimated Annual Dollar Amount	Total Rate (% of Compensation)	Estimated Annual Dollar Amount
Required contribution for plan year beginning July 1: [1]	1.14%	$16,430,011	1.21%	$15,867,232

		July 1, 2023	July 1, 2022
Actuarial accrued liability as of July 1:	• Retired members and beneficiaries	$107,615,503	$106,343,517
	• Inactive vested members	5,110,869	5,315,135
	• Active members	42,507,165	41,528,782
	• Total actuarial accrued liability	155,233,537	153,187,434
	• Total normal cost (beginning of year) for plan year beginning July 1	6,256,775	5,957,755
Assets as of July 1:	• Market value of assets (MVA)	46,533,638	40,525,139
	• Actuarial value of assets (AVA)	51,316,174	45,165,590
	• Actuarial value of assets as a percentage of market value of assets	110.3%	111.5%
Funded status as of July 1:	• Unfunded actuarial accrued liability on MVA basis	$108,699,899	$112,662,295
	• Funded percentage on MVA basis	29.98%	26.45%
	• Unfunded actuarial accrued liability on AVA basis	$103,917,363	$108,021,844
	• Funded percentage on AVA basis	33.06%	29.48%
	• Amortization period on AVA basis[2]	15 years	15 years
Key assumptions as of July 1:	• Net investment return	2.75%	2.75%
	• Price Inflation	2.50%	2.50%

[1] Required contributions are assumed to be paid at the middle of every year.
[2] Changes in unfunded actuarial accrued liability for each valuation are amortized over separate 15-year periods.

Summary of key valuation results (continued)

		July 1, 2023	July 1, 2022	Change From Prior Year
Demographic data as of July 1:	**Active members**			
	• Number of members[1]	11,039	10,799	2.2%
	• Average age	46.5	46.5	0.0
	• Average service	13.1	13.3	-0.2
	• Total projected compensation	$1,443,732,069	$1,309,850,320	10.2%
	• Average projected compensation	$130,785	$121,294	7.8%
	Retired members and beneficiaries:			
	• Number of members:			
	– Retired members[2]	7,819	7,760	0.8%
	– Beneficiaries[3]	85	93	-8.6%
	– Total	7,904	7,853	0.6%
	• Average age	72.5	72.3	0.2
	• Average monthly benefit[4]	$534	$530	0.8%
	Inactive vested members:			
	• Number of members[5]	575	595	-3.4%
	• Average age	55.6	55.8	-0.2
	Total members:	19,518	19,247	1.4%

[1] Includes 1,583 and 1,587 active members who have Supplemental Family Death Benefit (SFDB) coverage for 2023 and 2022, respectively.
[2] Includes 168 and 165 retired members who have SFDB coverage for 2023 and 2022, respectively.
[3] Receiving Family Death or Supplemental Family Death benefits.
[4] This is the average monthly benefit for beneficiaries currently 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.

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 a valuation, Segal relies on a number of input items. These include:

Plan provisions	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. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant information	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.
Financial information	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, as provided by the Retirement Office. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. The Plan uses an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Section 1: Actuarial Valuation Summary

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.

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

The actuarial 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.

An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of future financial measures, except where otherwise noted. 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. Future contribution requirements may differ from those determined in the valuation because of:

- Differences between actual experience and anticipated experience;
- Changes in actuarial assumptions or methods; and
- Changes in statutory provisions.

Some actuarial results in this report are not rounded, but that does not imply precision.

If the 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 Fund should look to their other advisors for expertise in these areas.

While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.

Segal's report shall be deemed to be final and accepted by the WPERP upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

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

Section 2: Actuarial Valuation Results

A. Member Data

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive vested members, retired members and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A and B*.

Member Population: 2019 - 2023

Year Ended June 30	Active Members	Inactive Vested Members[1]	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2019	10,362	630	7,445	8,075	0.78	0.72
2020	10,778	619	7,560	8,179	0.76	0.70
2021	10,605	599	7,703	8,302	0.78	0.73
2022	10,799	595	7,853	8,448	0.78	0.73
2023	11,039	575	7,904	8,479	0.77	0.72

[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.

Historical Plan Population

The chart below demonstrates the progression of the active population. The chart also shows the growth among the retired population over the same time period.

Member Data Statistics: 2019 - 2023

	Active Members			Retired Members and Beneficiaries		
Year Ended June 30	**Count**	**Average Age**	**Average Service**	**Count**	**Average Age**	**Average Monthly Amount[1]**
2019	10,362	47.2	14.6	7,445	72.5	$494
2020	10,778	46.7	13.9	7,560	72.5	$472
2021	10,605	46.7	13.8	7,703	72.3	$470
2022	10,799	46.5	13.3	7,853	72.3	$530
2023	11,039	46.5	13.1	7,904	72.5	$534

[1] This is the average monthly benefit for beneficiaries currently receiving Family Death or Supplemental Family Death Benefits. The amounts shown in the 2021 or earlier valuation reports exclude the Supplemental Family Death Benefits.

B. Financial Information

Retirement plan funding anticipates that, over the long term, both contributions and investment earnings (less investment fees) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of transactions for the valuation year, is presented in Section 3, Exhibits C, D and E.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the valuation asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Allocation of Market Value of Assets as of June 30, 2023

Estimated liability for family allowances	$3,933,528
Contribution account for family allowances	7,421,906
General reserve	37,160,361
Total reserves and designated balances	$48,515,795
Unrealized appreciation/(depreciation) in the fair value of investments	(1,982,157)
Total reserves and designated balances at fair value	**$46,533,638**

Determination of Actuarial Value of Assets for Year Ended June 30, 2023

		Total Actual Market Return (net)	Expected Market Return (net)	Investment[1] Gain (Loss)	Deferred Factor	Deferred Return[2]
1	**Market value of assets as of June 30, 2023**					**$46,533,638**
2	Calculation of unrecognized return					
a)	Year ended June 30, 2019	N/A	N/A	N/A	N/A	$0
b)	Year ended June 30, 2020	$2,793,526	$1,109,116	$1,684,410	20%	336,882
c)	Year ended June 30, 2021	343,631	1,360,790	(1,017,159)	40%	(406,864)
d)	Year ended June 30, 2022	(4,381,121)	1,498,779	(5,879,900)	60%	(3,527,940)
e)	Year ended June 30, 2023	(279,861)	1,200,906	(1,480,767)	80%	(1,184,614)
f)	Total unrecognized return[3]					$(4,782,536)
3	**Actuarial value of assets as of June 30, 2023 (1) – (2f)**					**$51,316,174**
4	Actuarial value of assets as a percentage of market value of assets (3) / (1)					110.3%

1 Total return minus expected return on a market value basis. As of June 30, 2019, there are no deferred investment gains/losses as the method was effective with the 2019 valuation on a prospective basis.

2 Recognition at 20% per year over 5 years.

3 Deferred return as of June 30, 2023 recognized in each of the next four years:

(a)	Amount recognized during 2023/2024	$(1,338,683)
(b)	Amount recognized during 2024/2025	(1,675,565)
(c)	Amount recognized during 2025/2026	(1,472,133)
(d)	Amount recognized during 2026/2027	(296,155)
(e)	Total unrecognized return as of June 30, 2023	$(4,782,536)

Investment Experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Fund's investment policy. The rate of return on the market value of assets was (0.64)% for the year ended June 30, 2023.

For valuation purposes, the assumed rate of return on the actuarial value of assets was 2.75% for the 2022-2023 plan year (based on the July 1, 2022 valuation). The actual rate of return on an actuarial basis for the 2022-2023 plan year was (0.29)%. Since the assumed return for the year was greater than the actual return, the Fund experienced an actuarial loss during the year ended June 30, 2023 with regard to its investments.

Investment Experience for Year Ended June 30, 2023

		Market Value	Actuarial Value
1	Net investment income	$(279,861)	$(137,776)
2	Average value of assets	43,669,319	48,309,770
3	Rate of return: **1 ÷ 2**	(0.64)%	(0.29)%
4	Assumed rate of return	2.75%	2.75%
5	Expected investment income: **2 x 4**	1,200,906	1,328,519
6	**Actuarial gain/(loss): 1 - 5**	**$(1,480,767)**	**$(1,466,295)**

Section 2: Actuarial Valuation Results

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the actual market value investment return for the last four years, including an average over that time period.

Investment Return – Market Value and Actuarial Value: 2020 – 2023

Year Ended June 30	Market Value Investment Return Amount	Market Value Investment Return Percent	Actuarial Value Investment Return Amount	Actuarial Value Investment Return Percent
2020	$2,793,526	8.82%	$1,360,417	4.33%
2021	343,631	0.88	1,494,240	3.98
2022	(4,381,121)	(10.23)	456,249	1.07
2023	(279,861)	(0.64)	(137,776)	(0.29)
Total	$(1,523,825)		$3,173,130	
Most recent four-year average return		**(0.97)%**		**1.99%**

Note: Each year's yield is weighted by the average asset value in that year.

C. Development of Unfunded Actuarial Accrued Liability

Development for Year Ended June 30, 2023

1	**Unfunded actuarial accrued liability at beginning of year**		**$108,021,844**
2	Total normal cost at beginning of year		5,957,755
3	Expected employer and employee contributions		(16,251,984)
4	Interest		
	a) For whole year on 1 + 2	3,134,439	
	b) For half year on 3	(220,434)	
	c) Total interest		2,914,005
5	Expected unfunded actuarial accrued liability at end of year		$100,641,620
6	Changes due to:		
	a) Actual employer contributions less than expected in item 3[1]	$1,253,802	
	b) Investment return less than expected (after "smoothing")[2]	1,466,295	
	c) Other experience net loss[3]	555,646	
	Total changes		3,275,743
7	**Unfunded actuarial accrued liability at end of year**		**$103,917,363**

[1] The actual employer contributions were less than expected mainly due to actual covered payroll for 2022-2023 lower than the payroll projected in the July 1, 2022 valuation.
[2] The actual rate of return on an actuarial basis for the year ended June 30, 2023 is (0.29)% compared to the assumed rate of return of 2.75% (based on the July 1, 2022 valuation).
[3] Includes effect of differences in actual versus expected experience including mortality, disability, termination, and retirement experience.

D. Required Contribution

The required contribution is equal to the employer normal cost payment and the amortization of the unfunded actuarial accrued liability. As of July 1, 2023, the recommended employer contribution rate is 1.14% of compensation or $16.4 million in dollars.

Under the current funding policy, the required contribution rate slightly decreased as a percentage of pay.

The Board sets the funding policy used to calculate the required contribution based on layered 15-year amortization periods in equal dollar amounts. See Section 4, Exhibit 1 for further details on the elements of the funding policy. Based on this policy, there is no negative amortization and each amortization layer is fully funded in 15 years. As shown in the graphical projection of the UAAL amortization balances and payments found in Section 3, Exhibit G, before taking into consideration the deferred investment gains/losses that will be recognized in the next several valuations, the UAAL of the Plan is expected to be fully amortized by 2038, assuming all assumptions are realized and contributions are made in accordance with the funding policy.

The current funding policy is intended to fully fund the cost of the benefits and to allocate the cost of benefits reasonably and equitably over time while minimizing the volatility of the required contributions. The normal cost component of the required contribution is expected to remain level as a percent of payroll. The UAAL amortization component of the required contribution is expected to remain level in dollar amount except when any current amortization layer is fully amortized, assuming there are no future actuarial gains or losses. Furthermore, the funded ratio is expected to increase as the UAAL is methodically funded by employer contributions.

The contribution requirement as of July 1, 2023 is based on the data previously described, the actuarial assumptions and plan provisions described in Section 4, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

Section 2: Actuarial Valuation Results

Required Employer Contribution for Year Beginning July 1

		2023		2022	
		Amount	% of Projected Compensation	Amount	% of Projected Compensation
1	Total normal cost	$6,256,775	0.44%	$5,957,755	0.45%
2	Expected member contributions	(385,655)	(0.03)%	(379,533)	(0.03)%
3	Employer normal cost: 1 – 2	$5,871,120	0.41%	$5,578,222	0.42%
4	Actuarial accrued liability	$155,233,537		$153,187,434	
5	Actuarial value of assets	51,316,174		45,165,590	
6	Unfunded actuarial accrued liability: 4 – 5	$103,917,363		$108,021,844	
7	Amortization payment on unfunded actuarial accrued liability[1]	$10,336,043	0.72%	$10,073,795	0.77%
8	Total required employer contribution: 3 + 7, adjusted for timing[2]	**$16,430,011**	**1.14%**	**$15,867,232**	**1.21%**
9	**Projected compensation**	**$1,443,732,069**		**$1,309,850,320**	

[1] The amortization of the UAAL in accordance with the funding policy is determined as the sum of the amortization amount from the separate UAAL amortization layers created in each valuation and amortized over 15-year periods.

[2] Contributions are assumed to be paid at the middle of the year.

Reconciliation of Department's Required Contribution Rate

The chart below details the changes in the aggregate required employer contribution rate from the prior valuation to the current year's valuation.

Reconciliation of Department's Required Contribution Rate from July 1, 2022 to July 1, 2023

	Contribution Rate
Aggregate required contribution rate as of July 1, 2022	**1.21%**
1. Effect of actual contributions less than expected	0.01%
2. Effect of investment return less than expected (after "smoothing")	0.01%
3. Effect of increase in total payroll on UAAL amortization rate	(0.07)%
4. Effect of net other experience losses	0.00%
5. Effect of changes in member demographics on normal cost	(0.02)%
Total change	(0.07)%
Aggregate required contribution rate as of July 1, 2023	**1.14%**

E. Funded Status

A commonly reported piece of information regarding the plan's financial status is the funded ratio. These ratios compare the market and actuarial value of assets to the actuarial accrued liability of the plan. Higher ratios indicate a relatively well-funded plan while lower ratios may indicate recent changes to actuarial assumptions, funding of the plan below actuarial requirements, poor asset performance, or a variety of other causes.

The funded status measures shown in this valuation are appropriate for assessing the need for or amount of future contributions. However, they are not necessarily appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

The chart below shows the plan's schedule of funding progress for the last five years.

Schedule of Funding Progress for Plan Years Ending June 30, 2019 – 2023

Actuarial Valuation Date as of July 1	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (%) (a) / (b)	Projected Covered Payroll (c)	UAAL as a Percentage of Projected Covered Payroll (%) [(b) - (a)] / (c)
2019	$28,518,673	$134,257,596	$105,738,923	21.2%	$1,141,875,615	9.3%
2020	36,017,294	133,737,063	97,719,769	26.9%	1,211,798,340	8.1%
2021	40,541,328	134,038,066	93,496,738	30.2%	1,233,265,179	7.6%
2022	45,165,590	153,187,434	108,021,844	29.5%	1,309,850,320	8.2%
2023	51,316,174	155,233,537	103,917,363	33.1%	1,443,732,069	7.2%

F. Actuarial Balance Sheet

An overview of the plan's funding is given by an actuarial balance sheet. In this approach, the amount and timing of all future payments that will be made by the plan for current participants is determined first. Then these payments are discounted at the valuation interest rate to the date of the valuation, thereby determining the present value, referred to as the actuarial present value of future benefits of the plan.

Second, this actuarial present value of future benefits is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the plan, the present value of future normal cost contributions (this includes both the present value of future member contributions and the present value of future employer normal cost contributions), and the present value of future employer amortization payments for the unfunded actuarial accrued liability.

Actuarial Balance Sheet

	July 1, 2023	July 1, 2022
Actuarial present value of future benefits		
• Present value of benefits for retired members and beneficiaries	$107,615,503	$106,343,517
• Present value of benefits for inactive vested members	5,110,869	5,315,135
• Present value of benefits for active members	129,237,417	123,174,236
Total actuarial present value of future benefits	**$241,963,789**	**$234,832,888**
Current and future assets		
• Total actuarial value of assets	$51,316,174	$45,165,590
• Present value of future normal cost contributions	86,730,252	81,645,454
• Present value of future unfunded actuarial accrued liability contributions	103,917,363	108,021,844
Total of current and future assets	**$241,963,789**	**$234,832,888**

G. Risk Assessment

Because the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan.

This section does not contain a detailed analysis of the potential range of future measurements, but does include a concise discussion of some of the primary risks that may affect the future financial condition of the Death Benefit Fund. We do not recommend that a more detailed assessment of the risks be performed due to the relatively small liabilities of the death benefits as compared to the main retirement benefits paid by WPERP.

This section provides descriptions and basic assessments of the primary risks that are likely to have an ongoing influence on the financial health of the Death Benefit Fund. Historical trends and maturity measures are shown in Section 2, Subsection L of the July 1, 2023 Actuarial Valuation Report for WPERP.

Risk Assessments

- Longevity risk (the risk that mortality experience will be different than expected)

  The actuarial valuation includes current life expectancy assumptions and an expectation of future improvement in life expectancy, which are significant assumptions given the relatively long duration of liabilities for pension plans. Emerging plan experience that does not match these expectations will result in increases or decreases in the actuarially determined contribution over time. Because the Death Benefit Fund provides for death benefits payable to surviving spouses and children rather than a retirement annuity such as that paid by the Retirement Plan, members living longer than expected generally results in a decrease in liabilities and contribution rates.

- Other risks

  In addition to longevity, the valuation includes a variety of other assumptions that are unlikely to match future experience exactly. Examples of other demographic assumptions include retirement, termination and disability assumptions.

Some plans also carry significant contribution risk, defined as the potential for actual future contributions deviating from expected future contributions. However, the employer has a proven track-record of making the actuarially determined contributions based on the Board's actuarial funding policy, so contribution risk is minimal.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage

Total Plan

	Year Ended July 1		Change From
	2023	2022	Prior Year
Active members in valuation:			
• Number[1]	11,039	10,799	2.2%
• Average age	46.5	46.5	0.0
• Average years of service	13.1	13.3	-0.2
• Total projected compensation	$1,443,732,069	$1,309,850,320	10.2%
• Average projected compensation	$130,785	$121,294	7.8%
Inactive vested members:			
Number[2]	575	595	-3.4%
Average age	55.6	55.8	-0.2
Retired members:			
• Number in pay status[3]	7,819	7,760	0.8%
• Average age	72.9	72.7	0.2
Beneficiaries:			
• Number in pay status[4]	85	93	-8.6%
• Average age	38.1	36.7	1.4
• Average monthly benefit	$534	$530	0.8%

1 Includes 1,583 and 1,587 active members who have Supplemental Family Death Benefit (SFDB) coverage for 2023 and 2022, respectively.
2 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.
3 Includes 168 and 165 retired members who have SFDB coverage for 2023 and 2022, respectively.
4 Receiving Family Death or Supplemental Family Death benefits.

Exhibit B: Members in Active Service as of July 1, 2023 by Age, Years of Service, and Average Projected Compensation

Total Plan

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	106	104	2	—	—	—	—	—	—	—
	$110,535	$110,047	$135,898	—	—	—	—	—	—	—
25 – 29	700	557	142	1	—	—	—	—	—	—
	122,540	116,426	146,081	$184,997	—	—	—	—	—	—
30 – 34	1,261	723	503	35	—	—	—	—	—	—
	123,057	110,406	139,187	152,565	—	—	—	—	—	—
35 – 39	1,456	600	609	143	102	2	—	—	—	—
	125,018	109,698	127,018	156,967	$155,607	$267,371	—	—	—	—
40 – 44	1,601	444	535	174	306	137	5	—	—	—
	133,275	108,684	123,936	151,339	158,536	170,352	$125,746	—	—	—
45 – 49	1,523	297	426	114	277	340	68	1	—	—
	130,780	109,337	118,357	139,835	141,427	150,139	143,989	$330,000	—	—
50 – 54	1,568	198	313	91	253	394	183	129	7	—
	132,862	109,692	115,561	127,924	134,560	136,658	144,416	181,166	$158,805	—
55 – 59	1,404	109	234	73	158	279	147	281	123	—
	142,339	112,818	115,162	131,496	130,221	131,122	151,076	174,222	184,368	—
60 – 64	931	51	102	48	127	199	95	134	134	41
	136,089	111,579	120,608	127,665	128,368	129,247	135,509	144,937	163,249	$155,736
65 – 69	359	10	44	22	46	72	45	54	42	24
	126,905	111,641	117,574	118,436	116,223	120,878	126,746	139,089	138,973	148,456
70 & over	130	3	5	6	14	35	9	17	15	26
	123,504	62,735	122,788	102,725	110,828	114,936	129,635	142,328	140,425	129,617
Total	**11,039**	**3,096**	**2,915**	**707**	**1,283**	**1,458**	**552**	**616**	**321**	**91**
	$130,785	**$111,007**	**$125,665**	**$142,624**	**$141,370**	**$139,775**	**$142,753**	**$165,598**	**$167,001**	**$146,354**

Exhibit C: Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended June 30, 2023		Year Ended June 30, 2022	
Net assets at market value at the beginning of the year		**$40,525,139**		**$40,738,247**
Department of Water & Power contributions:				
• Death benefit	$14,631,549		$13,133,730	
• Administrative expenses	1,865,675		1,858,203	
Department contribution income		$16,497,224		$14,991,933
Contributions from members:				
• Insured lives' death benefit	$269,483		$264,261	
• Supplemental family death benefits	108,539		107,997	
Net members' contribution		$378,022		$372,258
Investment income:				
• Net appreciation in fair value of investments	$(1,746,806)		$(5,138,325)	
• Investment income	1,516,486		804,118	
• Less investment expense	(49,541)		(46,914)	
Net investment income		$(279,861)		$(4,381,121)
Total income available for benefits:		**$16,595,385**		**$10,983,070**
Less benefit payments and administrative expense:				
• Death benefit (active/retired members)	$(8,142,167)		$(8,704,737)	
• Family allowances	(581,671)		(635,479)	
• Administrative expense	(1,863,048)		(1,855,962)	
Total payments		$(10,586,886)		$(11,196,178)
Change in net assets at market value		**$6,008,499**		**$(213,108)**
Net assets at market value at the end of the year		**$46,533,638**		**$40,525,139**

Note: Results may be slightly off due to rounding.

Exhibit D: Summary Statement of Plan Assets

		Year Ended June 30, 2023		Year Ended June 30, 2022
Cash equivalents		$3,600,528		$5,797,954
Accounts receivable:				
Department of Water and Power	$2,894,539		$2,568,781	
Accrued investment income	161,133		85,281	
Others	20,044		20,044	
Total accounts receivable		$3,075,716		$2,674,106
Investments:				
• Fixed income	$46,336,527		$37,578,020	
• Short-term investments	270,352		260,093	
Total investments at market value		$46,606,879		$37,838,113
Total assets		$53,283,123		$46,310,173
Accounts payable:				
Pending investment purchases	$159,970		$85,031	
Other	775,390		677,703	
Death claims in process – insured lives	5,814,125		5,022,300	
Total liability		$6,749,485		$5,785,034
Net assets at market value		**$46,533,638**		**$40,525,139**
Net assets at actuarial value		**$51,316,174**		**$45,165,590**

Note: Results may be slightly off due to rounding.

Exhibit E: Development of the Fund through June 30, 2023

Year Ended June 30	Market Value of Assets at Beginning of Year	Employer Contributions	Member Contributions	Administrative Expenses	Net Investment Return	Benefit Payments	Market Value of Assets at Year-End
2019	$27,210,220	$8,777,581	$358,073	$1,599,880	$2,292,799	$8,232,053	$28,806,740
2020	28,806,740	14,908,884	384,893	1,606,529	2,793,526	7,922,692	37,364,822
2021	37,364,822	14,522,798	373,989	1,621,742	343,631	10,245,251	40,738,247
2022	40,738,247	14,991,933	372,258	1,855,962	(4,381,121)	9,340,216	40,525,139
2023	40,525,139	16,497,224	378,022	1,863,048	(279,861)	8,723,838	46,533,638

Exhibit F: Table of Amortization Bases

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Initial amortization	July 1, 2019	$117,442,917	15	$91,494,611	11	$9,491,067
Assumption changes	July 1, 2019	(11,703,994)	15	(9,118,067)	11	(945,850)
Actuarial gain	July 1, 2020	(2,165,579)	15	(1,811,209)	12	(174,455)
Funding policy changes	July 1, 2020	(373,648)	15	(312,506)	12	(30,101)
Actuarial loss	July 1, 2021	1,317,099	15	1,174,503	13	105,771
Actuarial loss	July 1, 2022	3,102,980	15	2,933,063	14	248,417
Assumption changes	July 1, 2022	17,224,419	15	16,281,225	14	1,378,946
Actuarial loss	July 1, 2023	3,275,743	15	3,275,743	15	262,248
Total				**$103,917,363**		**$10,336,043**

[1] Level dollar amount as of beginning of year.

Exhibit G: Projection of UAAL Balances and Payments

Outstanding Balance of $103.9 Million in Net UAAL as of July 1, 2023

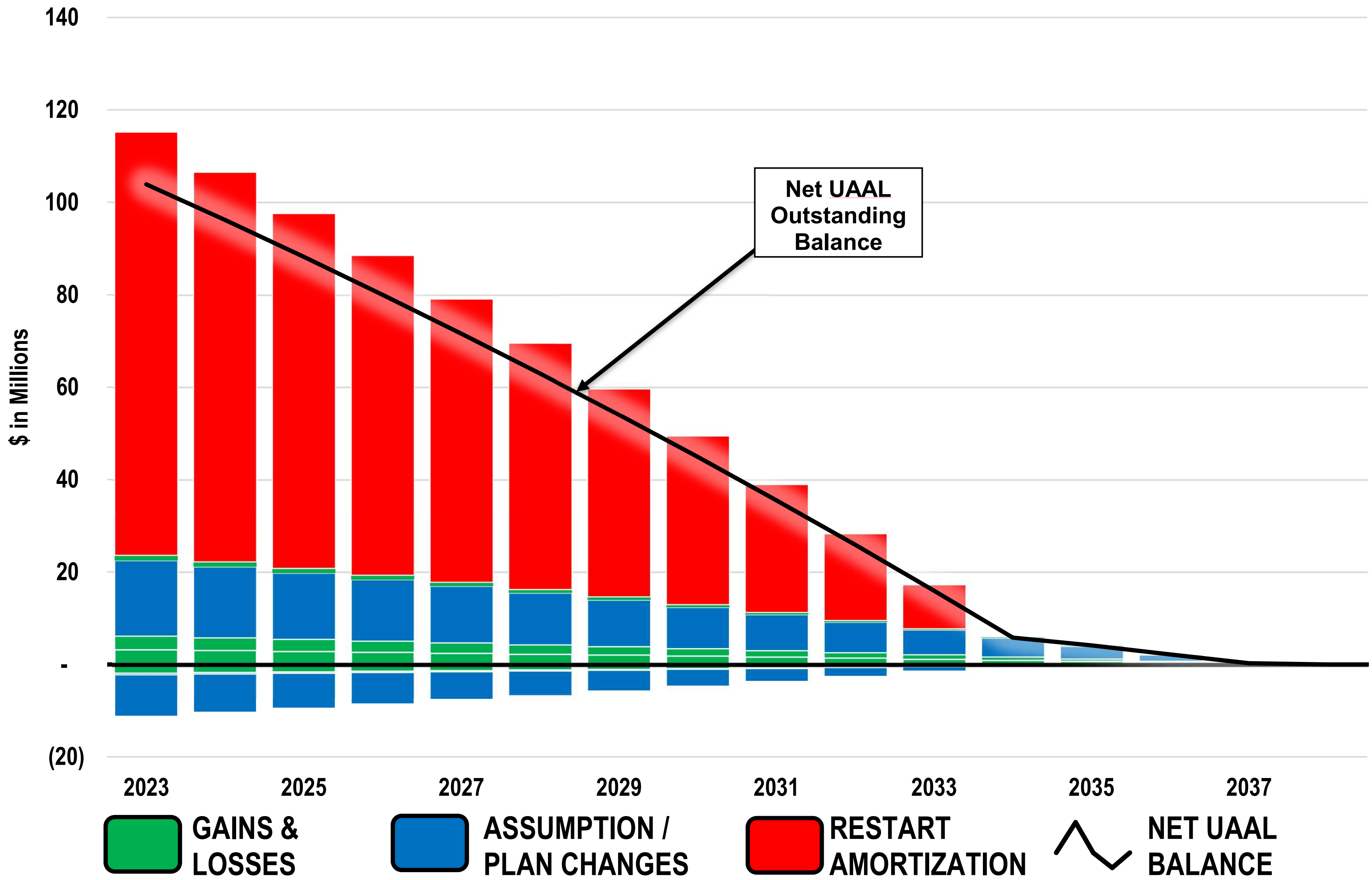

Exhibit G: Projection of UAAL Balances and Payments (Continued)

Annual Payments Required to Amortize $103.9 Million in Net UAAL as of July 1, 2023

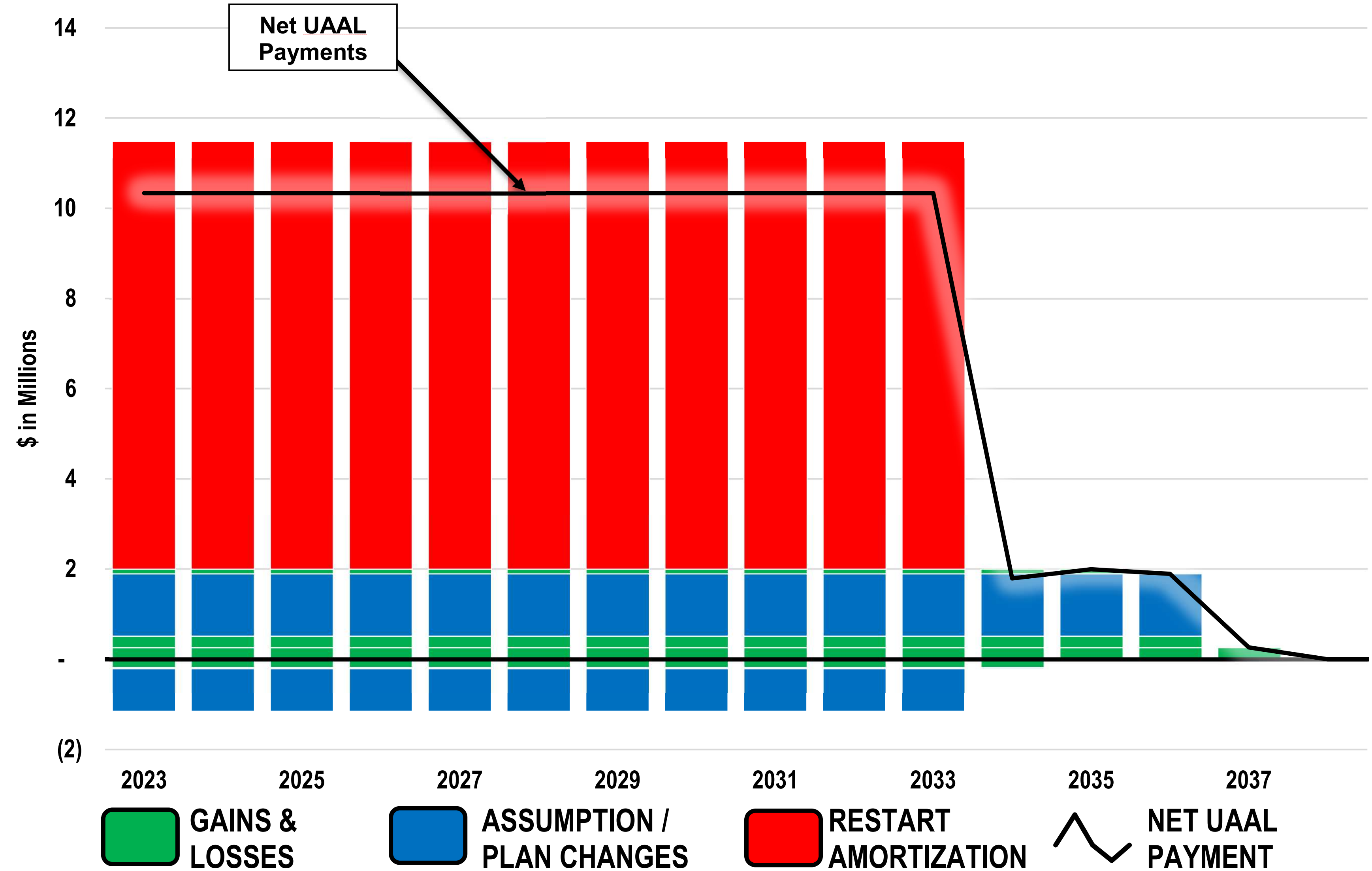

Exhibit H: Definition of Pension Terms

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

Actuarial accrued liability for actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial accrued liability for pensioners and beneficiaries:	Actuarial present value of lifetime benefits to existing pensioners and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial cost method:	A procedure allocating the actuarial present value of future benefits to various time periods; a method used to determine the normal cost and the actuarial accrued liability that are used to determine the actuarially determined contribution.
Actuarial gain or loss:	A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates. To the extent that actual experience differs from that assumed, actuarial accrued liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected.
Actuarially equivalent:	Of equal actuarial present value, determined as of a given date and based on a given set of actuarial assumptions.
Actuarial present value (APV):	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions. Each such amount or series of amounts is: Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial present value of future plan benefits:	The actuarial present value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The actuarial present value of future plan benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund of member contributions or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits when due.
Actuarial valuation:	The determination, as of a valuation date, of the normal cost, actuarial accrued liability, actuarial value of assets, and related actuarial present values for a plan as well as actuarially determined contributions.
Actuarial value of assets (AVA):	The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially determined contributions.
Actuarially determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the Plan.
Actuarially determined contribution (ADC):	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The ADC consists of the employer normal cost and the amortization payment.
Amortization method:	A method for determining the amortization payment. The most common methods used are level dollar and level percentage of payroll. Under the level dollar method, the amortization payment is one of a stream of payments, all equal, whose actuarial present value is equal to the unfunded actuarial accrued liability. Under the level percentage of pay method, the amortization payment is one of a stream of increasing payments, whose actuarial present value is equal to the unfunded actuarial accrued liability. Under the level percentage of pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization payment:	The portion of the pension plan contribution, or ADC, that is intended to pay off the unfunded actuarial accrued liability.

Assumptions or actuarial assumptions:	The estimates upon which the cost of the Fund is calculated, including: Investment return - the rate of investment yield that the Fund will earn over the long-term future; Mortality rates - the rate or probability of death at a given age for employees and pensioners; Retirement rates - the rate or probability of retirement at a given age or service; Disability rates – the probability of disability retirement at a given age; Termination rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; Salary increase rates - the rates of salary increase due to inflation, real wage growth and merit and promotion increases.
Closed amortization period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.
Defined benefit plan:	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
Defined contribution plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer normal cost:	The portion of the normal cost to be paid by the employer. This is equal to the normal cost less expected member contributions.
Experience study:	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
Funded ratio:	The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA.
Investment return:	The rate of earnings of the Fund 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.

Normal cost:	The portion of the actuarial present value of future benefits allocated to a valuation year by the actuarial cost method. Any payment with respect to an unfunded actuarial accrued liability is not part of normal cost (see amortization payment). For pension plan benefits that are provided in part by employee contributions, normal cost refers to the total of employee contributions and employer normal cost unless otherwise specifically stated.
Open amortization period:	An open amortization period is one which is used to determine the amortization payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period.
Unfunded actuarial accrued liability:	The excess of the actuarial accrued liability over the actuarial value of assets. This value may be negative, in which case it may be expressed as a negative unfunded actuarial accrued liability, also called the funding surplus.
Valuation date or actuarial valuation date:	The date as of which the value of assets is determined and as of which the actuarial present value of future plan benefits is determined. The expected benefits to be paid in the future are discounted to this date.

Section 4: Actuarial Valuation Basis

Exhibit 1: Actuarial Assumptions and Methods

Rationale for assumptions:	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is generally shown in the July 1, 2018 through June 30, 2021 Actuarial Experience Study and our supplemental letter entitled Review of Investment Return Assumption for Death and Disability Funds both dated May 20, 2022. All actuarial assumptions and methods shown below apply to both Tier 1 and Tier 2 members.
Economic assumptions	
Net investment return:	2.75%, net of investment expenses.
Demographics assumptions	
Family composition at death for active members	See table and notes below.
Other actuarial assumptions:	Same as those used in July 1, 2023 actuarial valuation report for the Retirement Plan.

Family composition at death for active members

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.

Section 4: Actuarial Valuation Basis

Actuarial funding policy	
Actuarial value of assets:	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.
Actuarial cost method:	Entry age actuarial cost method. Entry age equals attained age less years of service. Normal cost and actuarial accrued liability are calculated on an individual basis and are based on costs allocated as a level percent of salary, with normal cost determined as if the current benefit accrual rate had always been in effect.
Amortization policy:	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 unfunded actuarial accrued liability are amortized over separate fifteen-year periods. All amortization amounts are determined in equal dollar amounts over the amortization period. If the Plan becomes fully funded, the previous amortization layers are considered fully amortized. If the surplus becomes 20% or greater, the surplus that is in excess of 20% of the actuarial accrued liabilities will be amortized over a 30-year period in equal dollar amounts. 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 or change in assumptions or methods.
Changed actuarial assumptions and methods:	There have been no changes in actuarial assumptions since the last valuation.

Exhibit 2: Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year:	July 1 through June 30
Covered members:	
Age and Service Requirement for Family Death Benefit	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 monthly retirement allowance from WPERP and had at least five years of Department Service at retirement.
Age and Service Requirement for Supplemental Family Death Benefit	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 for Family Death Benefit and Supplemental Family Death Benefit	The plan provides a monthly benefit for each surviving child that is: the naturally or legally adopted child of the member under 18 and unmarried, or disabled and over age 18 (only if the disability occurred before age 18) and unmarried.
Insured Lives Death Benefit (Contributing Active Members)	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.
Insured Lives Death Benefit (Non-Contributing Retired Members)	Death occurs after retirement and member was receiving a monthly retirement allowance from WPERP and had at least five years of Department Service at retirement.
Member contribution rate:	
Family Death Benefit	None.
Supplemental Family Death Benefit	$2.25 per biweekly period (or $4.90 per month if retired).
Insured Lives Death Benefit (Contributing Active Members)	$1.00 per biweekly payroll period.
Insured Lives Death Benefit (Non-Contributing Retired Members)	None.
Department contribution rate:	The Department of Water and Power makes actuarially determined contributions that consist of the normal cost plus an amortization of the unfunded actuarial accrued liability as described in further detail in Exhibit 1.

Benefit	
Family Death 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.
Supplemental Family Death 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.
Insured Lives Death Benefit (Contributing Active Members)	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 (not valued in this valuation).
Insured Lives Death Benefit (Non-Contributing Retired Members)	A single sum distribution equal to 14 times the member's Full Retirement Allowance (to a maximum of $20,000). 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 (not valued in this valuation).
Changes in plan provisions:	There have been no changes in plan provisions since the last valuation that had a material impact on this valuation.

Note: The summary of major plan provisions is designed to outline principal plan benefits as interpreted for purposes of the actuarial valuation. If the Retirement Office should find the plan summary not in accordance with the actual provisions, the Retirement Office should alert the actuary so they can both be sure the proper provisions are valued.

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