

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

Review of the Disability Fund as of July 1, 2023



This report has been prepared at the request of the Board of Administration to assist in administering the Plan. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Administration and may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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Segal



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

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 Members of the Board:

We are pleased to submit this Actuarial Valuation and Review of the Disability Fund as of July 1, 2023. It establishes the funding requirements for fiscal year 2023-2024 and analyzes the preceding year's experience.

This review has been completed in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Plan. The census 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.

The Water and Power Employees' Retirement Plan of the City of Los Angeles
January 9, 2024

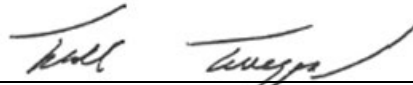
We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

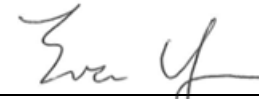
Segal



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

EK/jl

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Section 1: Actuarial Valuation Summary

Purpose and Basis

This report was prepared by Segal to present a valuation of the Disability Fund of The Water and Power Employees' Retirement Disability and Death Benefit Insurance Plan of the City of Los Angeles ("the 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 Disability Fund, as administered by the Retirement Board;
- The characteristics of covered active members and disabled members 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;
- The funding policy adopted by the Retirement Board.

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 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.

Section 1: Actuarial Valuation Summary

Valuation Highlights

- Pgs. 31, 33, 35
1. The Temporary Disability benefits and Permanent Total Disability benefits are included in this review. The funding for the Temporary Disability Benefit includes both the Temporary Disability Benefit and the Extended Temporary Disability Benefit. Only the Supplemental Industrial Disability benefit is funded by the Department on a “pay-as-you-go” basis. All the disability benefits are summarized in *Section 3* of this report.
- Pgs. 10, 11
2. The total reserve for the disability benefits has decreased from \$44.9 million on June 30, 2022 to \$41.3 million on June 30, 2023. Member contributions amounted to about \$529,000 for the 2021-2022 fiscal year and \$539,000 for the 2022-2023 fiscal year. Department contributions amounted to about \$16.4 million for the 2021-2022 fiscal year and \$15.6 million for the 2022-2023 fiscal year.
- Pg. 12
3. The General Reserve for the Temporary and Extended Temporary Disability Benefit Fund decreased from \$5.6 million as of June 30, 2022 to \$4.2 million as of June 30, 2023.
- Pg. 16
4. The recommended Department contribution rate for the Temporary and Extended Temporary Disability Benefit Fund has increased from \$1.05 per \$100 of compensation to \$1.15 per \$100 of compensation. See *Section 2, Subsection B* for details.
- Pg. 13
5. The General Reserve for the Permanent Total Disability Fund decreased from \$20.1 million as of June 30, 2022 to \$19.4 million as of June 30, 2023.
- Pg. 22
6. The recommended Department contribution rate for the Permanent Total Disability Fund remains at \$0 per \$100 of compensation.
 7. For purposes of determining the contribution rate for both the Temporary Disability and Permanent Total Disability Funds, in 2019 the Board adopted a non-declining (“rolling”) five year period for the General Reserve to reach the target reserve level. For both funds, the General Reserve is greater than the target reserve level as of June 30, 2023.
 8. The 2.75% discount rate is based on the Disability Fund’s current target asset allocation that is virtually all fixed income investments. It reflects expected real returns for that asset class as well as the 2.50% inflation assumption for the July 1, 2023 valuation.

Section 1: Actuarial Valuation Summary

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 | The 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 range for reasonable assumption, 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. |
| Models | <p>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.</p> <p>The model for the funding policy for this valuation (maintaining a target general reserve at the end of a rolling five-year period) is developed by the client team under the supervision of the responsible actuary.</p> |

Section 1: Actuarial Valuation Summary

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 financial measurements, 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 plan provisions.
-

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 WPERP 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 WPERP, it is not a fiduciary in its capacity as actuaries and consultants with respect to the WPERP.

Section 2: Actuarial Valuation Results

A. Introduction and Consolidated Financial Information

In this section, we give a general description of the method used to fund the various disability benefits of the Department of Water and Power. Under the funding method used, the total annual contribution to the Disability Fund equals the present value of all future payments for those expected to become disabled during the year, with a further adjustment for any interest credited to the reserves. The present value referred to is for disabilities that “accrue” in a given year and is called the “incurred claims” for the year.

Under this funding method no reserves are expected to accumulate to help cover future claims beyond those incurred during the forthcoming year.

The incurred claims for a year are estimated as the paid claims for the year plus the increase in claim reserves from one fiscal year-end to another. The claim reserve as of any year-end is the present value of all future disability payments on all claims that remain “open” (i.e., still disabled).

Amounts of paid claims, open claims (number and amount), the claim reserves and the general reserves are provided by the Retirement Office and accepted by Segal without audit.

The total annual contribution to the Disability Fund is levied as a dollar rate per \$100 of covered compensation. There are separate rates for Temporary Disability (including Extended Temporary Disability) and Permanent Total Disability; these rates in turn are split between employees and the Department of Water and Power. Employees pay \$1.00 each biweekly payroll period for both Temporary and Permanent Disability benefits.

In subsequent pages we recommend contribution rates for the various benefits based on a review of the past experience of the funds. We present tables that show the actual annual rate per \$100 of covered payroll. However, there has been substantial fluctuation in these rates over the years. Accordingly, we recommend a rate that, in our judgment, reflects a reasonable balance of recent experience and probable future trends.

Our recommended contribution rates also are designed to maintain a general reserve for each fund. The general reserve is maintained primarily to provide funds in the event of adverse experience. In subsequent pages, we state a recommended level for each general reserve that is based on historical practices. However, in practice the general reserve is set equal to any balance of funds at book value available over claim reserves. Thus, it is unlikely that the general reserve will be exactly at recommended levels at any given time. Rather, the recommended level should be regarded as a long-term goal for the general reserve.

In the following sections, we present our detailed analysis of the Temporary Disability Benefits and the Permanent Total Disability Benefits.

Section 2: Actuarial Valuation Results

Chart 1 – Consolidated Summary Statement of Income and Expenses

| | Year Ended June 30, 2023 | Year Ended June 30, 2022 |
|--|--------------------------|--------------------------|
| Contribution income: | | |
| • Employer contributions – temporary disability benefit ¹ | \$13,343,147 | \$13,644,286 |
| • Employer contributions – permanent total disability benefit | 0 | 0 |
| • Employer contributions – supplemental disability benefit | 1,005,096 | 1,486,607 |
| • Employer contributions – administrative expenses | <u>1,280,345</u> | <u>1,226,855</u> |
| Total employer contribution income | \$15,628,588 | \$16,357,748 |
| • Employee contributions – temporary disability benefit ¹ | \$269,474 | \$264,261 |
| • Employee contributions – permanent total disability benefit | <u>269,475</u> | <u>264,261</u> |
| Total employee contribution income | \$538,949 | \$528,522 |
| Investment income: | | |
| • Interest income | \$1,159,933 | \$768,076 |
| • Net appreciation (depreciation) in market value | (1,262,956) | (4,902,210) |
| • Less investment fees | <u>(37,687)</u> | <u>(44,775)</u> |
| Net investment income | <u>\$(140,710)</u> | <u>\$(4,178,909)</u> |
| Total income available for benefits | \$16,026,827 | \$12,707,361 |
| Less benefit payments: | | |
| • Distributions – temporary disability benefit | \$14,896,259 | \$13,839,136 |
| • Distributions – extended temporary disability benefit | 511,407 | 454,775 |
| • Distributions – permanent total disability benefit | 1,929,599 | 2,066,050 |
| • Distributions – supplemental disability benefit | <u>1,005,096</u> | <u>1,486,607</u> |
| Total distributions | \$18,342,361 | \$17,846,568 |
| Administrative expenses | <u>1,278,552</u> | <u>1,224,994</u> |
| Total deductions | \$19,620,913 | \$19,071,562 |
| Net increase (decrease) in reserve | \$(3,594,086) | \$(6,364,201) |

Note: Results may be slightly off due to rounding.

¹ This includes temporary disability and extended temporary disability benefits.

Section 2: Actuarial Valuation Results

Chart 2 – Consolidated Summary Statement of Plan Assets

| | Year Ended June 30, 2023 | Year Ended June 30, 2022 |
|--|--------------------------|--------------------------|
| Cash equivalents¹ | \$1,330,577 | \$162,196 |
| Accounts receivable: | | |
| • Employer contributions | \$3,208,392 | \$3,192,821 |
| • Accrued investment income | 110,302 | 81,663 |
| • Other | 1,923,517 | 2,044,669 |
| • Contingent disability benefit advance | <u>3,310,339</u> | <u>3,310,339</u> |
| <i>Total accounts receivable</i> | <i>\$8,552,550</i> | <i>\$8,629,492</i> |
| Investments: | | |
| • Fixed income | \$31,225,723 | \$35,851,241 |
| • Short-term investments | <u>580,841</u> | <u>560,308</u> |
| <i>Total investments at market value</i> | <i>\$31,806,564</i> | <i>\$36,411,549</i> |
| Total assets | \$41,689,691 | \$45,203,237 |
| <i>Less accounts payable</i> | <i>\$(433,552)</i> | <i>\$(353,012)</i> |
| Net assets at market value | \$41,256,139 | \$44,850,225 |

Note: Results may be slightly off due to rounding.

¹ Net of outstanding checks.

Section 2: Actuarial Valuation Results

Chart 3 – Temporary and Extended Temporary Disability Reserves

| | Year Ended June 30, 2023 | Year Ended June 30, 2022 |
|---|-----------------------------|---------------------------|
| Total reserve at the beginning of the year | \$11,076,774 | \$11,270,955 |
| • Contributions | \$13,612,621 | \$13,908,547 |
| • Benefits paid | (15,407,666) | (14,293,911) |
| • Interest earned | <u>322,260</u> | <u>191,182</u> |
| <i>Change in total reserve</i> | <i><u>\$(1,472,785)</u></i> | <i><u>\$(194,181)</u></i> |
| Total reserve at the end of the year | \$9,603,989 | \$11,076,774 |
| • Number of open claims at end of year | 227 | 235 |
| • Reserve factor ¹ | <u>\$21,000</u> | <u>\$20,900</u> |
| <i>Open claim reserve (Number of open claims x Reserve factor)¹</i> | <i>\$4,767,000</i> | <i>\$4,911,500</i> |
| <i>Pending claim reserve (1/26 x Benefits paid)</i> | <i><u>592,603</u></i> | <i><u>549,766</u></i> |
| Total claim reserve at end of the year | \$5,359,603 | \$5,461,266 |
| Total general reserve at the end of the year (total reserve – total claim reserve) | \$4,244,387 | \$5,615,508 |

Note: Results may be slightly off due to rounding.

¹ As specified in Section IIID(2) of the Plan and provided by the Retirement Office.

Section 2: Actuarial Valuation Results

Chart 4 – Permanent Total Disability (PTD) Reserves

| | Year Ended June 30, 2023 | Year Ended June 30, 2022 |
|---|---------------------------|-----------------------------|
| Total reserve at the beginning of the year | \$30,575,111 | \$31,842,922 |
| • Contributions | \$269,475 | \$264,261 |
| • Benefits paid | (1,929,599) | (2,066,050) |
| • Interest earned | <u>941,685</u> | <u>533,979</u> |
| <i>Change in total reserve</i> | <i><u>\$(718,439)</u></i> | <i><u>\$(1,267,810)</u></i> |
| Total reserve at the end of the year | \$29,856,673 | \$30,575,111 |
| <i>Open (or reported) claim reserve¹</i> <i>(Present value of PTD reported cases)</i> | <i>\$10,142,039</i> | <i>\$10,228,500</i> |
| <i>Pending claim reserve (current year contributions)</i> | <i><u>269,475</u></i> | <i><u>264,261</u></i> |
| Total claim reserve at end of the year | \$10,411,514 | \$10,492,761 |
| Total general reserve at the end of the year (total reserve – total claim reserve) | \$19,445,159 | \$20,082,350 |

Note: Results may be slightly off due to rounding.

¹ Provided by the Retirement Office.

Section 2: Actuarial Valuation Results

B. Temporary and Extended Temporary Disability Benefits

The Temporary Disability Benefits referred to in this section normally commence on the fifteenth calendar day of disability and terminate at the end of the twelfth month of disability. The monthly benefit is 40% to 85% of compensation, depending on length of service and disability. The Extended Temporary Disability Benefits are payable from the end of the twelfth month of disability through the twenty-fourth month of disability if not qualified for Permanent Total Disability. The monthly benefit is 33 1/3% of compensation. The table below shows a history of the contribution rates for the Temporary and Extended Temporary Disability Benefits. The table shown in *Section C* (page 17) includes a summary of the cost of the Temporary Disability Benefits from inception of the Plan to June 30, 2023.

Chart 5 – Rates of Contribution Per \$100 of Compensation for Temporary And Extended Temporary Disability Benefits

| As of June 30 | Rates Per \$100 of Compensation | | |
|---------------|---------------------------------|---------------|--------|
| | By Member | By Department | Total |
| 1939 - 1940 | \$0.36 | \$0.24 | \$0.60 |
| 1941 – 1943 | 0.47 | 0.31 | 0.78 |
| 1943 – 1948 | 0.39 | 0.26 | 0.65 |
| 1948 – 1954 | 0.59 | 0.39 | 0.98 |
| 1954 – 1957 | 0.47 | 0.31 | 0.78 |
| 1958 - 1959 | 0.36 | 0.24 | 0.60 |
| 1960 – 1974 | 0.27 | 0.18 | 0.45 |
| 1975 – 1976 | 0.39 | 0.26 | 0.65 |
| 1976 – 1981 | 0.45 | 0.30 | 0.75 |
| 1981 - 1988 | * | * | 0.75 |
| 1988 – 1993 | * | * | 0.61 |
| 1994 | * | * | 0.45 |
| 1995 – 1996 | * | * | 0.35 |
| 1997 | * | * | 0.30 |
| 1998 – 1999 | * | * | 0.25 |

Section 2: Actuarial Valuation Results

Chart 5 – Rates of Contribution Per \$100 of Compensation for Temporary And Extended Temporary Disability Benefits (continued)

| As of June 30 | Rates Per \$100 of Compensation | | |
|---------------|---------------------------------|---------------|-------------------|
| | By Member | By Department | Total |
| 2000 – 2001 | * | * | \$0.35 |
| 2002 – 2004 | * | * | 0.68 ¹ |
| 2005 – 2006 | * | * | 0.74 |
| 2007 | * | * | 1.55 |
| 2008 | * | * | 2.18 |
| 2009 | * | * | 1.73 |
| 2010 | * | * | 1.37 |
| 2011 | * | * | 1.32 |
| 2012 | * | * | 1.46 |
| 2013 | * | * | 1.55 |
| 2014 | * | * | 1.54 |
| 2015 | * | * | 1.68 |
| 2016 | * | * | 1.74 |
| 2017 | * | * | 1.55 |
| 2018 | * | * | 1.47 |
| 2019 | * | * | 1.34 |
| 2020 | * | * | 1.33 |
| 2021 | * | * | 1.27 |
| 2022 | * | * | 1.09 |
| 2023 | * | * | 1.07 |

* From January 1980 to January 1984, employees paid \$1 per month and the Department paid the balance of the total rate. As of January 1984, the employee amount was increased to \$1 per biweekly payroll period.

¹ Starting with the July 1, 2000 valuation, this includes both the Temporary Disability Benefit and the Extended Temporary Disability Benefit.

Section 2: Actuarial Valuation Results

For Temporary and Extended Temporary Disability, the claim reserve is calculated as the sum of:

1. The open claim reserve, which is the number of open claims times the reserve factor specified in Section III D (2) of the Plan, and
2. The pending claim reserve, which is 1/26 of the benefits paid during the preceding fiscal year.

Pursuant to Section III D (2) of the Plan, the Temporary and Extended Temporary Disability open claim reserve at the end of each year is determined by multiplying the number of open claims at the end of the year by a reserve factor of \$21,000 for 2023. The reserve factor has increased from \$20,900 for 2022. The current reserve factor of \$21,000 was provided by the Retirement Office, and accepted by Segal without audit. The details of the claim reserve and general reserve are shown in *Section 2, Chart 3*.

Incurred claims at an annual rate per \$100 of covered payroll are calculated as described in *Section 2, Subsection A* and *Section 3, Exhibit 1*. Since 1980, the goal for the general reserve has been to maintain it at approximately 20% of the claim reserve. The claim reserve is \$5,359,603 as of June 30, 2023. Thus, the “target” is equal to \$1,071,921 (20% x \$5,359,603), as compared to the actual general reserve of \$4,244,387 as of June 30, 2023. Therefore, as of June 30, 2023, the general reserve surpasses the funding target by \$3,172,466. The Board adopted the funding period for the general reserve to reach the target reserve level to be a five-year rolling period effective with the July 1, 2019 valuation.

Contribution Development

The Temporary and Extended Temporary Disability Experience Table as shown in *Section 2, Subsection C* indicates that the average cost for the last 20 years per \$100 of covered payroll is \$1.44 for both the Temporary and Extended Temporary Disability Benefits. However, based on the two-year average distributions, the total contribution rate needed to pay for expected claims is estimated at \$1.22 per \$100 of covered payroll. In order to reduce the general reserve to the target level over the current policy period of five years, we recommend a total contribution of \$1.17 per \$100 of covered payroll. After taking into account the employee contribution of \$1 per biweekly payroll period (which amounts to approximately \$0.02 per \$100 of covered payroll), the net recommended Department rate is \$1.15 per \$100 of covered payroll. For comparison, the recommended contribution rate in the prior valuation was \$1.05 per \$100 of covered payroll.

In 2000, \$11 million was transferred over from the Permanent Total Disability Fund and the entire Temporary and Extended Temporary Disability Benefit became payable from this Fund. Then, from 2000 through 2007, the general reserve followed a decreasing trend due to the contribution rates being lower than the increased claim rates. However, this trend reversed itself during 2008 through 2010 and then decreased during 2010 to 2012. During 2013, the general reserve increased due to a decrease in the claim reserve and a decrease in benefit payments. During 2014, the general reserve decreased due to an increase in the claims reserve and the increase in benefit payments. During 2015 to 2021, the general reserve increased due to the contribution rates being higher than the claim rates. During 2022, the general reserve decreased due to an increase in the claims reserve and the increase in benefit payments. The general reserve decreased from the last year due to an increase in benefit payments. The claim reserve has decreased from the last year due to a decrease in open claims, offset to some degree by an increase in the reserve factor determined by the Retirement Office as noted above.

Section 2: Actuarial Valuation Results

C. Temporary and Extended Temporary Disability Experience Table

| Year Ended June 30 | Covered Payroll | Claims and Expenses Paid | Claims and Expenses Incurred | Annual Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | Cumulative Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | General Reserve |
|-----------------------|-----------------|-----------------------------|------------------------------------|--|---|-----------------|
| 1939 | \$9,705,000 | \$33,138 | \$44,138 | \$0.45 | \$0.45 | \$14,090 |
| 1940 | 14,015,000 | 60,138 | 65,797 | 0.47 | 0.46 | 45,061 |
| 1941 | 13,350,000 | 73,867 | 78,867 | 0.59 | 0.51 | 70,323 |
| 1942 | 13,415,000 | 79,870 | 79,870 | 0.60 | 0.53 | 95,090 |
| 1943 | 12,645,000 | 87,933 | 87,933 | 0.70 | 0.56 | 89,351 |
| 1944 | 12,400,000 | 108,197 | 113,197 | 0.91 | 0.62 | 56,753 |
| 1945 | 12,396,000 | 98,138 | 104,138 | 0.84 | 0.65 | 33,189 |
| 1946 | 15,293,000 | 123,539 | 123,539 | 0.81 | 0.68 | 9,056 |
| 1947 | 20,027,000 | 156,483 | 165,483 | 0.83 | 0.70 | (8,741) |
| 1948 | 23,316,000 | 161,558 | 158,558 | 0.68 | 0.70 | 61,194 |
| 1949 | 27,386,000 | 157,975 | 155,975 | 0.57 | 0.68 | 173,506 |
| 1950 | 30,105,000 | 163,475 | 175,476 | 0.58 | 0.66 | 293,063 |
| 1951 | 30,130,000 | 180,286 | 177,286 | 0.59 | 0.65 | 411,057 |
| 1952 | 37,792,000 | 204,381 | 208,381 | 0.55 | 0.64 | 573,038 |
| 1953 | 40,678,000 | 228,354 | 262,354 | 0.64 | 0.64 | 757,895 |
| 1954 | 44,915,000 | 255,289 | 244,289 | 0.54 | 0.63 | 892,666 |
| 1955 | 50,632,000 | 241,898 | 215,898 | 0.43 | 0.60 | 1,102,717 |
| 1956 | 53,988,000 | 244,824 | 242,824 | 0.45 | 0.59 | 1,317,674 |
| 1957 | 56,225,000 | 268,883 | 280,883 | 0.50 | 0.58 | 1,419,437 |
| 1958 | 63,087,000 | 286,924 | 291,924 | 0.46 | 0.56 | 1,557,783 |

Section 2: Actuarial Valuation Results

C. Temporary and Extended Temporary Disability Experience Table (continued)

| Year Ended June 30 | Covered Payroll | Claims and Expenses Paid | Claims and Expenses Incurred | Annual Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | Cumulative Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | General Reserve |
|-----------------------|-----------------|-----------------------------|------------------------------------|--|---|-----------------|
| 1959 | \$65,930,000 | \$368,644 | \$414,644 | \$0.63 | \$0.57 | \$1,578,671 |
| 1960 | 65,993,000 | 388,060 | 305,260 | 0.46 | 0.56 | 1,628,091 |
| 1961 | 68,055,000 | 381,033 | 380,833 | 0.56 | 0.56 | 1,611,264 |
| 1962 | 73,192,000 | 393,013 | 404,413 | 0.55 | 0.56 | 1,593,485 |
| 1963 | 78,546,000 | 500,671 | 512,371 | 0.65 | 0.57 | 1,491,219 |
| 1964 | 83,672,000 | 562,565 | 518,765 | 0.62 | 0.57 | 1,401,956 |
| 1965 | 87,976,000 | 536,280 | 543,480 | 0.62 | 0.58 | 1,304,304 |
| 1966 | 92,885,000 | 554,020 | 548,920 | 0.59 | 0.58 | 1,220,641 |
| 1967 | 98,253,000 | 566,985 | 580,185 | 0.59 | 0.58 | 1,127,344 |
| 1968 | 103,283,000 | 634,571 | 633,871 | 0.61 | 0.58 | 999,592 |
| 1969 | 111,396,000 | 704,242 | 703,542 | 0.63 | 0.58 | 833,701 |
| 1970 | 121,866,000 | 767,820 | 775,170 | 0.64 | 0.59 | 637,461 |
| 1971 | 131,730,000 | 889,228 | 897,478 | 0.68 | 0.59 | 354,292 |
| 1972 | 140,154,000 | 859,374 | 864,575 | 0.62 | 0.60 | 132,771 |
| 1973 | 143,834,000 | 1,011,796 | 1,034,196 | 0.72 | 0.61 | (253,712) |
| 1974 | 146,962,000 | 1,140,512 | 1,175,512 | 0.80 | 0.62 | (483,644) |
| 1975 | 156,628,000 | 1,190,786 | 1,206,236 | 0.77 | 0.63 | (702,745) |
| 1976 | 163,951,000 | 1,304,122 | 1,325,572 | 0.81 | 0.64 | (852,027) |
| 1977 | 165,258,000 | 1,300,411 | 1,312,161 | 0.79 | 0.65 | (959,819) |
| 1978 | 172,256,000 | 1,404,379 | 1,393,979 | 0.81 | 0.66 | (1,103,713) |

Section 2: Actuarial Valuation Results

C. Temporary and Extended Temporary Disability Experience Table (continued)

| Year Ended June 30 | Covered Payroll | Claims and Expenses Paid | Claims and Expenses Incurred | Annual Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | Cumulative Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | General Reserve |
|-----------------------|-----------------|-----------------------------|------------------------------------|--|---|-----------------|
| 1979 | \$177,648,000 | \$1,378,601 | \$1,410,042 | \$0.79 | \$0.67 | (\$107,066) |
| 1980 | 175,962,000 | 1,400,805 | 1,350,503 | 0.77 | 0.67 | (132,312) |
| 1981 | 202,902,000 | 1,496,480 | 1,514,388 | 0.75 | 0.68 | 64,895 |
| 1982 | 245,734,000 | 1,394,848 | 1,438,322 | 0.59 | 0.67 | 505,214 |
| 1983 | 274,644,000 | 1,687,704 | 1,678,899 | 0.61 | 0.67 | 957,656 |
| 1984 | 288,311,000 | 1,789,909 | 1,864,263 | 0.65 | 0.67 | 1,370,865 |
| 1985 | 310,359,000 | 1,975,135 | 1,977,432 | 0.64 | 0.66 | 1,875,475 |
| 1986 | 327,365,000 | 2,210,661 | 2,251,124 | 0.69 | 0.67 | 2,157,948 |
| 1987 | 360,065,000 | 1,969,935 | 2,005,236 | 0.56 | 0.66 | 2,728,701 |
| 1988 | 400,537,000 | 2,290,491 | 2,260,068 | 0.56 | 0.65 | 3,348,749 |
| 1989 | 394,086,000 | 2,261,337 | 2,248,205 | 0.57 | 0.64* | 3,849,928 |
| 1990 | 411,248,000 | 2,171,299 | 2,160,636 | 0.53 | 0.62* | 4,580,470 |
| 1991 | 402,648,000 | 2,233,586 | 2,194,051 | 0.54 | 0.59* | 5,286,005 |
| 1992 | 475,252,000 | 2,354,177 | 2,375,545 | 0.50 | 0.59* | 6,298,902 |
| 1993 | 464,000,000 | 2,348,727 | 2,373,719 | 0.51 | 0.58* | 6,888,804 |
| 1994 | 470,000,000 | 2,516,640 | 2,567,498 | 0.55 | 0.57* | 6,709,671 |
| 1995 | 450,713,000 | 2,964,258 | 2,933,789 | 0.65 | 0.57* | 5,845,370 |
| 1996 | 441,956,000 | 2,225,030 | 2,076,306 | 0.47 | 0.54* | 5,593,988 |
| 1997 | 472,678,000 | 2,019,565 | 2,016,440 | 0.43 | 0.53* | 5,286,560 |
| 1998 | 417,262,000 | 2,416,341 | 2,473,601 | 0.59 | 0.53* | 4,210,250 |

Section 2: Actuarial Valuation Results

C. Temporary and Extended Temporary Disability Experience Table (continued)

| Year Ended June 30 | Covered Payroll | Claims and Expenses Paid | Claims and Expenses Incurred | Annual Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | Cumulative Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | General Reserve |
|-----------------------|-----------------|-----------------------------|------------------------------------|--|---|-----------------|
| 1999 | \$355,148,948 | \$1,858,677 | \$2,016,329 | \$0.57 | \$0.53* | \$3,371,035 |
| 2000 | 369,509,233 | 4,682,621 | 4,809,494 | 1.30 | 1.30** | 13,339,138*** |
| 2001 | 403,265,472 | 4,211,036 | 4,426,638 | 1.10 | 1.20** | 11,141,509 |
| 2002 | 430,397,884 | 4,584,284 | 4,528,640 | 1.05 | 1.15** | 9,999,795 |
| 2003 | 472,432,303 | 5,306,242 | 5,388,510 | 1.14 | 1.15** | 8,353,541 |
| 2004 | 522,227,280 | 6,210,253 | 6,246,423 | 1.20 | 1.16** | 5,966,023 |
| 2005 | 554,839,816 | 7,298,197 | 7,480,641 | 1.35 | 1.19** | 2,715,895 |
| 2006 | 574,315,572 | 8,897,820 | 9,028,144 | 1.57 | 1.24** | (2,009,091) |
| 2007 | 604,514,525 | 9,502,988 | 9,556,168 | 1.58 | 1.29** | (4,328,285) |
| 2008 | 623,634,208 | 9,578,292 | 9,540,484 | 1.53 | 1.31** | (1,103,230) |
| 2009 | 696,704,083 | 8,889,938 | 9,337,463 | 1.34 | 1.32** | 2,719,985 |
| 2010 | 767,912,436 | 10,947,771 | 11,262,418 | 1.47 | 1.33** | 3,006,739 |
| 2011 | 791,760,493 | 11,720,424 | 13,268,642 | 1.68 | 1.36** | 421,664 |
| 2012 | 805,607,436 | 12,469,833 | 13,051,706 | 1.62 | 1.38** | (1,243,338) |
| 2013 | 817,421,028 | 12,130,514 | 11,770,414 | 1.44 | 1.38** | (538,036) |
| 2014 | 819,923,866 | 14,171,121 | 14,648,006 | 1.79 | 1.41** | (2,476,726) |
| 2015 | 839,213,254 | 13,158,645 | 13,500,304 | 1.61 | 1.42** | (2,270,074) |
| 2016 | 861,818,854 | 12,614,416 | 12,573,684 | 1.46 | 1.43** | 19,712 |
| 2017 | 892,332,196 | 13,251,004 | 13,616,488 | 1.53 | 1.43** | 1,003,421 |
| 2018 | 953,635,670 | 13,368,674 | 13,390,600 | 1.40 | 1.43** | 2,118,648 |

Section 2: Actuarial Valuation Results

C. Temporary and Extended Temporary Disability Experience Table (continued)

| Year Ended June 30 | Covered Payroll | Claims and Expenses Paid | Claims and Expenses Incurred | Annual Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | Cumulative Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | General Reserve |
|-----------------------|-----------------|-----------------------------|------------------------------------|--|---|-----------------|
| 2019 | \$1,028,212,002 | \$13,673,983 | \$13,934,525 | \$1.36 | \$1.43** | \$2,883,277 |
| 2020 | 1,130,066,141 | 14,987,328 | 14,025,141 | 1.24 | 1.42** | 4,238,519 |
| 2021 | 1,121,883,556 | 11,986,880 | 12,172,378 | 1.08 | 1.42** | 6,875,321 |
| 2022 | 1,178,016,102 | 14,293,911 | 15,359,543 | 1.30 | 1.43** | 5,615,508 |
| 2023 | 1,259,245,870 | 15,407,666 | 15,306,003 | 1.22 | 1.44** | 4,244,387 |

* Average of ten most recent rates prior to the addition of the entire Temporary and Extended Temporary Disability Benefit.

** Average of rates after addition of the entire Temporary and Extended Temporary Disability Benefits. Starting in 2019, average of rates for last 20 years.

*** In 2000, \$11 million was transferred from the Permanent Total Disability Fund. Starting in 2000, the entire Temporary and Extended Temporary Disability Benefit became payable from this Fund.

Note: Starting in 1987, expenses are not included.

Section 2: Actuarial Valuation Results

D. Permanent Total Disability Benefits

Permanent Total Disability Benefits may commence as early as the thirteenth month of disability or as late as the twenty-fifth month, depending on the member's condition and Extended Temporary Disability Coverage. The monthly benefit is an amount equal to 40% of the member's compensation. Cost-of-living benefits, with a 3% maximum increase per year for Tier 1 and a 2% maximum increase per year for Tier 2 (similar to those provided to service retirees), were adopted as of April 1, 1970. The table below shows a history of the contribution rates for the Permanent Total Disability Benefits. The table shown in *Section 2, Subsection E* (page 24) includes a summary of the cost of Permanent Total Disability Benefits from inception of the Plan to June 30, 2023.

Chart 6 – Rates of Contribution Per \$100 of Compensation for Permanent Total Disability Benefits

| As of June 30 | Rates Per \$100 of Compensation | | |
|---------------|---------------------------------|---------------|--------|
| | By Member | By Department | Total |
| 1938 – 1942 | \$0.62 | \$0.41 | \$1.03 |
| 1942 – 1947 | 0.52 | 0.34 | 0.86 |
| 1947 – 1953 | 0.62 | 0.41 | 1.03 |
| 1953 – 1956 | 0.52 | 0.34 | 0.86 |
| 1956 – 1959 | 0.36 | 0.24 | 0.60 |
| 1959 – 1969 | 0.21 | 0.14 | 0.35 |
| 1969 – 1973 | 0.12 | 0.08 | 0.20 |
| 1973 – 1975 | 0.24 | 0.16 | 0.40 |
| 1975 – 1980 | 0.36 | 0.24 | 0.60 |
| 1980 – 1981 | * | * | 0.60 |
| 1981 – 1987 | * | * | 0.55 |
| 1987 – 1992 | * | * | 0.25 |
| 1992 – 1998 | * | * | 0.05 |
| 1998 – 2023 | * | 0.00 | * |

* From January 1980 to January 1984, employees paid \$1 per month and the Department paid the balance of the total rate. As of January 1984, the employee amount was increased to \$1 per biweekly payroll period.

Section 2: Actuarial Valuation Results

For Permanent Total Disability Benefit, the claim reserve is calculated as the sum of:

1. The open (or reported) claim reserve, which is the present value of future disability benefits for open claims, and
2. The pending claim reserve, which is the contributions made during the fiscal year.

The rate of interest used by the Board in the present value calculation is 2.75%. The incurred claims and the annual experience rate per \$100 of covered payroll were calculated as described in *Section 2, Subsection A* and *Section 3, Exhibit 3*. The details of the claim reserve and general reserve are shown in *Section 2, Chart 4*. The current goal for the general reserve is that it be maintained at approximately 20% of the claim reserve. The claim reserve is \$10,411,514 as of June 30, 2023. Thus, the “target” is equal to \$2,082,303 (20% x \$10,411,514), as compared to the actual general reserve of \$19,445,159 as of June 30, 2023. Therefore, as of June 30, 2023, the general reserve surpasses the funding target by \$17,362,856.

Contribution Development

The Permanent Total Disability Experience Table as shown in *Section 2, Subsection E* indicates that the average cost for the last 20 years per \$100 of covered payroll is \$0.22 before taking into account interest on the general reserve. The annual rate of contribution as of June 30, 2023 would have been \$0.15 per \$100 of covered payroll before taking into account interest on the general reserve. Based on reserves as of June 30, 2023, the expected interest credit for the next year is \$534,742, or \$0.04 per \$100 of covered payroll (assuming a 2.75% investment return). The expected interest on the reserves would reduce the \$0.22 per \$100 of payroll and \$0.15 per \$100 of payroll contribution rates to \$0.18 and \$0.11, respectively.

The general reserve is so large that interest alone is expected to be enough to pay a significant portion of the claims for many years to come. Thus, we recommend that the Board maintain the Department contribution of zero cents per \$100 of covered compensation so that the general reserve can be reduced closer to its target level over time.

For several years, the experience table has shown a downward trend in the annual cost per \$100 of covered payroll. In 1983, the claim cost returned to earlier levels, but this was artificially high due to the change in reflecting cost-of-living increases. It appears that the Fund has reached a somewhat stable cumulative rate of claim costs, although year-by-year costs are still fluctuating.

Section 2: Actuarial Valuation Results

E. Permanent Total Disability Experience Table

| Year Ended June 30 | Covered Payroll | Claims and Expenses Paid | Claims and Expenses Incurred* | Annual Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll* | Cumulative Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | General Reserve |
|-----------------------|-----------------|-----------------------------|-------------------------------------|---|---|-----------------|
| 1939 | \$9,742,000 | \$3,711 | \$87,711 | \$0.90 | \$0.90 | \$13,604 |
| 1940 | 13,989,000 | 21,342 | 103,588 | 0.74 | 0.81 | 56,344 |
| 1941 | 13,266,000 | 24,788 | 74,936 | 0.56 | 0.72 | 122,383 |
| 1942 | 13,306,000 | 32,566 | 91,896 | 0.69 | 0.71 | 175,539 |
| 1943 | 12,574,000 | 43,318 | 74,067 | 0.59 | 0.69 | 219,667 |
| 1944 | 12,319,000 | 58,699 | 83,340 | 0.68 | 0.69 | 252,063 |
| 1945 | 12,309,000 | 85,014 | 146,059 | 1.19 | 0.76 | 218,072 |
| 1946 | 15,152,000 | 89,721 | 241,219 | 1.59 | 0.88 | 111,847 |
| 1947 | 19,836,000 | 109,058 | 270,398 | 1.36 | 0.96 | 18,764 |
| 1948 | 23,235,000 | 120,837 | 175,320 | 0.75 | 0.93 | 80,980 |
| 1949 | 27,275,000 | 136,224 | 133,200 | 0.49 | 0.86 | 233,675 |
| 1950 | 29,974,000 | 138,210 | 96,082 | 0.32 | 0.78 | 458,989 |
| 1951 | 29,990,000 | 135,367 | 144,943 | 0.48 | 0.74 | 632,438 |
| 1952 | 37,565,000 | 134,551 | 11,043 | 0.03 | 0.64 | 1,044,175 |
| 1953 | 40,464,000 | 156,803 | 403,365 | 1.00 | 0.76 | 1,055,235 |
| 1954 | 44,971,000 | 184,131 | 166,033 | 0.37 | 0.64 | 1,316,150 |
| 1955 | 49,389,000 | 192,397 | 234,939 | 0.48 | 0.62 | 1,547,758 |
| 1956 | 50,836,000 | 179,587 | 14,956 | 0.03 | 0.56 | 2,021,772 |
| 1957 | 52,720,000 | 180,814 | 249,641 | 0.47 | 0.55 | 2,157,769 |
| 1958 | 58,829,000 | 152,089 | 33,695 | 0.06 | 0.50 | 2,560,220 |

Section 2: Actuarial Valuation Results

E. Permanent Total Disability Experience Table (continued)

| Year Ended June 30 | Covered Payroll | Claims and Expenses Paid | Claims and Expenses Incurred* | Annual Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll* | Cumulative Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | General Reserve |
|-----------------------|-----------------|-----------------------------|-------------------------------------|---|---|-----------------|
| 1959 | \$61,495,000 | \$146,785 | \$381,672 | \$0.62 | \$0.51 | \$2,615,720 |
| 1960 | 64,964,000 | 187,826 | 367,442 | 0.57 | 0.52 | 2,572,558 |
| 1961 | 67,012,000 | 216,655 | 509,906 | 0.76 | 0.54 | 2,394,036 |
| 1962 | 71,708,000 | 230,601 | 205,588 | 0.29 | 0.52 | 2,526,768 |
| 1963 | 77,236,000 | 227,517 | 327,404 | 0.42 | 0.51 | 2,560,680 |
| 1964 | 82,455,000 | 240,242 | 319,583 | 0.39 | 0.50 | 2,624,717 |
| 1965 | 86,833,000 | 248,687 | 291,596 | 0.34 | 0.48 | 2,736,710 |
| 1966 | 91,488,000 | 277,855 | 395,424 | 0.43 | 0.48 | 2,763,324 |
| 1967 | 96,225,000 | 286,761 | 202,661 | 0.21 | 0.46 | 3,009,729 |
| 1968 | 101,556,000 | 298,893 | 401,943 | 0.40 | 0.46 | 3,079,294 |
| 1969 | 109,554,000 | 334,656 | 731,158 | 0.67 | 0.47 | 2,840,069 |
| 1970 | 120,246,000 | 374,358 | 729,926 | 0.61 | 0.48 | 2,446,761 |
| 1971 | 130,096,000 | 376,744 | 245,854 | 0.19 | 0.46 | 2,561,379 |
| 1972 | 138,857,000 | 446,816 | 1,012,405 | 0.73 | 0.48 | 1,902,860 |
| 1973 | 143,308,000 | 502,274 | 930,350 | 0.65 | 0.49 | 1,283,193 |
| 1974 | 146,886,000 | 582,628 | 1,244,725 | 0.85 | 0.52 | 651,223 |
| 1975 | 156,760,000 | 682,830 | 1,483,906 | 0.95 | 0.54 | (214,183) |
| 1976 | 164,183,000 | 761,200 | 1,332,986 | 0.81 | 0.56 | (644,432) |
| 1977 | 165,224,000 | 867,586 | 1,629,326 | 0.99 | 0.59 | (1,348,628) |
| 1978 | 171,767,000 | 920,799 | 1,042,386 | 0.61 | 0.59 | (1,432,449) |

Section 2: Actuarial Valuation Results

E. Permanent Total Disability Experience Table (continued)

| Year Ended June 30 | Covered Payroll | Claims and Expenses Paid | Claims and Expenses Incurred* | Annual Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll* | Cumulative Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | General Reserve |
|-----------------------|-----------------|-----------------------------|-------------------------------------|---|---|-----------------|
| 1979 | \$176,576,000 | \$907,163 | \$972,121 | \$0.55 | \$0.59 | \$1,348,852 |
| 1980 | 177,340,000 | 912,703 | 837,008 | 0.47 | 0.58 | 1,887,689 |
| 1981 | 202,994,000 | 1,006,200 | 369,334 | 0.18 | 0.55 | 2,750,719 |
| 1982 | 245,580,000 | 946,778 | 29,798 | 0.01 | 0.51 | 4,404,597 |
| 1983 | 274,629,000 | 978,647 | 1,755,073 | 0.64** | 0.52 | 4,534,031 |
| 1984 | 288,289,000 | 1,000,319 | 725,141 | 0.21 | 0.50 | 5,879,532 |
| 1985 | 310,360,000 | 1,006,631 | 591,410 | 0.19 | 0.48 | 7,623,235 |
| 1986 | 321,523,000 | 974,376 | 569,547 | 0.18 | 0.46 | 9,284,884 |
| 1987 | 360,072,000 | 901,033 | 121,268 | 0.03 | 0.45 | 11,090,748 |
| 1988 | 401,029,000 | 946,468 | 840,245 | 0.21 | 0.44 | 13,253,261 |
| 1989 | 394,084,000 | 1,024,870 | 1,563,694 | 0.40 | 0.47*** | 13,929,718 |
| 1990 | 411,248,000 | 1,038,907 | 594,815 | 0.14 | 0.45*** | 15,723,997 |
| 1991 | 405,132,000 | 1,046,404 | 739,845 | 0.18 | 0.45*** | 18,108,405 |
| 1992 | 472,984,000 | 1,054,203 | 989,998 | 0.21 | 0.42*** | 20,483,790 |
| 1993 | 464,000,000 | 1,102,722 | 1,652,617 | 0.36 | 0.41*** | 21,843,275 |
| 1994 | 470,000,000 | 1,058,778 | 320,344 | 0.07 | 0.37*** | 24,150,799 |
| 1995 | 515,122,000 | 1,059,537 | 1,506,726 | 0.29 | 0.34*** | 25,312,906 |
| 1996 | 456,604,000 | 1,027,066 | 1,230,694 | 0.27 | 0.27*** | 26,514,847 |
| 1997 | 460,540,000 | 930,321 | 1,166,197 | 0.25 | 0.27*** | 28,156,245 |
| 1998 | 432,750,000 | 1,022,029 | 839,204 | 0.19 | 0.25*** | 30,206,085 |

Section 2: Actuarial Valuation Results

E. Permanent Total Disability Experience Table (continued)

| Year Ended June 30 | Covered Payroll | Claims and Expenses Paid | Claims and Expenses Incurred* | Annual Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll* | Cumulative Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | General Reserve |
|-----------------------|-----------------|-----------------------------|-------------------------------------|---|---|-----------------|
| 1999 | \$355,148,948 | \$944,740 | \$1,257,860 | \$0.35 | \$0.24*** | \$32,320,298 |
| 2000 | 369,509,233 | 1,023,333 | 1,336,453 | 0.36 | 0.24*** | 22,231,871 |
| 2001 | 403,265,472 | 1,037,601 | 681,004 | 0.17 | 0.24*** | 24,428,829 |
| 2002 | 430,397,884 | 1,107,061 | 2,760,650 | 0.64 | 0.27*** | 23,552,296 |
| 2003 | 472,432,303 | 1,154,061 | 1,451,604 | 0.31 | 0.25*** | 24,159,068 |
| 2004 | 522,227,280 | 1,235,285 | 2,557,099 | 0.49 | 0.26*** | 23,211,839 |
| 2005 | 554,839,816 | 1,344,393 | 1,237,126 | 0.22 | 0.26*** | 25,396,120 |
| 2006 | 574,315,572 | 1,416,598 | 684,738 | 0.12 | 0.26*** | 26,438,032 |
| 2007 | 604,514,525 | 1,493,732 | 2,624,785 | 0.43 | 0.28*** | 25,697,531 |
| 2008 | 623,634,208 | 1,542,574 | 2,366,329 | 0.38 | 0.29*** | 25,256,078 |
| 2009 | 696,704,083 | 1,579,230 | 2,615,312 | 0.38 | 0.29*** | 24,645,343 |
| 2010 | 767,912,436 | 1,671,993 | 703,497 | 0.09 | 0.29*** | 25,810,871 |
| 2011 | 791,760,493 | 2,012,392 | 422,748 | 0.05 | 0.28*** | 27,094,608 |
| 2012 | 805,607,436 | 1,837,781 | 406,382 | 0.05 | 0.27*** | 28,145,999 |
| 2013 | 817,421,028 | 1,853,493 | 1,452,570 | 0.18 | 0.26*** | 27,886,706 |
| 2014 | 819,923,866 | 1,883,397 | 1,437,362 | 0.18 | 0.27*** | 27,842,135 |
| 2015 | 839,213,254 | 1,840,316 | 3,325,516 | 0.40 | 0.27*** | 25,466,109 |
| 2016 | 861,818,854 | 1,734,775 | 796,486 | 0.09 | 0.26*** | 25,643,332 |
| 2017 | 892,332,196 | 1,700,103 | 3,680,032 | 0.41 | 0.27*** | 22,846,141 |
| 2018 | 953,635,670 | 1,853,258 | 2,592,793 | 0.27 | 0.28*** | 21,304,975 |

Section 2: Actuarial Valuation Results

E. Permanent Total Disability Experience Table (continued)

| Year Ended June 30 | Covered Payroll | Claims and Expenses Paid | Claims and Expenses Incurred* | Annual Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll* | Cumulative Rate of Incurred Claims and Expenses Per \$100 of Covered Payroll | General Reserve |
|-----------------------|-----------------|-----------------------------|-------------------------------------|---|---|-----------------|
| 2019 | \$1,028,212,002 | \$1,901,678 | \$2,056,125 | \$0.20 | \$0.27*** | \$20,707,032 |
| 2020 | 1,130,066,141 | 1,990,431 | 1,619,054 | 0.14 | 0.26*** | 20,594,416 |
| 2021 | 1,121,883,556 | 1,963,922 | 1,237,227 | 0.11 | 0.26*** | 20,239,478 |
| 2022 | 1,178,016,102 | 2,066,050 | 955,367 | 0.08 | 0.23*** | 20,082,350 |
| 2023 | 1,259,245,870 | 1,929,599 | 1,848,352 | 0.15 | 0.22*** | 19,445,159 |

* Reflects credit of interest earnings on Claim Reserves but not on the General Reserve.

** This rate is artificially high due to the introduction of cost-of-living increases in the Claim Reserve Calculation.

*** Average of rates for last 20 years.

Note: Starting in 1987, expenses are not included.

Section 3: Supplemental Information

Exhibit 1 – Actuarial Assumptions and Methods Used for Temporary and Extended Temporary Disability Benefit

| | |
|--------------------------------------|--|
| Plan Year: | July 1 through June 30 |
| Definition of Active Member: | First day of biweekly payroll period following employment for new Department employees or immediately following transfer from other City departments. |
| Projected Covered Payroll: | \$1,443,732,069 for 2023-2024 plan year. |
| Projected Distributions: | \$17,593,972 for first year (Projected Covered Payroll times two-year average of actual distributions as a percent of actual payroll) increasing 3.00% per year thereafter. |
| Net Investment Return: | 2.75%, net of investment expenses. The information and analysis used in selecting this assumption is shown in the Review of Investment Return Assumption for Death and Disability Funds letter dated May 20, 2022. |
| Consumer Price Index (CPI): | Increase of 2.50% per year. |
| Payroll Growth: | Increase of 3.00% per year, based on inflation of 2.50% plus “across the board” salary increases of 0.50% per year. This assumption is used to project contributions and distributions in determining the target general reserve at the end of the fixed five-year period. |
| Member Contribution Rate: | Employees start contributing on the first day of the payroll period following the completion of 26 continuous weeks of Department and/or City service at the rate of \$1.00 for each biweekly payroll period. |
| Department Contribution Rate: | Rate recommended by Board’s Actuary multiplied by the total monthly equivalent of compensation. |
| Funding Method: | Annual contributions equal the present value of all future disability payments for those expected to become disabled during the year with a further adjustment for interest credited to the reserves. Subject to modification by the Board’s funding policy. |
| Funding Policy: | Recommend a contribution rate to reach a target general reserve equal to 20% of the claim reserve at the end of a fixed (rolling) five-year period. |
| Claim Reserve: | The sum of the Open Claim Reserve and the Pending Claim Reserve. |

Section 3: Supplemental Information

Exhibit 1 – Actuarial Assumptions and Methods Used for Temporary and Extended Temporary Disability Benefit (continued)

| | |
|---|--|
| Open Claim Reserve: | The number of open claims times the reserve factor specified in Section IIID(2) of the Plan. The reserve factor was increased to \$15,050 in 2012, \$16,000 in 2013, \$17,600 in 2014, \$18,450 in 2015, \$18,700 in 2016, decreased to \$18,100 in 2017, increased to \$18,400 in 2018, \$19,200 in 2019, \$20,300 in 2020, \$20,600 in 2021, \$20,900 in 2022 and \$21,000 in 2023. These reserve factors are provided by the Retirement Office and accepted by Segal without audit. |
| Pending Claim Reserve: | 1/26 of the total benefits paid during the preceding fiscal year. |
| Incurred Claims: | Paid claims for the year plus the increase in claim reserves. |
| Changed Actuarial Assumptions and Methods: | There have been no changes in assumptions since the prior valuation. |

Section 3: Supplemental Information

Exhibit 2 – Summary of Temporary and Extended Temporary Disability Benefit

| Age Requirement: | Any age | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|------------|---|------------|--|--|----------------------|------------------|------------|------------|------------|------------|----------|---------|---------|--------|----------|----------|---------|---------|---------|---------|----------|----------|---------|----------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----|----------|----------|----------|----------|----------|----|----------|----------|----------|----------|----------|----|----------|----------|----------|----------|----------|----|----------|----------|----------|----------|---------|----|----------|--|----------|----------|---------|----|
| Service Requirement: | Six months of continuous service. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temporary Disability Benefit: | <p>The biweekly benefit is a percentage of the biweekly compensation payable from the fifteenth day of disability through the end of the twelfth month of disability. The percentage is based on the following table.</p> <table border="1"> <thead> <tr> <th colspan="2">Period of Continuous Service</th> <th colspan="4">Maximum Period Payable at Percentage of Compensation</th> </tr> <tr> <th>Not less than</th> <th>Less than</th> <th>85%</th> <th>60%</th> <th>50%</th> <th>40%</th> </tr> </thead> <tbody> <tr> <td>6 months</td> <td>3 Years</td> <td>2 Weeks</td> <td>1 Week</td> <td>26 Weeks</td> <td>21 Weeks</td> </tr> <tr> <td>3 Years</td> <td>5 Years</td> <td>4 Weeks</td> <td>2 Weeks</td> <td>26 Weeks</td> <td>18 Weeks</td> </tr> <tr> <td>5 Years</td> <td>10 Years</td> <td>6 Weeks</td> <td>3 Weeks</td> <td>26 Weeks</td> <td>15 Weeks</td> </tr> <tr> <td>10 Years</td> <td>15 Years</td> <td>18 Weeks</td> <td>10 Weeks</td> <td>22 Weeks</td> <td>--</td> </tr> <tr> <td>15 Years</td> <td>20 Years</td> <td>20 Weeks</td> <td>12 Weeks</td> <td>18 Weeks</td> <td>--</td> </tr> <tr> <td>20 Years</td> <td>25 Years</td> <td>22 Weeks</td> <td>14 Weeks</td> <td>14 Weeks</td> <td>--</td> </tr> <tr> <td>25 Years</td> <td>30 Years</td> <td>24 Weeks</td> <td>16 Weeks</td> <td>10 Weeks</td> <td>--</td> </tr> <tr> <td>30 Years</td> <td>35 Years</td> <td>26 Weeks</td> <td>18 Weeks</td> <td>6 Weeks</td> <td>--</td> </tr> <tr> <td>35 Years</td> <td></td> <td>28 Weeks</td> <td>20 Weeks</td> <td>2 Weeks</td> <td>--</td> </tr> </tbody> </table> | Period of Continuous Service | | Maximum Period Payable at Percentage of Compensation | | | | Not less than | Less than | 85% | 60% | 50% | 40% | 6 months | 3 Years | 2 Weeks | 1 Week | 26 Weeks | 21 Weeks | 3 Years | 5 Years | 4 Weeks | 2 Weeks | 26 Weeks | 18 Weeks | 5 Years | 10 Years | 6 Weeks | 3 Weeks | 26 Weeks | 15 Weeks | 10 Years | 15 Years | 18 Weeks | 10 Weeks | 22 Weeks | -- | 15 Years | 20 Years | 20 Weeks | 12 Weeks | 18 Weeks | -- | 20 Years | 25 Years | 22 Weeks | 14 Weeks | 14 Weeks | -- | 25 Years | 30 Years | 24 Weeks | 16 Weeks | 10 Weeks | -- | 30 Years | 35 Years | 26 Weeks | 18 Weeks | 6 Weeks | -- | 35 Years | | 28 Weeks | 20 Weeks | 2 Weeks | -- |
| Period of Continuous Service | | Maximum Period Payable at Percentage of Compensation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Not less than | Less than | 85% | 60% | 50% | 40% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 months | 3 Years | 2 Weeks | 1 Week | 26 Weeks | 21 Weeks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 Years | 5 Years | 4 Weeks | 2 Weeks | 26 Weeks | 18 Weeks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 Years | 10 Years | 6 Weeks | 3 Weeks | 26 Weeks | 15 Weeks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 Years | 15 Years | 18 Weeks | 10 Weeks | 22 Weeks | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 Years | 20 Years | 20 Weeks | 12 Weeks | 18 Weeks | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 Years | 25 Years | 22 Weeks | 14 Weeks | 14 Weeks | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 Years | 30 Years | 24 Weeks | 16 Weeks | 10 Weeks | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 Years | 35 Years | 26 Weeks | 18 Weeks | 6 Weeks | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 Years | | 28 Weeks | 20 Weeks | 2 Weeks | -- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extended Temporary Disability Requirements: | Received 50 weeks of Temporary Disability benefits and is not eligible for Permanent Total Disability. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extended Temporary Disability Benefit: | The biweekly benefit is 33 1/3 percent of their biweekly compensation payable from the end of the twelfth month of disability through the twenty-fourth month of disability. However, if a member qualifies for Permanent Total Disability while such member is receiving Extended Temporary Disability benefits, such benefits shall be terminated and the member shall receive the Permanent Total Disability benefits to which they are entitled. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Changed Plan Provisions: | There have been no changes in plan provisions since the prior valuation that had a material impact on this valuation. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Section 3: Supplemental Information

Exhibit 3 – Actuarial Assumptions and Methods Used for Permanent Total Disability Benefit

| | |
|---|--|
| Plan Year: | July 1 through June 30 |
| Definition of Active Member: | First day of biweekly payroll period following employment for new Department employees or immediately following transfer from other City departments. |
| Projected Covered Payroll: | \$1,443,732,069 for 2023-2024 plan year. |
| Net Investment Return: | 2.75%, net of investment expenses. The information and analysis used in selecting this assumption is shown in the Review of Investment Return Assumption for Death and Disability Funds letter dated May 20, 2022. |
| Consumer Price Index (CPI): | CPI Increase of 2.50% per year |
| Payroll Growth: | Increase of 3.00% per year, based on inflation of 2.50% plus “across the board” salary increases of 0.50% per year. This assumption is used to project contributions and distributions in determining the target general reserve at the end of the fixed five-year period. |
| Member Contribution Rate: | Employees start contributing on the first day of the payroll period following the completion of 26 continuous weeks of Department and/or City service at the rate of \$1.00 for each biweekly payroll period. |
| Department Contribution Rate: | Rate recommended by Board’s Actuary multiplied by the total monthly equivalent of compensation. |
| Funding Method: | Annual contributions equal the present value of all future disability payments for those expected to become disabled during the year with a further adjustment for interest credited to the reserves. Subject to modification by the Board’s funding policy. |
| Funding Policy: | Recommend a contribution rate to maintain a target general reserve equal to 20% of the claim reserve at the end of a fixed (rolling) five-year period. |
| Claim Reserve: | The sum of the Open Claim Reserve and the Pending Claim Reserve. |
| Open Claim Reserve: | The present value of future disability benefits for open claims. |
| Pending Claim Reserve: | Contributions made during the fiscal year. |
| Incurred Claims: | Paid claims for the year plus the increase in claim reserves. |
| Changed Actuarial Assumptions and Methods: | There have been no changes in assumptions since the prior valuation. |

Section 3: Supplemental Information

Exhibit 4 – Summary of Permanent Total Disability Benefit

| | |
|---------------------------------|--|
| Age Requirement: | Any age |
| Service Requirement: | Six months continuous service. |
| Other Requirements: | Received 50 weeks of Temporary Disability benefits and satisfies the rules for Permanent Total Disability. |
| Monthly Benefit: | The monthly benefit is 40 percent of the monthly compensation payable from the end of the twelfth month of disability (or later if benefits are payable under the extended temporary disability benefit) until the first day of the calendar month following the sixty-fifth birthday. If Permanent Total Disability benefits commence after the member's sixtieth birthday, the benefit is payable for 60 months. Permanent and Total Disability benefits are subject to annual cost-of-living adjustments, based on the CPI up to a maximum of 3% per year for Tier 1 and a maximum of 2% per year for Tier 2. |
| Changed Plan Provisions: | There have been no changes in plan provisions since the prior valuation. |

Section 3: Supplemental Information

Exhibit 5 – Actuarial Assumptions and Methods Used for Supplemental Industrial Disability Benefit

| | |
|---|--|
| Plan Year: | July 1 through June 30 |
| Definition of Active Member: | First day of biweekly payroll period following employment for new Department employees or immediately following transfer from other City departments. |
| Projected Covered Payroll: | \$1,443,732,069 for 2023-2024 plan year. |
| Net Investment Return: | 2.75%, net of investment expenses. The information and analysis used in selecting this assumption is shown in the Review of Investment Return Assumption for Death and Disability Funds letter dated May 20, 2022. |
| Member Contribution Rate: | None |
| Department Contribution Rate: | Funded on a cash basis |
| Funding Method: | Pay as you go |
| Funding Policy: | Funded on a cash basis |
| Claim Reserve: | None |
| Open Claim Reserve: | None |
| Pending Claim Reserve: | None |
| Incurred Claims: | Paid claims for the year |
| Changed Actuarial Assumptions and Methods: | There have been no changes in assumptions since the prior valuation. |

Section 3: Supplemental Information

Exhibit 6 – Summary of Supplemental Industrial Disability Benefit

| | |
|---------------------------------|--|
| Age Requirement: | Any age |
| Service Requirement: | Six months of continuous service. |
| Additional Requirements: | Injury or disease which arises out of and in the course of employment in the Department. Receiving workers' compensation benefits. |
| Supplemental Benefit: | For the first ten days the biweekly benefit is their biweekly compensation offset by the amount received from workers' compensation. Afterwards, the biweekly benefit is the Temporary, Extended Temporary, or Permanent Total Disability benefits offset by the amount received from workers' compensation. |
| Changed Plan Provisions: | There have been no changes in plan provisions since the prior valuation. |

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