

1959 Survivor Benefit Program

Actuarial Valuation as of June 30, 2023

Required Contributions for Fiscal Year

July 1, 2024, through June 30, 2025

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Actuarial Certification



April 2024

To the best of our knowledge, this report is complete and accurate and contains sufficient information to fully and fairly disclose the funded condition of the 1959 Survivor Program for Public Agencies 1st, 2nd, 3rd, 4th, and Indexed Level pools, and the State and Schools 5th Level pools. This valuation is based on the survivor and membership data provided to the Actuarial Office, the statement of assets provided by the CalPERS Financial Office, and the benefits provided under this program. It is our opinion that this valuation has been performed in accordance with generally accepted actuarial principles, in accordance with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for this program, as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

The undersigned are actuaries for CalPERS, who are members of the American Academy of Actuaries and the Society of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

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Highlights and Executive Summary

Introduction

The 1959 Survivor program was designed to provide pre-retirement death benefits comparable to those provided by Social Security, formally the Federal Old Age and Survivor Insurance (OASI) program, to CalPERS' members not covered by Social Security.

Purpose

This actuarial valuation of the 1959 Survivor Program for Public Agencies 1st, 2nd, 3rd, 4th, and Indexed Level pools, and the State and Schools 5th Level pools within the California Public Employees' Retirement System (CalPERS) was performed by CalPERS staff actuaries as of June 30, 2023 in order to:

- Set forth the funded status of the program, reflecting the assets and funding liabilities of this program as of June 30, 2023.
- Establish the actuarially required premiums for all levels and employee premiums for the Indexed Level, and State and Schools 5th Levels for the fiscal year July 1, 2024 through June 30, 2025; and
- Provide actuarial information as of June 30, 2023 to the CalPERS Board of Administration and other interested parties.

The use of this report for any other purposes may be inappropriate.

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; changes in actuarial policies; changes in plan provisions or applicable law; and differences between the required premiums determined by the valuation and the actual premiums made by the agency.

Funded Status

Shown below are the Accrued Liability, Market Value of Assets (MVA), and Funded Ratio of all pools within the 1959 Survivor Benefit Program as of June 30, 2023.

| Plan | Accrued Liability ¹ | Market Value of Assets | Funded Ratio |
|------------------------------------|--------------------------------|------------------------|---------------|
| State 5 th Level Pool | \$152,615,077 | \$120,264,494 | 78.8% |
| Schools 5 th Level Pool | 14,282,181 | 102,193,009 | 715.5% |
| PA 1 st Level Pool | 2,708,326 | 68,946,830 | 2,545.7% |
| PA 2 nd Level Pool | 2,160,126 | 15,679,218 | 725.8% |
| PA 3 rd Level Pool | 31,365,075 | 148,164,721 | 472.4% |
| PA 4 th Level Pool | 149,612,700 | 154,622,524 | 103.3% |
| PA Indexed Level Pool | 21,497,855 | 29,793,115 | 138.6% |
| Total | \$374,241,340 | \$639,663,911 | 170.9% |

(1) Under the Term Insurance Method, the accrued liability and the present value of future benefits are defined to be equal. Under the Entry Age Actuarial Cost Method, which is being used to fund the benefit in the Indexed Level pool, the accrued liability is defined as the difference between the present value of future benefits and the present value of future normal costs.

Highlights and Executive Summary

Required Employer and Employee Monthly Premiums

Shown below are the 1959 Survivor Program's actuarially required employer and employee monthly premiums per covered member, per month for the fiscal year July 1, 2024 through June 30, 2025. The premiums for fiscal year July 1, 2023 through June 30, 2024 are shown for comparison. Except for the Public Agency Indexed Level pool, these monthly premiums are determined using a Modified Term Insurance Method. Monthly premiums for the Public Agency Indexed Level pool are determined using the Entry Age Actuarial Cost Method.

Required Monthly Premiums

| Plan | 2023-24 Premiums | | | 2024-25 Premiums | | |
|---|------------------|----------|---------|------------------|----------|---------|
| | Employer | Employee | Total | Employer | Employee | Total |
| State 5 th Level Pool ¹ | \$6.35 | \$6.35 | \$12.70 | \$6.60 | \$6.60 | \$13.20 |
| Schools 5 th Level Pool ¹ | \$0.00 | \$2.00 | \$2.00 | \$0.00 | \$2.00 | \$2.00 |
| PA 1 st Level Pool ² | \$0.00 | \$2.00 | \$2.00 | \$0.00 | \$2.00 | \$2.00 |
| PA 2 nd Level Pool ² | \$0.00 | \$2.00 | \$2.00 | \$0.00 | \$2.00 | \$2.00 |
| PA 3 rd Level Pool ² | \$0.00 | \$2.00 | \$2.00 | \$0.00 | \$2.00 | \$2.00 |
| PA 4 th Level Pool ² | \$5.20 | \$2.00 | \$7.20 | \$5.80 | \$2.00 | \$7.80 |
| PA Indexed Level Pool ¹ | \$2.75 | \$2.75 | \$5.50 | \$2.95 | \$2.95 | \$5.90 |

(1) For the Indexed Level and State and Schools 5th Levels, Section 21581 of the California Public Employees' Retirement Law requires mandatory cost sharing when the total premium exceeds \$4.00. Mandatory \$2.00 member monthly premium required.

(2) Mandatory \$2.00 member monthly premium required.

The required employee premium for the State 5th Level pool will change from \$6.35 to \$6.60 per member, per month (or from \$2.94 to \$3.05 for biweekly paid members) for fiscal year 2024-25. This is in accordance with Section 21581(c), which specifies that for State and Schools 5th Levels when the total required premium (after amortization of surplus/unfunded liability) exceeds \$4.00, the employer and the member shall evenly share the required monthly premium.

The required employee premium for the Indexed Level pool will change from \$2.75 to \$2.95 per member, per month (or from \$1.27 to \$1.37 for biweekly paid members) for fiscal year 2024-25. Employer premiums will change from \$2.75 to \$2.95 per member, per month. This increase is due to unfavorable investment experience in the past year.

Employee required premiums for Public Agency 1st, 2nd, and 3rd Level pools shall remain the same as in the prior year: \$2.00 per member, per month. There are no employer required premiums for these pools.

Employee required premiums for Public Agency 4th Level pool shall remain the same as in the prior year: \$2.00 per member, per month. Employer premiums will change from \$5.20 to \$5.80 per member, per month. This increase is due to unfavorable investment experience in the past year.

Highlights and Executive Summary

Changes Since the Prior Year's Valuation

Actuarial Methods and Assumptions

There are no significant changes to the actuarial methods and assumptions for the June 30, 2023 actuarial valuation.

Plan Provisions

No changes were made since the prior valuation. A complete description of the principal plan provisions used in the June 30, 2023 valuation may be found in Appendix B of this report.

Subsequent Changes

The required monthly premiums determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2023. Changes subsequent to that date are not reflected. Investment returns below the assumed rate of return may increase future required monthly premiums while investment returns above the assumed rate of return may decrease future required monthly premiums.

This actuarial valuation report reflects statutory changes, regulatory changes, and board actions through January 2024. Any subsequent changes or actions are not reflected.

Assets

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Assets

Reconciliation of the Market Value of Assets

| State 5 th Level | June 30, 2022 | June 30, 2023 |
|---|----------------------|----------------------|
| Beginning Balance | \$132,599,565 | \$118,493,561 |
| Contributions (Employer and Employee) Received During Fiscal Year | 10,503,801 | 10,267,000 |
| Benefit Payments During Fiscal Year | (14,705,250) | (15,066,329) |
| Net Transfer of Assets Into and Out of this Pool | — | — |
| Investment Earnings Credited | (9,904,555) | 6,570,262 |
| Ending Balance | \$118,493,561 | \$120,264,494 |

| Schools 5 th Level | June 30, 2022 | June 30, 2023 |
|---|---------------------|----------------------|
| Beginning Balance | \$107,430,815 | \$98,145,312 |
| Contributions (Employer and Employee) Received During Fiscal Year | 210,204 | 218,747 |
| Benefit Payments During Fiscal Year | (1,401,969) | (1,667,152) |
| Net Transfer of Assets Into and Out of this Pool | — | — |
| Investment Earnings Credited | (8,093,739) | 5,496,102 |
| Ending Balance | \$98,145,312 | \$102,193,009 |

| Public Agency 1 st Level | June 30, 2022 | June 30, 2023 |
|---|---------------------|---------------------|
| Beginning Balance | \$70,811,352 | \$65,355,742 |
| Contributions (Employer and Employee) Received During Fiscal Year | 161,086 | 159,607 |
| Benefit Payments During Fiscal Year | (252,836) | (252,838) |
| Net Transfer of Assets Into and Out of this Pool | — | — |
| Investment Earnings Credited | (5,363,860) | 3,684,319 |
| Ending Balance | \$65,355,742 | \$68,946,830 |

| Public Agency 2 nd Level | June 30, 2022 | June 30, 2023 |
|---|---------------------|---------------------|
| Beginning Balance | \$16,284,692 | \$14,938,427 |
| Contributions (Employer and Employee) Received During Fiscal Year | 99,214 | 104,363 |
| Benefit Payments During Fiscal Year | (217,551) | (201,857) |
| Net Transfer of Assets Into and Out of this Pool | — | — |
| Investment Earnings Credited | (1,227,930) | 838,285 |
| Ending Balance | \$14,938,427 | \$15,679,218 |

| Public Agency 3 rd Level | June 30, 2022 | June 30, 2023 |
|---|----------------------|----------------------|
| Beginning Balance | \$155,368,176 | \$141,922,852 |
| Contributions (Employer and Employee) Received During Fiscal Year | 1,073,440 | 1,134,703 |
| Benefit Payments During Fiscal Year | (2,795,327) | (2,856,647) |
| Net Transfer of Assets Into and Out of this Pool | — | — |
| Investment Earnings Credited | (11,723,437) | 7,963,813 |
| Ending Balance | \$141,922,852 | \$148,164,721 |

Assets

Reconciliation of the Market Value of Assets (continued)

| Public Agency 4 th Level | June 30, 2022 | June 30, 2023 |
|---|----------------------|----------------------|
| Beginning Balance | \$176,677,180 | \$157,027,464 |
| Contributions (Employer and Employee) Received During Fiscal Year | 5,775,480 | 3,921,869 |
| Benefit Payments During Fiscal Year | (13,755,031) | (13,678,612) |
| Net Transfer of Assets Into and Out of this Pool | — | — |
| Investment Earnings Credited | (11,670,165) | 7,351,803 |
| Ending Balance | \$157,027,464 | \$154,622,524 |

| Public Agency Indexed Level | June 30, 2022 | June 30, 2023 |
|---|---------------------|---------------------|
| Beginning Balance | \$32,409,114 | \$29,314,086 |
| Contributions (Employer and Employee) Received During Fiscal Year | 633,482 | 362,698 |
| Benefit Payments During Fiscal Year | (1,416,150) | (1,409,264) |
| Net Transfer of Assets Into and Out of this Pool | — | — |
| Investment Earnings Credited | (2,312,360) | 1,525,595 |
| Ending Balance | \$29,314,086 | \$29,793,115 |

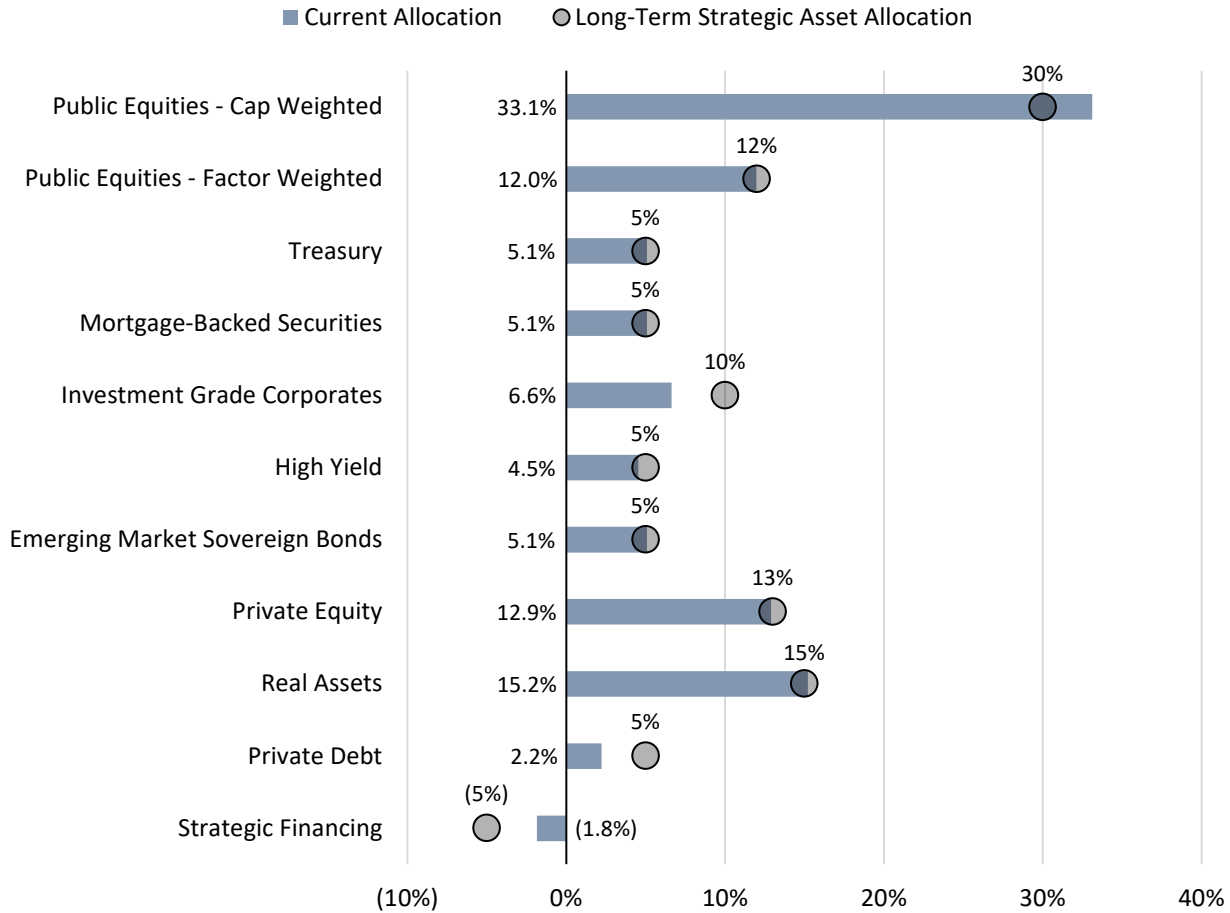
Assets

Asset Allocation

CalPERS adheres to an Asset Allocation Strategy which establishes asset class allocation policy targets and ranges and manages those asset class allocations within their policy ranges.

The asset allocation shown below reflects the allocation of the Public Employees' Retirement Fund (PERF) in its entirety. The assets for the 1959 Survivor Benefit Program are a subset of the PERF and are invested accordingly.

On November 17, 2021, the board adopted changes to the strategic asset allocation. The new allocation was effective July 1, 2022. The asset allocation as of June 30, 2023, is shown below, along with the long-term strategic asset allocations.



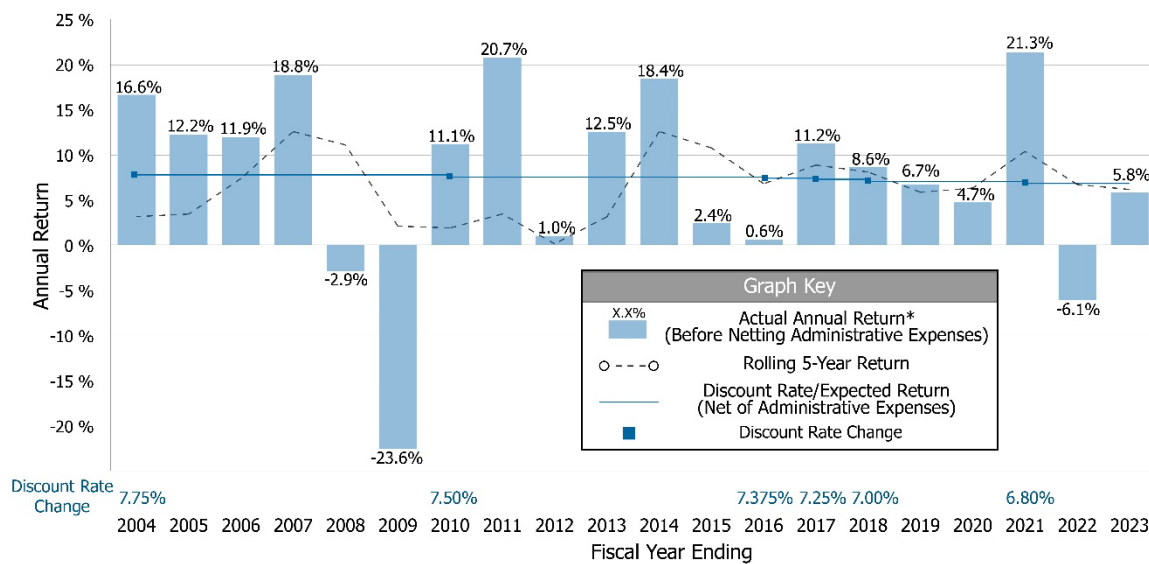
For more information see the [Trust Level Review as of June 30, 2023](#), which is available on the CalPERS website.

Assets

CalPERS History of Investment Returns

The following is a chart with the 20-year historical annual returns of the PERF for each fiscal year ending on June 30 as reported by the Investment Office. Investment returns reported are net of investment expenses but without reduction for administrative expenses. The assumed rate of return, however, is net of both investment and administrative expenses. Also, the Investment Office uses a three-month lag on private equity and real assets for investment performance reporting purposes. This can lead to a timing difference in the returns below and those used for financial reporting purposes. The investment gain or loss calculation in this report relies on final assets that have been audited and are appropriate for financial reporting. Because of these differences, the effective investment return for funding purposes in a single year can be higher or lower than the return reported by the Investment Office shown here.

History of Investment Returns (2004 - 2023)



* As reported by the Investment Office with a 3-month lag on private equity and real assets and without any reduction for administrative expenses.

The table below shows annualized investment returns of the PERF for various time periods ending on June 30, 2023 (figures reported are net of investment expenses but without reduction for administrative expenses). These returns are the annual rates that if compounded over the indicated number of years would equate to the actual time-weighted investment performance of the PERF. It should be recognized that in any given year the rate of return is volatile. The portfolio has an expected volatility of 12.0% per year based on the most recent Asset Liability Management study. The realized volatility is a measure of the risk of the portfolio expressed as the standard deviation of the fund's total monthly return distribution, expressed as an annual percentage. Due to their volatile nature, when looking at investment returns, it is more instructive to look at returns over longer time horizons.

| History of CalPERS Compound Annual Rates of Return and Volatilities | | | | | |
|---|--------|--------|---------|---------|---------|
| | 1 year | 5 year | 10 year | 20 year | 30 year |
| Compound Annual Return | 5.8% | 6.1% | 7.1% | 7.0% | 7.5% |
| Realized Volatility | — | 9.5% | 7.8% | 8.4% | 8.8% |

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Liabilities and Funding Requirements

Key Results

Key results of the current and prior valuations are shown below.

| State 5 th Level | June 30, 2022 | June 30, 2023 |
|---|---------------|---------------|
| Covered Active Members | 75,812 | 74,885 |
| Survivors Included in the Valuation | | |
| Deferred (eligible, but not currently receiving benefits) | 275 | 281 |
| Receiving Benefits | 1,420 | 1,406 |
| Total | 1,695 | 1,687 |
| Accrued Liabilities | \$154,319,353 | \$152,615,077 |
| Market Value of Assets (MVA) | 118,493,561 | 120,264,494 |
| Unfunded Liability/(Excess Assets) | 35,825,792 | 32,350,583 |
| Required Employer Monthly Premium Per Member | | |
| Before Amortization of Unfunded Liability/(Excess Assets) | \$8.30 | \$9.10 |
| After Amortization of Unfunded Liability/(Excess Assets) | \$12.70 | \$13.20 |
| After Employer/Employee Premium Sharing | \$6.35 | \$6.60 |
| Funded Ratio | 76.8% | 78.8% |

| Schools 5 th Level | June 30, 2022 | June 30, 2023 |
|---|---------------|---------------|
| Covered Active Members | 10,390 | 10,815 |
| Survivors Included in the Valuation | | |
| Deferred (eligible, but not currently receiving benefits) | 18 | 17 |
| Receiving Benefits | 145 | 147 |
| Total | 163 | 164 |
| Accrued Liabilities | \$14,198,856 | \$14,282,181 |
| Market Value of Assets (MVA) | 98,145,312 | 102,193,009 |
| Unfunded Liability/(Excess Assets) | (83,946,456) | (87,910,828) |
| Required Employer Monthly Premium Per Member | | |
| Before Amortization of Unfunded Liability/(Excess Assets) | \$5.70 | \$6.30 |
| After Amortization of Unfunded Liability/(Excess Assets) | \$0.00 | \$0.00 |
| After Employer/Employee Premium Sharing | \$0.00 | \$0.00 |
| Funded Ratio | 691.2% | 715.5% |

Liabilities and Funding Requirements

Key Results (continued)

| Public Agency 1 st Level | June 30, 2022 | June 30, 2023 |
|---|---------------|---------------|
| Covered Active Members | 6,716 | 6,797 |
| Survivors Included in the Valuation | | |
| Deferred (eligible, but not currently receiving benefits) | 24 | 23 |
| Receiving Benefits | 102 | 103 |
| Total | 126 | 126 |
| Accrued Liabilities | \$2,731,767 | \$2,708,326 |
| Market Value of Assets (MVA) | 65,355,742 | 68,946,830 |
| Unfunded Liability/(Excess Assets) | (62,623,975) | (66,238,504) |
| Required Employer Monthly Premium Per Member | | |
| Total Premium Required | \$1.40 | \$1.40 |
| Premium Required After Employee Contributions | \$0.00 | \$0.00 |
| Employer Premium After Amortization of Unfunded Liability/(Excess Assets) | \$0.00 | \$0.00 |
| Funded Ratio | 2,392.4% | 2,545.7% |
| Public Agency 2 nd Level | June 30, 2022 | June 30, 2023 |
| Covered Active Members | 4,231 | 4,399 |
| Survivors Included in the Valuation | | |
| Deferred (eligible, but not currently receiving benefits) | 16 | 15 |
| Receiving Benefits | 70 | 69 |
| Total | 86 | 84 |
| Accrued Liabilities | \$2,217,975 | \$2,160,126 |
| Market Value of Assets (MVA) | 14,938,427 | 15,679,218 |
| Unfunded Liability/(Excess Assets) | (12,720,452) | (13,519,092) |
| Required Employer Monthly Premium Per Member | | |
| Total Premium Required | \$1.70 | \$1.80 |
| Premium Required After Employee Contributions | \$0.00 | \$0.00 |
| Employer Premium After Amortization of Unfunded Liability/(Excess Assets) | \$0.00 | \$0.00 |
| Funded Ratio | 673.5% | 725.8% |
| Public Agency 3 rd Level | June 30, 2022 | June 30, 2023 |
| Covered Active Members | 46,284 | 49,081 |
| Survivors Included in the Valuation | | |
| Deferred (eligible, but not currently receiving benefits) | 166 | 159 |
| Receiving Benefits | 600 | 628 |
| Total | 766 | 787 |
| Accrued Liabilities | \$30,753,269 | \$31,365,075 |
| Market Value of Assets (MVA) | 141,922,852 | 148,164,721 |
| Unfunded Liability/(Excess Assets) | (111,169,583) | (116,799,646) |
| Required Employer Monthly Premium Per Member | | |
| Total Premium Required | \$2.70 | \$2.80 |
| Premium Required After Employee Contributions | \$0.70 | \$0.80 |
| Employer Premium After Amortization of Unfunded Liability/(Excess Assets) | \$0.00 | \$0.00 |
| Funded Ratio | 461.5% | 472.4% |

Liabilities and Funding Requirements

Key Results (continued)

| Public Agency 4 th Level | June 30, 2022 | June 30, 2023 |
|---|---------------|---------------|
| Covered Active Members | 73,322 | 75,949 |
| Survivors Included in the Valuation | | |
| Deferred (eligible, but not currently receiving benefits) | 181 | 176 |
| Receiving Benefits | 1,058 | 1,076 |
| Total | 1,239 | 1,252 |
| Accrued Liabilities | \$148,619,003 | \$149,612,700 |
| Market Value of Assets (MVA) | 157,027,464 | 154,622,524 |
| Unfunded Liability/(Excess Assets) | (8,408,461) | (5,009,824) |
| Required Employer Monthly Premium Per Member | | |
| Total Premium Required | \$7.50 | \$7.90 |
| Premium Required After Employee Contributions | \$5.50 | \$5.90 |
| Employer Premium After Amortization of Unfunded Liability/(Excess Assets) | \$5.20 | \$5.80 |
| Funded Ratio | 105.7% | 103.3% |

| Public Agency Indexed Level | June 30, 2022 | June 30, 2023 |
|---|---------------|---------------|
| Covered Active Members | | |
| Counts | 11,811 | 12,312 |
| Average Attained Age | 41.40 | 41.15 |
| Average Years of Credited Service | 9.32 | 9.01 |
| Survivors Included in the Valuation | | |
| Deferred (eligible, but not currently receiving benefits) | 21 | 22 |
| Receiving Benefits | 112 | 115 |
| Total | 133 | 137 |
| Accrued Liabilities | \$20,822,002 | \$21,497,855 |
| Market Value of Assets (MVA) | 29,314,086 | 29,793,115 |
| Unfunded Liability/(Excess Assets) | (8,492,084) | (8,295,260) |
| Required Employer Monthly Premium Per Member | | |
| Before Amortization of Unfunded Liability/(Excess Assets) | \$9.50 | \$9.80 |
| After Amortization of Unfunded Liability/(Excess Assets) | \$5.50 | \$5.90 |
| After Employer/Employee Premium Sharing | \$2.75 | \$2.95 |
| Funded Ratio | 140.8% | 138.6% |

Liabilities and Funding Requirements

Development of Normal Costs

The following six tables show the development of the Normal Cost using the Modified Term Method. The Normal Cost is developed using the historical present value of future benefits arising from deaths that occurred in the given year. These values are divided by the number of members in the given year and weighted by percentages listed below. Please see Appendix A – Actuarial Methods and Assumptions for more details.

State 5th Level Pool

| Year | Present Value of Future Benefits (PVB) | Members | Weight | Normal Cost (PVB / Members / 12) |
|------|--|---------|--------|----------------------------------|
| 2013 | \$7,001,469 | 71,180 | 1% | \$8.20 |
| 2014 | 6,781,756 | 72,848 | 3% | 7.76 |
| 2015 | 6,557,793 | 74,372 | 5% | 7.35 |
| 2016 | 7,552,847 | 75,782 | 7% | 8.31 |
| 2017 | 5,775,398 | 76,638 | 9% | 6.28 |
| 2018 | 4,066,199 | 77,362 | 11% | 4.38 |
| 2019 | 6,957,696 | 78,011 | 13% | 7.43 |
| 2020 | 8,477,509 | 78,713 | 15% | 8.98 |
| 2021 | 11,408,099 | 76,995 | 17% | 12.35 |
| 2022 | 11,513,065 | 75,812 | 19% | 12.66 |

Final Weighted Average Normal Cost \$9.10

Schools 5th Level Pool

| Year | Present Value of Future Benefits (PVB) | Members | Weight | Normal Cost (PVB / Members / 12) |
|------|--|---------|--------|----------------------------------|
| 2013 | \$434,475 | 9,944 | 1% | \$3.64 |
| 2014 | 356,592 | 10,287 | 3% | 2.89 |
| 2015 | 693,955 | 10,490 | 5% | 5.51 |
| 2016 | 200,586 | 10,259 | 7% | 1.63 |
| 2017 | 874,049 | 10,557 | 9% | 6.90 |
| 2018 | 979,346 | 10,894 | 11% | 7.49 |
| 2019 | 1,207,583 | 11,190 | 13% | 8.99 |
| 2020 | 207,932 | 11,219 | 15% | 1.54 |
| 2021 | 995,922 | 10,413 | 17% | 7.97 |
| 2022 | 1,054,050 | 10,390 | 19% | 8.45 |

Final Weighted Average Normal Cost \$6.30

Public Agencies 1st Level Pool

| Year | Present Value of Future Benefits (PVB) | Members | Weight | Normal Cost (PVB / Members / 12) |
|------|--|---------|--------|----------------------------------|
| 2013 | \$2,437,847 | 129,796 | 1% | \$1.57 |
| 2014 | 1,771,714 | 132,024 | 3% | 1.12 |
| 2015 | 1,870,607 | 134,879 | 5% | 1.16 |
| 2016 | 2,177,004 | 139,581 | 7% | 1.30 |
| 2017 | 2,300,250 | 141,063 | 9% | 1.36 |
| 2018 | 2,227,491 | 140,339 | 11% | 1.32 |
| 2019 | 1,935,702 | 141,374 | 13% | 1.14 |
| 2020 | 2,013,700 | 141,081 | 15% | 1.19 |
| 2021 | 2,971,972 | 139,036 | 17% | 1.78 |
| 2022 | 2,998,583 | 142,364 | 19% | 1.76 |

Final Weighted Average Normal Cost \$1.40

Liabilities and Funding Requirements

Development of Normal Costs (continued)

Public Agencies 2nd Level Pool

| Year | Present Value of Future Benefits (PVB) | Members | Weight | Normal Cost (PVB / Members / 12) |
|------|--|---------|--------|----------------------------------|
| 2013 | \$3,047,799 | 129,796 | 1% | \$1.96 |
| 2014 | 2,215,157 | 132,024 | 3% | 1.40 |
| 2015 | 2,338,658 | 134,879 | 5% | 1.44 |
| 2016 | 2,721,826 | 139,581 | 7% | 1.62 |
| 2017 | 2,875,981 | 141,063 | 9% | 1.70 |
| 2018 | 2,785,289 | 140,339 | 11% | 1.65 |
| 2019 | 2,420,043 | 141,374 | 13% | 1.43 |
| 2020 | 2,517,925 | 141,081 | 15% | 1.49 |
| 2021 | 3,715,847 | 139,036 | 17% | 2.23 |
| 2022 | 3,748,954 | 142,364 | 19% | 2.19 |

Final Weighted Average Normal Cost **\$1.80**

Public Agencies 3rd Level Pool

| Year | Present Value of Future Benefits (PVB) | Members | Weight | Normal Cost (PVB / Members / 12) |
|------|--|---------|--------|----------------------------------|
| 2013 | \$4,744,073 | 129,796 | 1% | \$3.05 |
| 2014 | 3,448,999 | 132,024 | 3% | 2.18 |
| 2015 | 3,640,399 | 134,879 | 5% | 2.25 |
| 2016 | 4,237,503 | 139,581 | 7% | 2.53 |
| 2017 | 4,477,909 | 141,063 | 9% | 2.65 |
| 2018 | 4,338,427 | 140,339 | 11% | 2.58 |
| 2019 | 3,767,093 | 141,374 | 13% | 2.22 |
| 2020 | 3,921,749 | 141,081 | 15% | 2.32 |
| 2021 | 5,785,697 | 139,036 | 17% | 3.47 |
| 2022 | 5,836,218 | 142,364 | 19% | 3.42 |

Final Weighted Average Normal Cost **\$2.80**

Public Agencies 4th Level Pool

| Year | Present Value of Future Benefits (PVB) | Members | Weight | Normal Cost (PVB / Members / 12) |
|------|--|---------|--------|----------------------------------|
| 2013 | \$13,510,031 | 129,796 | 1% | \$8.67 |
| 2014 | 9,687,436 | 132,024 | 3% | 6.11 |
| 2015 | 10,319,088 | 134,879 | 5% | 6.38 |
| 2016 | 12,032,521 | 139,581 | 7% | 7.18 |
| 2017 | 12,656,392 | 141,063 | 9% | 7.48 |
| 2018 | 12,191,609 | 140,339 | 11% | 7.24 |
| 2019 | 10,773,476 | 141,374 | 13% | 6.35 |
| 2020 | 11,045,570 | 141,081 | 15% | 6.52 |
| 2021 | 16,443,707 | 139,036 | 17% | 9.86 |
| 2022 | 16,429,251 | 142,364 | 19% | 9.62 |

Final Weighted Average Normal Cost **\$7.90**

Liabilities and Funding Requirements

Development of Funding Requirements

The following table develops the annual premiums required for fiscal year 2024-25 for the State 5th and Schools 5th Level pools.

| June 30, 2023 | State 5 th Level | Schools 5 th Level |
|---|-----------------------------|-------------------------------|
| 1) Development of Unfunded Liability | | |
| a) Present Value of Future Benefits for Current Survivors as of 6/30/2023 | \$150,761,077 | \$13,868,181 |
| b) Reserve for Unclaimed Benefits as of 6/30/2023 | 1,854,000 | 414,000 |
| c) Total Accrued Liabilities as of 6/30/2023 [(1a) + (1b)] | 152,615,077 | 14,282,181 |
| d) Market Value of Assets as of 6/30/2023 | 120,264,494 | 102,193,009 |
| e) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(1c) - (1d)] | \$32,350,583 | (\$87,910,828) |
| 2) Development of Normal Cost | | |
| a) Total Per Member, Per Month 2023-24 Term Insurance Normal Cost rounded to the nearest \$0.10 | \$9.10 | \$6.30 |
| 3) 2024 Projected Unfunded Liability | | |
| a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(1e)] | \$32,350,583 | (\$87,910,828) |
| b) Projected Normal Cost Contributions with Interest 7/1/2023 – 6/30/2024 | 7,802,148 | 735,148 |
| c) Projected UAL Payment 7/1/2023 – 6/30/2024 | 3,750,109 | (735,148) |
| d) Projected Required Contributions 7/1/2023 – 6/30/2024 [(3b) + (3c)] | 11,552,257 | — |
| e) Projected Employee Contributions 7/1/2023 – 6/30/2024 | 5,775,960 | 249,600 |
| f) Changes in Contributions due to Contribution (Gain)/Loss ¹ | (767,208) | (106,254) |
| g) Excess Assets due to Employee Contributions [maximum, (\$0, (3e) - (3d))] | — | 249,600 |
| h) Projected UAL/(Excess Assets) as of 6/30/2024 [(3a) * 1.068 - ((3c) + (3f) + (3g)) * 1.068^{1/2}] | \$31,467,771 | (\$93,277,172) |
| 4) Required Contribution | | |
| a) Required Normal Cost Per Member, Per Month [(2a)] | \$9.10 | \$6.30 |
| b) Projected Active Members as of 6/30/2024 | 74,900 | 10,800 |
| c) Required Normal Cost Contribution [(4a) * (4b) * 12 * (1.068) ^{1/2}] | \$8,452,595 | \$843,784 |
| d) Amortization of the UAL/(Excess Assets) ² | 3,398,147 | (843,784) |
| e) Total Required Contributions [(4c) + (4d)] | 11,850,742 | 0.00 |
| f) Required Contributions Per Member, Per Month [(4e) / (4b) / 12], rounded to the nearest \$0.10 | \$13.20 | \$0.00 |
| g) Amortization Period | See Table on Pg. 20 | 30-year |
| 5) 2024-25 Required Employer and Employee Premiums with Cost Sharing Provision | | |
| a) Required Employee Premium Per Member, Per Month [maximum, (\$2, (4f) / 2)] | \$6.60 | \$2.00 |
| b) Required Employer Premium Per Member, Per Month [maximum, (\$0, (4f) - (5a))] | \$6.60 | \$0.00 |

(1) This reflects differences in calculated Normal Costs from the prior year and the current year, as well as differences in actual and estimated member counts.

(2) See amortization schedule on Page 20.

Liabilities and Funding Requirements

Development of Funding Requirements (continued)

The following table develops the annual premiums required for fiscal year 2024-25 for the Public Agency 1st, 2nd, 3rd, and 4th Level pools.

| June 30, 2023 | Public Agency 1 st Level | Public Agency 2 nd Level | Public Agency 3 rd Level | Public Agency 4 th Level |
|---|--|--|--|--|
| 1) Development of Unfunded Liability | | | | |
| a) Present Value of Future Benefits for Current Survivors as of 6/30/2023 | \$2,652,166 | \$2,052,126 | \$30,814,875 | \$147,560,700 |
| b) Reserve for Unclaimed Benefits as of 6/30/2023 | 56,160 | 108,000 | 550,200 | 2,052,000 |
| c) Total Accrued Liabilities as of 6/30/2023 [(1a) + (1b)] | 2,708,326 | 2,160,126 | 31,365,075 | 149,612,700 |
| d) Market Value of Assets as of 6/30/2023 | 68,946,830 | 15,679,218 | 148,164,721 | 154,622,524 |
| e) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(1c) - (1d)] | (\$66,238,504) | (\$13,519,092) | (\$116,799,646) | (\$5,009,824) |
| 2) Development of Normal Cost | | | | |
| a) Total Per Member, Per Month 2023-24 Term Insurance Normal Cost rounded to the nearest \$0.10 | \$1.40 | \$1.80 | \$2.80 | \$7.90 |
| 3) 2024 Projected Unfunded Liability | | | | |
| a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(1e)] | (\$66,238,504) | (\$13,519,092) | (\$116,799,646) | (\$5,009,824) |
| b) Projected Normal Cost Contributions with Interest 7/1/2023 – 6/30/2024 | 116,324 | 88,545 | 1,550,285 | 6,817,609 |
| c) Projected UAL Payment 7/1/2023 – 6/30/2024 | (116,324) | (88,545) | (1,550,285) | (451,529) |
| d) Projected Required Contributions 7/1/2023 – 6/30/2024 [(3b) + (3c)] | — | — | — | 6,366,080 |
| e) Projected Employee Contributions 7/1/2023 – 6/30/2024 | 160,800 | 100,800 | 1,111,200 | 1,759,200 |
| f) Changes in Contributions due to Contribution (Gain)/Loss ¹ | (1,630) | (9,338) | (149,002) | (374,092) |
| g) Excess Assets due to Employee Contributions [maximum, (\$0, (3e) - (3d))] | 160,800 | 100,800 | 1,111,200 | — |
| h) Projected UAL/(Excess Assets) as of 6/30/2024 [(3a) * 1.068 - ((3c) + (3f) + (3g)) * 1.068^{1/2}] | (\$70,787,002) | (\$14,441,404) | (\$124,134,269) | (\$4,497,262) |
| 4) Required Contribution | | | | |
| a) Required Normal Cost Per Member, Per Month [(2c)] | \$1.40 | \$1.80 | \$2.80 | \$7.90 |
| b) Projected Active Members as of 6/30/2024 | 6,800 | 4,400 | 49,100 | 75,900 |
| c) Required Normal Cost Contribution [(4a) * (4b) * 12 * (1.068) ^{1/2}] | \$118,060 | \$98,218 | \$1,704,929 | \$7,435,938 |
| d) Amortization of the UAL/(Excess Assets) | (118,060) | (98,218) | (1,704,929) | (343,672) |
| e) Total Required Contributions [(4c) + (4d)] | 0.00 | 0.00 | 0.00 | 7,092,266 |
| f) Required Contributions Per Member, Per Month [(4e) / (4b) / 12], rounded to the nearest \$0.10 | \$0.00 | \$0.00 | \$0.00 | \$7.80 |
| g) Amortization Period | 30-year | 30-year | 30-year | 30-year |
| 5) 2024-25 Required Employer/Employee Premiums | | | | |
| a) Required Employee Premium Per Member, Per Month [\$2] | \$2.00 | \$2.00 | \$2.00 | \$2.00 |
| b) Required Employer Premium Per Member, Per Month [maximum, (\$0, (4f) - (5a))] | \$0.00 | \$0.00 | \$0.00 | \$5.80 |

(1) This reflects differences in calculated Normal Costs from the prior year and the current year, as well as differences in actual and estimated member counts.

Liabilities and Funding Requirements

Development of Funding Requirements (continued)

The following table develops the annual premiums required for fiscal year 2024-25 for the Public Agency Indexed Level pool.

| June 30, 2023 | Public Agency Indexed Level |
|---|-----------------------------|
| 1) Development of Unfunded Liability | |
| a) Present Value of Future Benefits for Current Survivors as of 6/30/2023 | \$17,313,464 |
| b) Present Value of Future Benefits for Active Members as of 6/30/2023 | 14,900,619 |
| c) Reserve for Unclaimed Benefits as of 6/30/2023 | — |
| d) Total Present Value of Future Benefits as of 6/30/2023 [(1a) + (1b)] | 32,214,083 |
| e) Present Value of Future Normal Costs as of 6/30/2023 | 10,716,228 |
| f) Total Accrued Liabilities as of 6/30/2023 [(1c) + (1d) - (1e)] | 21,497,855 |
| g) Market Value of Assets as of 6/30/2023 | 29,793,115 |
| h) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(1f) - (1g)] | (\$8,295,260) |
| 2) Development of Normal Cost | |
| a) Required Entry Age Normal Cost | \$1,443,089 |
| b) Active Members as of 6/30/2023 | 12,312 |
| c) Total Per Member, Per Month 2023-24 Entry Age Normal Cost [(2a) / (2b) / 12], rounded to the nearest \$0.10 | \$9.80 |
| 3) 2024 Projected Unfunded Liability | |
| a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(1h)] | (\$8,295,260) |
| b) Projected Normal Cost Contributions with Interest 7/1/2023 – 6/30/2024 | 1,390,185 |
| c) Projected UAL Payment 7/1/2023 – 6/30/2024 | (611,793) |
| d) Projected Required Contributions 7/1/2023 – 6/30/2024 [(3b) + (3c)] | 778,392 |
| e) Projected Employee Contributions 7/1/2023 – 6/30/2024 | 389,400 |
| f) Changes in Contributions due to Contribution (Gain)/Loss ¹ | (68,899) |
| g) Excess Assets due to Employee Contributions [maximum, (\$0, (3e) - (3d))] | — |
| h) Projected UAL/(Excess Assets) as of 6/30/2024 [(3a) * 1.068 - ((3c) + (3f) + (3g)) * 1.068^{1/2}] | (\$8,155,883) |
| 4) Required Contribution | |
| a) Required Normal Cost Per Member, Per Month [(2c)] | \$9.80 |
| b) Projected Active Members as of 6/30/2024 | 12,300 |
| c) Required Normal Cost Contribution [(4a) * (4b) * 12 * (1.068) ^{1/2}] | \$1,494,852 |
| d) Amortization of the UAL/(Excess Assets) | (623,256) |
| e) Total Required Contributions [(4c) + (4d)] | 871,596 |
| f) Required Contributions Per Member, Per Month [(4e) / (4b) / 12], rounded to the nearest \$0.10 | \$5.90 |
| g) Amortization Period | 30-year |
| 5) 2024-25 Required Employer and Employee Premiums with Cost Sharing Provision | |
| a) Required Employee Premium Per Member, Per Month [maximum (\$2, (4f) / 2)] | \$2.95 |
| b) Required Employer Premium Per Member, Per Month [maximum (\$0, (4f) - (5a))] | \$2.95 |

(1) This reflects differences in calculated Normal Costs from the prior year and the current year, as well as differences in actual and estimated member counts.

Liabilities and Funding Requirements

Schedule of Amortization Bases

The schedule below shows the development of the required payments on the amortization bases in accordance with the Amortization Policy. In order to better achieve the objectives of the Amortization Policy, such as mitigate contribution volatility, a Fresh Start of the total UAL over a 15-year period was established in the June 30, 2022 actuarial valuation.

State 5th Level Pool

| | Date Established | Ramp Level 2024-25 | Ramp Shape | Remaining Period | Original Period | Balance 6/30/2023 | Payment 2023-24 | Projected Balance 6/30/2024 | Payment 2024-25 |
|----------------------------|------------------|--------------------|------------|------------------|-----------------|---------------------|--------------------|-----------------------------|--------------------|
| Fresh Start | 6/30/2022 | | No Ramp | 14 | 15 | \$35,748,118 | \$3,750,109 | \$34,303,474 | \$3,750,109 |
| Investment (Gain)/Loss | 6/30/2023 | 20% | Up Only | 20 | 20 | 1,326,807 | 0 | 1,417,030 | 30,459 |
| Non-Investment (Gain)/Loss | 6/30/2023 | | No Ramp | 20 | 20 | (4,724,342) | (767,208) | (4,252,733) | (382,421) |
| Total | | | | | | \$32,350,583 | \$2,982,901 | \$31,467,771 | \$3,398,147 |

(Gain)/Loss Analysis 6/30/2022 – 6/30/2023

To calculate the funding requirements of the plan, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year, actual experience is compared to the expected experience based on the actuarial assumptions. This results in actual gains or losses, as shown below.

| | State 5 th Level | Schools 5 th Level |
|---|-----------------------------|-------------------------------|
| 1) Prior Year Unfunded Accrued Liability/(Excess Assets) Development | | |
| a) Accrued Liability as of 6/30/2022 | \$154,319,353 | \$14,198,856 |
| b) Market Value of Assets as of 6/30/2022 | 118,493,561 | 98,145,312 |
| c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2022 [(1a) - (1b)] | \$35,825,792 | (\$83,946,456) |
| 2) Development of Projected Unfunded Accrued Liability/(Excess Assets) for 6/30/2023 | | |
| a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2022 [(1c)] | \$35,825,792 | (\$83,946,456) |
| b) Projected Unfunded Accrued Liability/(Excess Assets) Payment with Interest 7/1/2022 – 6/30/2023 ¹ | 2,432,484 | (483,195) |
| c) Projected Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(2a) * 1.068 - (2b) * 1.068 ^{1/2}] | 35,748,118 | (89,155,462) |
| 3) Development of Projected Assets | | |
| a) Market Value of Assets as of 6/30/2022 | \$118,493,561 | \$98,145,312 |
| b) Net Cash Flows 7/1/2022 – 6/30/2023 | (4,799,329) | (1,448,405) |
| c) Net Transfer of Assets Into and Out of this Pool | — | — |
| d) Expected Assets as of 6/30/2023 [(3a) * 1.068 + (3b) + (3c)] * 1.068^{1/2} | \$121,591,301 | \$103,322,352 |
| 4) Current Year Unfunded Liability/(Excess Assets) Development | | |
| a) Accrued Liability as of 6/30/2023 | \$152,615,077 | \$14,282,181 |
| b) Market Value of Assets as of 6/30/2023 | 120,264,494 | 102,193,009 |
| c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(4a) - (4b)] | \$32,350,583 | (\$87,910,828) |
| 5) Development of (Gain)/Loss due to changes in Reserve for Unclaimed Benefits | | |
| a) Reserve for Unclaimed Benefits as of 6/30/2022 | \$2,277,000 | \$378,000 |
| b) Reserve for Unclaimed Benefits as of 6/30/2023 | 1,854,000 | 414,000 |
| c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5b) - (5a)] | (423,000) | 36,000 |
| 6) (Gain)/Loss for the Period of 6/30/2022 – 6/30/2023 | | |
| a) Total (Gain)/Loss [(4c) - (2c)] | (\$3,397,535) | \$1,244,634 |
| b) Investment (Gain)/Loss [(3d) - (4b)] | 1,326,807 | 1,129,343 |
| c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5c)] | (423,000) | 36,000 |
| d) Non-Investment (Gain)/Loss [(6a) - (6b) - (6c)] | (4,301,342) | 79,291 |

(1) Includes payment gain/loss due to changes in Normal Costs, as well as differences in actual and estimated member counts.

Liabilities and Funding Requirements

(Gain)/Loss Analysis 6/30/2022 – 6/30/2023 (continued)

| | Public Agency 1 st Level | Public Agency 2 nd Level | Public Agency 3 rd Level | Public Agency 4 th Level |
|--|--|--|--|--|
| 1) Prior Year Unfunded Accrued Liability/(Excess Assets) Development | | | | |
| a) Accrued Liability as of 6/30/2022 | \$2,731,767 | \$2,217,975 | \$30,753,269 | \$148,619,003 |
| b) Market Value of Assets as of 6/30/2022 | 65,355,742 | 14,938,427 | 141,922,852 | 157,027,464 |
| c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2022 [(1a) - (1b)] | (\$62,623,975) | (\$12,720,452) | (\$111,169,583) | (\$8,408,461) |
| 2) Development of Projected Unfunded Accrued Liability/(Excess Assets) for 6/30/2023 | | | | |
| a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2022 [(1c)] | (\$62,623,975) | (\$12,720,452) | (\$111,169,583) | (\$8,408,461) |
| b) Projected Unfunded Accrued Liability/(Excess Assets) Payment with Interest 7/1/2022 – 6/30/2023 ¹ | 49,172 | 9,455 | (473,945) | (2,972,171) |
| c) Projected Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(2a) * 1.068 - (2b) * 1.068 ^{1/2}] | (66,933,222) | (13,595,214) | (118,239,320) | (5,908,673) |
| 3) Development of Projected Assets | | | | |
| a) Market Value of Assets as of 6/30/2022 | \$65,355,742 | \$14,938,427 | \$141,922,852 | \$157,027,464 |
| b) Net Cash Flows 7/1/2022 – 6/30/2023 | (93,321) | (97,493) | (1,721,944) | (9,756,743) |
| c) Net Transfer of Assets Into and Out of this Pool | — | — | — | — |
| d) Expected Assets as of 6/30/2023 [(3a) * 1.068 + ((3b) + (3c)) * 1.068^{1/2}] | \$69,703,584 | \$15,853,486 | \$149,794,078 | \$157,622,315 |
| 4) Current Year Unfunded Liability/(Excess Assets) Development | | | | |
| a) Accrued Liability as of 6/30/2023 | \$2,708,326 | \$2,160,126 | \$31,365,075 | \$149,612,700 |
| b) Market Value of Assets as of 6/30/2023 | 68,946,830 | 15,679,218 | 148,164,721 | 154,622,524 |
| c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(4a) - (4b)] | (\$66,238,504) | (\$13,519,092) | (\$116,799,646) | (\$5,009,824) |
| 5) Development of (Gain)/Loss due to changes in the Reserve for Unclaimed Benefits | | | | |
| a) Reserve for Unclaimed Benefits as of 6/30/2022 | \$54,000 | \$99,900 | \$583,800 | \$2,359,800 |
| b) Reserve for Unclaimed Benefits as of 6/30/2023 | 56,160 | 108,000 | 550,200 | 2,052,000 |
| c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5b) - (5a)] | 2,160 | 8,100 | (33,600) | (307,800) |
| 6) (Gain)/Loss for the Period of 6/30/2022 – 6/30/2023 | | | | |
| a) Total (Gain)/Loss [(4c) - (2c)] | \$694,718 | \$76,122 | \$1,439,674 | \$898,849 |
| b) Investment (Gain)/Loss [(3d) - (4b)] | 756,754 | 174,268 | 1,629,357 | 2,999,791 |
| c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5c)] | 2,160 | 8,100 | (33,600) | (307,800) |
| d) Non-Investment (Gain)/Loss [(6a) - (6b) - (6c)] | (64,196) | (106,246) | (156,083) | (1,793,142) |

(1) Includes payment gain/loss due to changes in Normal Costs, as well as differences in actual and estimated member counts.

Liabilities and Funding Requirements

(Gain)/Loss Analysis 6/30/2022 – 6/30/2023 (continued)

| | Public Agency Indexed Level |
|---|--------------------------------|
| 1) Prior Year Unfunded Accrued Liability/(Excess Assets) Development | |
| a) Accrued Liability as of 6/30/2022 | \$20,822,002 |
| b) Market Value of Assets as of 6/30/2022 | 29,314,086 |
| c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2022 [(1a) - (1b)] | (\$8,492,084) |
| 2) Development of Projected Unfunded Accrued Liability/(Excess Assets) for 6/30/2023 | |
| a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2022 [(1c)] | (\$8,492,084) |
| b) Projected Unfunded Accrued Liability/(Excess Assets) Payment with Interest 7/1/2022 – 6/30/2023 ¹ | (1,029,241) |
| c) Projected Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(2a) * 1.068 - (2b) * 1.068 ^{1/2}] | (8,005,886) |
| 3) Development of Projected Assets | |
| a) Market Value of Assets as of 6/30/2022 | \$29,314,086 |
| b) Net Cash Flows 7/1/2022 – 6/30/2023 | (1,046,566) |
| c) Net Transfer of Assets Into and Out of this Pool | — |
| d) Expected Assets as of 6/30/2023 [(3a) * 1.068 + ((3b) + (3c)) * 1.068^{1/2}] | \$30,225,880 |
| 4) Current Year Unfunded Liability/(Excess Assets) Development | |
| a) Accrued Liability as of 6/30/2023 | \$21,497,855 |
| b) Market Value of Assets as of 6/30/2023 | 29,793,115 |
| c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2023 [(4a) - (4b)] | (\$8,295,260) |
| 5) Development of (Gain)/Loss due to changes in the Reserve for Unclaimed Benefits | |
| a) Reserve for Unclaimed Benefits as of 6/30/2022 | \$18,552 |
| b) Reserve for Unclaimed Benefits as of 6/30/2023 | 0 |
| c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5b) - (5a)] | (18,552) |
| 6) (Gain)/Loss for the Period of 6/30/2022 – 6/30/2023 | |
| a) Total (Gain)/Loss [(4c) - (2c)] | (\$289,374) |
| b) Investment (Gain)/Loss [(3d) - (4b)] | 432,765 |
| c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5c)] | (18,552) |
| d) Non-Investment (Gain)/Loss [(6a) - (6b) - (6c)] | (703,587) |

(1) Includes payment gain/loss due to changes in Normal Costs, as well as differences in actual and estimated member counts.

Risk Analysis

- 24 Future Investment Return Scenarios
- 25 Discount Rate Sensitivity
- 26 Mortality Rate Sensitivity
- 27 Funded Status – Low-Default-Risk Basis

Risk Analysis

Future Investment Return Scenarios

Analysis using the investment return scenarios from the Asset Liability Management process completed in 2021 was performed to determine the effects of various future investment returns on required employer contributions.

The following tables show the effect of a two standard deviation investment gain/loss in fiscal year 2023-24 on the fiscal year 2025-26 employer and employee contributions. Note that for the State 5th Level, a single-year investment gain or loss decreases or increases the required UAL contribution amount incrementally for each of the next five years, not just one, due to the 5-year ramp in the amortization policy. However, the contribution requirements beyond the first year are also impacted by investment returns beyond the first year. Historically, significant downturns in the market are often followed by higher than average returns. Such investment gains would offset the impact of these single year negative returns in years beyond fiscal year 2025-26.

- -17.2% investment return (2 standard deviation loss)
- 6.8% investment return
- 30.8% investment return (2 standard deviation gain)

The tables below show fiscal year 2025-26 projected employee and employer contributions under the investment return scenarios mentioned above.

-17.2% Return

| | 2025-26 Employer Monthly Premium | 2025-26 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | \$6.95 | \$6.95 |
| Schools 5 th Level | 0.00 | 2.00 |
| PA 1 st Level | 0.00 | 2.00 |
| PA 2 nd Level | 0.00 | 2.00 |
| PA 3 rd Level | 0.00 | 2.00 |
| PA 4 th Level | 6.90 | 2.00 |
| PA Indexed Level | 4.85 | 4.85 |

6.8% Return

| | 2025-26 Employer Monthly Premium | 2025-26 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | \$6.60 | \$6.60 |
| Schools 5 th Level | 0.00 | 2.00 |
| PA 1 st Level | 0.00 | 2.00 |
| PA 2 nd Level | 0.00 | 2.00 |
| PA 3 rd Level | 0.00 | 2.00 |
| PA 4 th Level | 5.80 | 2.00 |
| PA Indexed Level | 3.00 | 3.00 |

30.8% Return

| | 2025-26 Employer Monthly Premium | 2025-26 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | \$6.50 | \$6.50 |
| Schools 5 th Level | 0.00 | 2.00 |
| PA 1 st Level | 0.00 | 2.00 |
| PA 2 nd Level | 0.00 | 2.00 |
| PA 3 rd Level | 0.00 | 2.00 |
| PA 4 th Level | 3.30 | 2.00 |
| PA Indexed Level | 1.10 | 2.00 |

Risk Analysis

Discount Rate Sensitivity

The following tables illustrate the sensitivity of the valuation results to the discount rate assumption. Shown below are fiscal year 2024-25 contributions assuming alternate discount rates of 5.8% and 7.8%. Those rates were selected since they illustrate the impact of a 1.0% increase or decrease to the current discount rate assumption of 6.8%.

5.8% Discount Rate (-1%)

| | 2024-25 Employer Monthly Premium | 2024-25 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | \$7.65 | \$7.65 |
| Schools 5 th Level | 0.00 | 2.00 |
| PA 1 st Level | 0.00 | 2.00 |
| PA 2 nd Level | 0.00 | 2.00 |
| PA 3 rd Level | 0.00 | 2.00 |
| PA 4 th Level | 7.90 | 2.00 |
| PA Indexed Level | 4.55 | 4.55 |

Increase in Contribution

| | 2024-25 Employer Monthly Premium | 2024-25 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | \$1.05 | \$1.05 |
| Schools 5 th Level | 0.00 | 0.00 |
| PA 1 st Level | 0.00 | 0.00 |
| PA 2 nd Level | 0.00 | 0.00 |
| PA 3 rd Level | 0.00 | 0.00 |
| PA 4 th Level | 2.10 | 0.00 |
| PA Indexed Level | 1.60 | 1.60 |

7.8% Discount Rate (+1%)

| | 2024-25 Employer Monthly Premium | 2024-25 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | \$5.65 | \$5.65 |
| Schools 5 th Level | 0.00 | 2.00 |
| PA 1 st Level | 0.00 | 2.00 |
| PA 2 nd Level | 0.00 | 2.00 |
| PA 3 rd Level | 0.00 | 2.00 |
| PA 4 th Level | 3.90 | 2.00 |
| PA Indexed Level | 0.80 | 2.00 |

Decrease in Contribution

| | 2024-25 Employer Monthly Premium | 2024-25 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | (\$0.95) | (\$0.95) |
| Schools 5 th Level | 0.00 | 0.00 |
| PA 1 st Level | 0.00 | 0.00 |
| PA 2 nd Level | 0.00 | 0.00 |
| PA 3 rd Level | 0.00 | 0.00 |
| PA 4 th Level | (1.90) | 0.00 |
| PA Indexed Level | (2.15) | (0.95) |

Risk Analysis

Mortality Rate Sensitivity

The following tables illustrate the sensitivity of the valuation results to the mortality rate assumption. Shown below are fiscal year 2024-25 contributions assuming mortality rates that are 10% lower and 10% higher than the mortality tables used in the valuation. These mortality rates were only applied to individuals who were receiving a benefit or in a deferral status as of the valuation date. This analysis will give an indication of the potential required contributions if recipient mortality were to be 10% lower or 10% higher than expected over the long term.

Lower Mortality Rates (-10%)

| | 2024-25 Employer Monthly Premium | 2024-25 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | \$6.80 | \$6.80 |
| Schools 5 th Level | 0.00 | 2.00 |
| PA 1 st Level | 0.00 | 2.00 |
| PA 2 nd Level | 0.00 | 2.00 |
| PA 3 rd Level | 0.00 | 2.00 |
| PA 4 th Level | 6.00 | 2.00 |
| PA Indexed Level | 3.05 | 3.05 |

Increase in Contribution

| | 2024-25 Employer Monthly Premium | 2024-25 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | \$0.20 | \$0.20 |
| Schools 5 th Level | 0.00 | 0.00 |
| PA 1 st Level | 0.00 | 0.00 |
| PA 2 nd Level | 0.00 | 0.00 |
| PA 3 rd Level | 0.00 | 0.00 |
| PA 4 th Level | 0.20 | 0.00 |
| PA Indexed Level | 0.10 | 0.10 |

Higher Mortality Rate (+10%)

| | 2024-25 Employer Monthly Premium | 2024-25 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | \$6.45 | \$6.45 |
| Schools 5 th Level | 0.00 | 2.00 |
| PA 1 st Level | 0.00 | 2.00 |
| PA 2 nd Level | 0.00 | 2.00 |
| PA 3 rd Level | 0.00 | 2.00 |
| PA 4 th Level | 5.50 | 2.00 |
| PA Indexed Level | 2.80 | 2.80 |

Decrease in Contribution

| | 2024-25 Employer Monthly Premium | 2024-25 Employee Monthly Premium |
|-------------------------------|----------------------------------|----------------------------------|
| State 5 th Level | (\$0.15) | (\$0.15) |
| Schools 5 th Level | 0.00 | 0.00 |
| PA 1 st Level | 0.00 | 0.00 |
| PA 2 nd Level | 0.00 | 0.00 |
| PA 3 rd Level | 0.00 | 0.00 |
| PA 4 th Level | (0.30) | 0.00 |
| PA Indexed Level | (0.15) | (0.15) |

Risk Analysis

Funded Status – Low-Default-Risk Basis

Actuarial Standard of Practice (ASOP) No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, requires the disclosure of a low-default-risk obligation measure (LDROM) of benefit costs accrued as of the valuation date using a discount rate based on the yields of high quality fixed income securities with cash flows that replicate expected benefit payments. Conceptually, this measure represents the level at which financial markets would value the accrued plan costs, and would be approximately equal to the cost of a portfolio of low-default-risk bonds with similar financial characteristics to accrued plan costs.

As permitted in ASOP No. 4, the Actuarial Office uses the Term Insurance Method and the Entry Age Actuarial Cost Method to calculate the LDROM. As shown below, the discount rate used for the LDROM is 4.82%, which is the Standard FTSE Pension Liability Index¹ discount rate as of June 30, 2023, net of assumed administrative expenses.

| June 30, 2023 | State 5 th Level | Schools 5 th Level | Public Agency 1 st Level | Public Agency 2 nd Level |
|--|-----------------------------|-------------------------------|-------------------------------------|-------------------------------------|
| Discount Rate | 4.82% | 4.82% | 4.82% | 4.82% |
| Selected Measures on a Low-Default-Risk Basis | | | | |
| 1) Accrued Liability – Low-Default-Risk Basis (LDROM) | \$182,846,313 | \$16,900,043 | \$3,236,318 | \$2,544,801 |
| 2) Market Value of Assets (MVA) | 120,264,494 | 102,193,009 | 68,946,830 | 15,679,218 |
| 3) Unfunded Accrued Liability – Low-Default-Risk Basis [(1) – (2)] | \$62,581,819 | (\$85,292,966) | (\$65,710,512) | (\$13,134,417) |
| 4) Unfunded Accrued Liability – Funding Policy Basis | 32,350,583 | (87,910,828) | (66,238,504) | (13,519,092) |
| 5) Present Value of Unearned Investment Risk Premium [(3) – (4)] | \$30,231,236 | \$2,617,862 | \$527,992 | \$384,675 |

| June 30, 2023 | Public Agency 3 rd Level | Public Agency 4 th Level | Public Agency Indexed Level |
|--|-------------------------------------|-------------------------------------|-----------------------------|
| Discount Rate | 4.82% | 4.82% | 4.82% |
| Selected Measures on a Low-Default-Risk Basis | | | |
| 1) Accrued Liability – Low-Default-Risk Basis (LDROM) | \$37,506,556 | \$178,519,954 | \$27,285,556 |
| 2) Market Value of Assets (MVA) | 148,164,721 | 154,622,524 | 29,793,115 |
| 3) Unfunded Accrued Liability – Low-Default-Risk Basis [(1) – (2)] | (\$110,658,165) | \$23,897,430 | (\$2,507,559) |
| 4) Unfunded Accrued Liability – Funding Policy Basis | (116,799,646) | (5,009,824) | (8,295,260) |
| 5) Present Value of Unearned Investment Risk Premium [(3) – (4)] | \$6,141,481 | \$28,907,254 | \$5,787,702 |

The difference between the unfunded liabilities on a low-default-risk basis and on the funding policy basis represents the present value of the investment risk premium that must be earned in future years to keep future contributions for currently accrued plan costs at the levels anticipated by the funding policy.

Benefit security for members of the plan relies on a combination of the assets in the plan, the investment income generated from those assets, and the ability of the plan sponsor to make necessary future contributions. If future returns fall short of 6.8%, benefit security could be at risk for some plans without higher than currently anticipated future contributions.

The funded status on a low-default-risk basis is not appropriate for assessing the need for future contributions.

(1) This index is based on a yield curve of hypothetical AA-rated zero coupon corporate bonds whose maturities range from 6 months to 30 years. The index represents the single discount rate that would produce the same present value as discounting a standardized set of liability cash flows for a fully open pension plan using the yield curve. The liability cash flows are reasonably consistent with the pattern of benefits expected to be paid from the entire Public Employees' Retirement Fund for current and former plan members. A different index, hence a different discount rate, may be needed to measure the LDROM for a subset of the fund, such as a single rate plan or a group of retirees.

Appendices

A-1 Appendix A – Actuarial Methods and Assumptions

B-1 Appendix B – Principal Plan Provisions

C-1 Appendix C – Demographic and Experience Information

D-1 Appendix D – 1959 Survivor Deaths Per Year

E-1 Appendix E – List of Contracting Agencies

F-1 Appendix F – Glossary

Appendix A – Actuarial Methods and Assumptions

Actuarial Data

As stated in the Actuarial Certification, the data which serves as the basis of this valuation has been obtained from the various CalPERS databases. We have reviewed the valuation data and believe that it is reasonable and appropriate in aggregate. We are unaware of any potential data issues that would have a material effect on the results of this valuation.

Actuarial Funding Method for Public Agency 1st, 2nd, 3rd, and 4th Level, and State and Schools 5th Level Pools

The actuarial funding method used, as provided in State statute for Public Agencies 1st, 2nd, 3rd, and 4th Level pools, and State and Schools 5th Level pools, is called the Term Insurance Method. This is a terminal funding arrangement with no pre-funding of the survivor benefits payable on account of deaths expected to occur beyond those in the coming year.

The Normal Cost for the year is equal to the Expected Claims (present value of benefits arising from deaths) that will occur in the coming fiscal year. The Expected Claims for the coming fiscal year are determined as the expected claim value divided by the expected member months for the coming fiscal year. The Normal Cost (or Expected Claims) per member, per month for the coming fiscal year is equal to a weighted average of ten years of Normal Costs. The Normal Cost (or Actual Claims divided by Actual Members) for each of the previous years are calculated as the Present Value of Benefits divided by the member counts. The ten years used in this calculation end one year before the valuation date. The most recent year is excluded, and the chart below shows the weights given to the years prior to and including the valuation year. This method attempts to mitigate Normal Cost volatility from year to year by phasing in the experience over a ten-year period. The Present Value of Benefits for current Survivors are recalculated each year, using the current assumptions. The reason for excluding the claims from the most recent year is that when new deaths occur each year, it is often unknown which benefit will ultimately apply (i.e., 1957 Survivor, Industrial Death, Pre-Retirement Option 2, or 1959 Survivor). Many times, new deaths are initially placed under the 1959 Survivor roll, but ultimately are reclassified to another roll sometime later. This can create extreme volatility in the Normal Cost calculation between valuation years, especially for smaller pools.

Weights for Historical Data to Calculate Expected Claims

The table below displays the weights applied to historical Present Value of Benefits and member counts to develop the expected claims per member, per month.

| Data 't' Years Ago | Weights |
|--------------------|---------|
| 0 | 0.0% |
| 1 | 19.0% |
| 2 | 17.0% |
| 3 | 15.0% |
| 4 | 13.0% |
| 5 | 11.0% |
| 6 | 9.0% |
| 7 | 7.0% |
| 8 | 5.0% |
| 9 | 3.0% |
| 10 | 1.0% |

A Reserve for Unclaimed Benefits is included in the Accrued Liability. This is done by finding all survivors that are eligible to receive a benefit but are not currently being paid the benefit. This population is assumed to be spouses that were in deferral but have not received a benefit yet due to unforeseen reasons. The amount of this reserve is calculated as the difference between each individual's age as of the valuation date rounded to the nearest whole year minus the age for which their deferral ends, multiplied by their monthly benefit amount. Based on expected lifetimes, the maximum assumed age for receiving benefits is 87.

Appendix A - Actuarial Methods and Assumptions

Actuarial Funding Method for Public Agency 1st, 2nd, 3rd and 4th Level, and State and Schools 5th Level Pools (continued)

Based upon current mortality tables, an individual who starts receiving a benefit at age 62 is expected to continue receiving until age 87.2, while an individual who starts receiving a benefit at age 60 is expected to continue receiving until age 87.0.

The Accrued Liability is equal to the Present Value of Benefits payable to current survivors, plus the Reserve for Unclaimed Benefits. If the Accrued Liability exceeds the Market Value of Assets, the difference is called the Unfunded Liability. On the other hand, if the Market Value of Assets exceeds the Accrued Liability, the difference is called Excess Assets.

The required employer monthly premium is the total required monthly premium less the \$2.00 per month member contributions as required by State Statute Section 21581. For all Levels, existing excess assets in the pool will be amortized and directly used to offset required employer contributions. However, for the State and Schools 5th Level pools, if the total required monthly premium after amortization of excess assets exceeds \$4.00, the member and the employer shall evenly share the required monthly premium. Excess assets for the Schools 5th Level pool, and Public Agency 1st, 2nd, and 3rd Level pools were sufficient to offset required employer contributions, based on June 30, 2023 data and assumptions. Excess assets for the Public Agency 4th Level were amortized over a 30-year period and are not sufficient to fully offset the required employer contribution. The resulting employer contribution for the 4th Level is \$5.80 per covered member, per month.

Actuarial Funding Method for Public Agency Indexed Level Pool

The funding method used for the Public Agency Indexed Level pool is the Entry Age Actuarial Cost Method. Under this method, projected benefits are determined for all members and the associated liabilities are spread in a manner that produces an annual cost that increases by approximately 2% in each year.

The Normal Cost for the Public Agency Indexed Level pool is the portion of the total Entry Age Normal Cost, as described in the preceding paragraph that is allocated to the current fiscal year. Since there is no cost allocated to the current fiscal year for those already receiving benefits or are in a deferred status, only active members have a Normal Cost. The population demographics, excluding population growth, are assumed to remain stable for purposes of projecting the Normal Cost to the year for which the contribution requirement is being determined.

A Reserve for Unclaimed Benefits is included in the Accrued Liability. This is done by finding all survivors that are eligible to receive a benefit but are not currently being paid the benefit. This population is assumed to be spouses that were in deferral but have not received a benefit yet due to unforeseen reasons. The amount of this reserve is calculated as the difference between each individual's age as of the valuation date rounded to the nearest whole year minus the age for which their deferral ends, multiplied by their monthly benefit amount. Based on expected lifetimes, the maximum assumed age for receiving benefits is 87. Based upon current mortality tables, an individual who starts receiving a benefit at age 62 is expected to continue receiving until age 87.2, while an individual who starts receiving a benefit at age 60 is expected to continue receiving until age 87.0.

The Accrued Liability is equal to the Present Value of Future Benefits for both current survivors and active members, less the Present Value of Future Normal Costs.

The total required monthly premium is the sum of the individual Normal Costs divided by the number of member months. The required employer monthly premium is the total required monthly premium less the \$2.00 per month member contributions as required by State Statute Section 21581. Existing excess assets in the pool will be amortized and directly used to offset required employer contributions. However, if the total required monthly premium after amortization of excess assets exceeds \$4.00, the member and the employer shall evenly share the required monthly premium. Excess assets for the Public Agency Indexed Level are amortized over a 30-year period. The employer contribution for the Indexed Level is \$2.95 per covered member, per month.

Appendix A - Actuarial Methods and Assumptions

Models

The valuation results are based on proprietary actuarial valuation models. The models are centralized and maintained by a specialized team to achieve a high degree of accuracy and consistency. The Actuarial Office is responsible for confirming the appropriateness of the inputs (such as participant data, actuarial methods and assumptions, and plan provisions) as well as performing tests and validating the reasonableness of the output. The results of our models are independently confirmed by parallel valuations performed by outside actuaries on a periodic basis using their models. In our professional judgment, our actuarial valuation models produce comprehensive funding information consistent with the purposes of the valuation and have no material limitations or known weaknesses.

Asset Valuation Method

Commencing with the June 30, 2013 valuation, assets were and continue to be valued on a Market Value basis.

Method for Projecting Active Counts

The projected counts this year assume a stable population. Projected counts are necessary to determine employer premiums.

Actuarial Assumptions

In 2021, CalPERS completed its most recent asset liability management study incorporating actuarial assumptions and strategic asset allocation. In November 2021, the board adopted changes to the asset allocation that increased the expected volatility of returns. The adopted asset allocation was expected to have a long-term blended return that continued to support a discount rate assumption of 6.80%. The board also approved several changes to the demographic assumptions that more closely aligned with actual experience.

For more details and additional rationale for the selection of the actuarial assumptions, please refer to the [2021 CalPERS Experience Study and Review of Actuarial Assumptions](#) that can be found on the CalPERS website under: Forms and Publications. Click on "View All" and search for Experience Study.

All actuarial assumptions represent an estimate of future experience rather than observations of the estimates inherent in market data.

Economic Assumptions

The prescribed discount rate assumption, adopted by the board on November 17, 2021, is 6.80% compounded annually (net of investment and administrative expenses) as of June 30, 2023. The discount rate is based on the long-term expected rate of return on assets using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. The current assumption, originally based on capital market assumptions developed by the Investment Office in 2021, has been reviewed for this valuation based on capital market assumptions developed by the Investment Office in 2023.

Appendix A - Actuarial Methods and Assumptions

Demographic Assumptions:

The mortality assumptions are based on mortality rates resulting from the most recent CalPERS Experience Study adopted by the CalPERS Board in November 2021. For purposes of the mortality rates, the rates incorporate generational mortality to capture on-going mortality improvement. Generational mortality explicitly assumes that members born more recently will live longer than the members born before them thereby capturing the mortality improvement seen in the past and expected continued improvement.

Sample mortality rates for those who are receiving are shown in the following table:

| Age | Healthy Recipients | |
|-----|--------------------|---------|
| | Male | Female |
| 35 | 0.00058 | 0.00029 |
| 40 | 0.00075 | 0.00039 |
| 45 | 0.00093 | 0.00054 |
| 50 | 0.00267 | 0.00199 |
| 55 | 0.00390 | 0.00325 |
| 60 | 0.00578 | 0.00455 |
| 65 | 0.00857 | 0.00612 |
| 70 | 0.01333 | 0.00996 |
| 75 | 0.02391 | 0.01783 |
| 80 | 0.04371 | 0.03403 |
| 85 | 0.08274 | 0.06166 |
| 90 | 0.14539 | 0.11086 |
| 95 | 0.24665 | 0.20364 |
| 100 | 0.36198 | 0.31582 |
| 105 | 0.52229 | 0.44679 |
| 110 | 1.00000 | 1.00000 |

The post-retirement mortality rates above are for 2017 and are projected generationally for future years using 80% of the Society of Actuaries' Scale MP-2020.

Appendix A - Actuarial Methods and Assumptions

Indexed Level Claims Assumptions

The Public Agency Indexed Level pool's Accrued Liability and Entry Age Normal Cost for active members are calculated based on the actuarial assumptions for the plan that the members are currently in. For instance, if a member is currently working for an employer that provides a pension in a Miscellaneous 2% @ 55 plan, then the corresponding assumptions from the Miscellaneous 2% @ 55 plan would be used. Likewise, if the member is working in a Safety Police 2.7% @ 57 plan, then all the assumptions from the 2.7% @ 57 would be used. This is done to reflect the trends in the retirement based on the retirement formula and member category that an individual is working in.

The actuarial assumptions for each of these plans are as follows:

Eligible Survivor Status

For active members of both the Miscellaneous and Safety plans, the probability of having eligible survivor(s) at the date of death is assumed according to the following table:

| Age at Death | Percent Having Eligible Survivor(s) |
|------------------------|-------------------------------------|
| Age 20 and Under | 30% |
| Between Ages 21 and 24 | 50% |
| Between Ages 25 and 29 | 70% |
| Between Ages 30 and 39 | 90% |
| Between Ages 40 and 49 | 95% |
| Between Ages 50 and 54 | 90% |
| Age 55 and Above | 85% |

Average claims are developed at every age using actual experience from the program. These average claims are then multiplied by the percentages in the above table. The results are used to estimate expected claims in the active population.

Benefit amounts and Present Value of Benefits were based on average claim experience. A sample of the average claim experience is shown in the table below:

| Age at Death | Present Value of Average Claim ¹ at the Time of Death ² |
|------------------|---|
| Age 20 and Under | \$32,572 |
| 25 | 103,760 |
| 30 | 143,736 |
| 35 | 137,788 |
| 40 | 129,879 |
| 45 | 111,247 |
| 50 | 89,123 |
| 55 | 72,691 |
| 60 | 66,119 |
| 65 | 64,007 |
| 70 | 64,397 |
| 75 | 63,822 |
| Age 80 and Above | 57,314 |

(1) Average claims were calculated using actual experience from the 1959 Survivor program and smoothed using a polynomial regression model.

(2) Values are based on an initial benefit of \$500/\$1,000/\$1,500 for one, two, or three survivors, respectively. This was the benefit level on June 30, 2000, when the Indexed Level first became effective. The valuation program increases these amounts by 2% per year up to the current valuation year.

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level

Pre-Retirement Mortality

See sample rates in the table below. The non-industrial death rates are used for all plans. The industrial death rates are used for Safety plans (except for Local Prosecutor Safety members where the corresponding Miscellaneous plan does not have the Industrial Death Benefit).

Non-Industrial (Not Job-Related) and Industrial (Job-Related) Death

Rates vary by age and sex. See sample rates in table below.

| Age | Pre-Retirement Mortality | | | | | |
|-----|--------------------------|---------|----------------------|---------|------------------|---------|
| | Miscellaneous | | Safety | | | |
| | Non-Industrial Death | | Non-Industrial Death | | Industrial Death | |
| | Male | Female | Male | Female | Male | Female |
| 20 | 0.00039 | 0.00014 | 0.00038 | 0.00014 | 0.00004 | 0.00002 |
| 25 | 0.00033 | 0.00013 | 0.00034 | 0.00018 | 0.00004 | 0.00002 |
| 30 | 0.00044 | 0.00019 | 0.00042 | 0.00025 | 0.00005 | 0.00003 |
| 35 | 0.00058 | 0.00029 | 0.00048 | 0.00034 | 0.00005 | 0.00004 |
| 40 | 0.00075 | 0.00039 | 0.00055 | 0.00042 | 0.00006 | 0.00005 |
| 45 | 0.00093 | 0.00054 | 0.00066 | 0.00053 | 0.00007 | 0.00006 |
| 50 | 0.00134 | 0.00081 | 0.00092 | 0.00073 | 0.00010 | 0.00008 |
| 55 | 0.00198 | 0.00123 | 0.00138 | 0.00106 | 0.00015 | 0.00012 |
| 60 | 0.00287 | 0.00179 | 0.00221 | 0.00151 | 0.00025 | 0.00017 |

The pre-retirement mortality rates above are for 2017 and are projected generationally for future years using 80% of the Society of Actuaries' Scale MP-2020.

Miscellaneous plans usually have industrial death rates set to zero unless the agency has specifically contracted for Industrial Death Benefits. If so, each non-industrial death rate shown above will be split into two components; 99% will become the non-industrial death rate and 1% will become the industrial death rate.

Termination with Refund

Rates vary by entry age and service for Miscellaneous plans. Rates vary by service for Safety plans. See sample rates in the tables below.

| Duration of Service | Public Agency Miscellaneous | | | | | | | | | | | |
|---------------------|-----------------------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|
| | Entry Age 20 | | Entry Age 25 | | Entry Age 30 | | Entry Age 35 | | Entry Age 40 | | Entry Age 45 | |
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 0 | 0.1851 | 0.1944 | 0.1769 | 0.1899 | 0.1631 | 0.1824 | 0.1493 | 0.1749 | 0.1490 | 0.1731 | 0.1487 | 0.1713 |
| 1 | 0.1531 | 0.1673 | 0.1432 | 0.1602 | 0.1266 | 0.1484 | 0.1101 | 0.1366 | 0.1069 | 0.1323 | 0.1037 | 0.1280 |
| 2 | 0.1218 | 0.1381 | 0.1125 | 0.1307 | 0.0970 | 0.1183 | 0.0815 | 0.1058 | 0.0771 | 0.0998 | 0.0726 | 0.0938 |
| 3 | 0.0927 | 0.1085 | 0.0852 | 0.1020 | 0.0727 | 0.0912 | 0.0601 | 0.0804 | 0.0556 | 0.0737 | 0.0511 | 0.0669 |
| 4 | 0.0672 | 0.0801 | 0.0616 | 0.0752 | 0.0524 | 0.0670 | 0.0431 | 0.0587 | 0.0392 | 0.0523 | 0.0352 | 0.0459 |
| 5 | 0.0463 | 0.0551 | 0.0423 | 0.0517 | 0.0358 | 0.0461 | 0.0292 | 0.0404 | 0.0261 | 0.0350 | 0.0230 | 0.0296 |
| 10 | 0.0112 | 0.0140 | 0.0101 | 0.0129 | 0.0083 | 0.0112 | 0.0064 | 0.0094 | 0.0048 | 0.0071 | 0.0033 | 0.0049 |
| 15 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 20 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 25 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 30 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 35 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Termination with Refund (continued)

| Duration of Service | Public Agency Safety | | | | | |
|---------------------|----------------------|--------|--------|--------|----------------------|--------|
| | Fire | | Police | | County Peace Officer | |
| | Male | Female | Male | Female | Male | Female |
| 0 | 0.1022 | 0.1317 | 0.1298 | 0.1389 | 0.1086 | 0.1284 |
| 1 | 0.0686 | 0.1007 | 0.0789 | 0.0904 | 0.0777 | 0.0998 |
| 2 | 0.0441 | 0.0743 | 0.0464 | 0.0566 | 0.0549 | 0.0759 |
| 3 | 0.0272 | 0.0524 | 0.0274 | 0.0343 | 0.0385 | 0.0562 |
| 4 | 0.0161 | 0.0349 | 0.0170 | 0.0206 | 0.0268 | 0.0402 |
| 5 | 0.0092 | 0.0214 | 0.0113 | 0.0128 | 0.0186 | 0.0276 |
| 10 | 0.0015 | 0.0000 | 0.0032 | 0.0047 | 0.0046 | 0.0038 |
| 15 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0023 | 0.0036 |
| 20 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 25 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 30 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 35 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

The Police termination and refund rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff, and School Police.

Termination with Vested Benefits

Rates vary by entry age and service for Miscellaneous plans. Rates vary by service for Safety plans. See sample rates in the tables below.

| Duration of Service | Public Agency Miscellaneous | | | | | | | | | |
|---------------------|-----------------------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|
| | Entry Age 20 | | Entry Age 25 | | Entry Age 30 | | Entry Age 35 | | Entry Age 40 | |
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 5 | 0.0381 | 0.0524 | 0.0381 | 0.0524 | 0.0358 | 0.0464 | 0.0334 | 0.0405 | 0.0301 | 0.0380 |
| 10 | 0.0265 | 0.0362 | 0.0265 | 0.0362 | 0.0254 | 0.0334 | 0.0244 | 0.0307 | 0.0197 | 0.0236 |
| 15 | 0.0180 | 0.0252 | 0.0180 | 0.0252 | 0.0166 | 0.0213 | 0.0152 | 0.0174 | 0.0119 | 0.0132 |
| 20 | 0.0141 | 0.0175 | 0.0141 | 0.0175 | 0.0110 | 0.0131 | 0.0079 | 0.0087 | 0.0000 | 0.0000 |
| 25 | 0.0084 | 0.0108 | 0.0084 | 0.0108 | 0.0064 | 0.0076 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 30 | 0.0047 | 0.0056 | 0.0047 | 0.0056 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 35 | 0.0038 | 0.0041 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

The Miscellaneous termination with vested benefits rates are also used for Local Prosecutors.

| Duration of Service | Public Agency Safety | | | | | |
|---------------------|----------------------|--------|--------|--------|----------------------|--------|
| | Fire | | Police | | County Peace Officer | |
| | Male | Female | Male | Female | Male | Female |
| 5 | 0.0089 | 0.0224 | 0.0156 | 0.0272 | 0.0177 | 0.0266 |
| 10 | 0.0066 | 0.0164 | 0.0113 | 0.0198 | 0.0126 | 0.0189 |
| 15 | 0.0048 | 0.0120 | 0.0083 | 0.0144 | 0.0089 | 0.0134 |
| 20 | 0.0035 | 0.0088 | 0.0060 | 0.0105 | 0.0063 | 0.0095 |
| 25 | 0.0024 | 0.0061 | 0.0042 | 0.0073 | 0.0042 | 0.0063 |
| 30 | 0.0012 | 0.0031 | 0.0021 | 0.0037 | 0.0021 | 0.0031 |
| 35 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

The Police termination with vested benefits rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff, and School Police.

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Non-Industrial (Not Job-Related) and Industrial (Job-Related) Disability

Rates vary by age and gender. See sample rates in the table below.

| Age | Public Agency Miscellaneous | |
|-----|-----------------------------|--------|
| | Non-Industrial Disability | |
| | Male | Female |
| 20 | 0.0001 | 0.0000 |
| 25 | 0.0001 | 0.0001 |
| 30 | 0.0002 | 0.0003 |
| 35 | 0.0004 | 0.0007 |
| 40 | 0.0009 | 0.0012 |
| 45 | 0.0015 | 0.0019 |
| 50 | 0.0015 | 0.0019 |
| 55 | 0.0014 | 0.0013 |
| 60 | 0.0012 | 0.0009 |

The Miscellaneous non-industrial disability rates are used for Local Prosecutors. Normally, rates are zero for Miscellaneous plans unless the agency has specifically contracted for Industrial Disability Benefits. If so, each Miscellaneous non-industrial disability rate will be split into two components: 50% will become the non-industrial disability rate and 50% will become the industrial disability rate.

| Age | Public Agency Safety | | | | | |
|-----|---------------------------|--------|----------------------|-----------------------|--------|----------------------|
| | Non-Industrial Disability | | | Industrial Disability | | |
| | Fire | Police | County Peace Officer | Fire | Police | County Peace Officer |
| 20 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0000 | 0.0004 |
| 25 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0017 | 0.0013 |
| 30 | 0.0001 | 0.0001 | 0.0001 | 0.0006 | 0.0048 | 0.0025 |
| 35 | 0.0001 | 0.0002 | 0.0003 | 0.0012 | 0.0079 | 0.0037 |
| 40 | 0.0001 | 0.0002 | 0.0006 | 0.0023 | 0.0110 | 0.0051 |
| 45 | 0.0002 | 0.0003 | 0.0011 | 0.0040 | 0.0141 | 0.0067 |
| 50 | 0.0004 | 0.0005 | 0.0016 | 0.0208 | 0.0185 | 0.0092 |
| 55 | 0.0006 | 0.0007 | 0.0009 | 0.0307 | 0.0479 | 0.0151 |
| 60 | 0.0006 | 0.0011 | 0.0005 | 0.0438 | 0.0602 | 0.0174 |

The Police non-industrial disability rates are also used for Other Safety, Local Sheriff, and School Police. The Police industrial disability rates are used for Local Sheriff and Other Safety. 50% of the Police industrial disability rates are used for School Police. 1% of the Police industrial disability rates are used for Local Prosecutors.

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Service Retirement

Rates vary by age, service, and formula, except for the Safety Half Pay at 55 and 2% at 55 formulas, where retirement rates vary by age only. See sample rates in the tables below.

| Age | Public Agency Miscellaneous 1.5% @ 65 | | | | | |
|-----|---------------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.008 | 0.011 | 0.013 | 0.015 | 0.017 | 0.019 |
| 51 | 0.007 | 0.010 | 0.012 | 0.013 | 0.015 | 0.017 |
| 52 | 0.010 | 0.014 | 0.017 | 0.019 | 0.021 | 0.024 |
| 53 | 0.008 | 0.012 | 0.015 | 0.017 | 0.019 | 0.022 |
| 54 | 0.012 | 0.016 | 0.019 | 0.022 | 0.025 | 0.028 |
| 55 | 0.018 | 0.025 | 0.031 | 0.035 | 0.038 | 0.043 |
| 56 | 0.015 | 0.021 | 0.025 | 0.029 | 0.032 | 0.036 |
| 57 | 0.020 | 0.028 | 0.033 | 0.038 | 0.043 | 0.048 |
| 58 | 0.024 | 0.033 | 0.040 | 0.046 | 0.052 | 0.058 |
| 59 | 0.028 | 0.039 | 0.048 | 0.054 | 0.060 | 0.067 |
| 60 | 0.049 | 0.069 | 0.083 | 0.094 | 0.105 | 0.118 |
| 61 | 0.062 | 0.087 | 0.106 | 0.120 | 0.133 | 0.150 |
| 62 | 0.104 | 0.146 | 0.177 | 0.200 | 0.223 | 0.251 |
| 63 | 0.099 | 0.139 | 0.169 | 0.191 | 0.213 | 0.239 |
| 64 | 0.097 | 0.136 | 0.165 | 0.186 | 0.209 | 0.233 |
| 65 | 0.140 | 0.197 | 0.240 | 0.271 | 0.302 | 0.339 |
| 66 | 0.092 | 0.130 | 0.157 | 0.177 | 0.198 | 0.222 |
| 67 | 0.129 | 0.181 | 0.220 | 0.249 | 0.277 | 0.311 |
| 68 | 0.092 | 0.129 | 0.156 | 0.177 | 0.197 | 0.221 |
| 69 | 0.092 | 0.130 | 0.158 | 0.178 | 0.199 | 0.224 |
| 70 | 0.103 | 0.144 | 0.175 | 0.198 | 0.221 | 0.248 |

| Age | Public Agency Miscellaneous 2% @ 60 | | | | | |
|-----|-------------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.010 | 0.011 | 0.014 | 0.014 | 0.017 | 0.017 |
| 51 | 0.017 | 0.013 | 0.014 | 0.010 | 0.010 | 0.010 |
| 52 | 0.014 | 0.014 | 0.018 | 0.015 | 0.016 | 0.016 |
| 53 | 0.015 | 0.012 | 0.013 | 0.010 | 0.011 | 0.011 |
| 54 | 0.006 | 0.010 | 0.017 | 0.016 | 0.018 | 0.018 |
| 55 | 0.012 | 0.016 | 0.024 | 0.032 | 0.036 | 0.036 |
| 56 | 0.010 | 0.014 | 0.023 | 0.030 | 0.034 | 0.034 |
| 57 | 0.006 | 0.018 | 0.030 | 0.040 | 0.044 | 0.044 |
| 58 | 0.022 | 0.023 | 0.033 | 0.042 | 0.046 | 0.046 |
| 59 | 0.039 | 0.033 | 0.040 | 0.047 | 0.050 | 0.050 |
| 60 | 0.063 | 0.069 | 0.074 | 0.090 | 0.137 | 0.116 |
| 61 | 0.044 | 0.058 | 0.066 | 0.083 | 0.131 | 0.113 |
| 62 | 0.084 | 0.107 | 0.121 | 0.153 | 0.238 | 0.205 |
| 63 | 0.173 | 0.166 | 0.165 | 0.191 | 0.283 | 0.235 |
| 64 | 0.120 | 0.145 | 0.164 | 0.147 | 0.160 | 0.172 |
| 65 | 0.138 | 0.160 | 0.214 | 0.216 | 0.237 | 0.283 |
| 66 | 0.198 | 0.228 | 0.249 | 0.216 | 0.228 | 0.239 |
| 67 | 0.207 | 0.242 | 0.230 | 0.233 | 0.233 | 0.233 |
| 68 | 0.201 | 0.234 | 0.225 | 0.231 | 0.231 | 0.231 |
| 69 | 0.152 | 0.173 | 0.164 | 0.166 | 0.166 | 0.166 |
| 70 | 0.200 | 0.200 | 0.200 | 0.200 | 0.200 | 0.200 |

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Service Retirement (continued)

| Age | Public Agency Miscellaneous 2% @ 55 | | | | | |
|-----|-------------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.014 | 0.014 | 0.017 | 0.021 | 0.023 | 0.024 |
| 51 | 0.013 | 0.017 | 0.017 | 0.018 | 0.018 | 0.019 |
| 52 | 0.013 | 0.018 | 0.018 | 0.020 | 0.020 | 0.021 |
| 53 | 0.013 | 0.019 | 0.021 | 0.024 | 0.025 | 0.026 |
| 54 | 0.017 | 0.025 | 0.028 | 0.032 | 0.033 | 0.035 |
| 55 | 0.045 | 0.042 | 0.053 | 0.086 | 0.098 | 0.123 |
| 56 | 0.018 | 0.036 | 0.056 | 0.086 | 0.102 | 0.119 |
| 57 | 0.041 | 0.046 | 0.056 | 0.076 | 0.094 | 0.120 |
| 58 | 0.052 | 0.044 | 0.048 | 0.074 | 0.106 | 0.123 |
| 59 | 0.043 | 0.058 | 0.073 | 0.092 | 0.105 | 0.126 |
| 60 | 0.059 | 0.064 | 0.083 | 0.115 | 0.154 | 0.170 |
| 61 | 0.087 | 0.074 | 0.087 | 0.107 | 0.147 | 0.168 |
| 62 | 0.115 | 0.123 | 0.151 | 0.180 | 0.227 | 0.237 |
| 63 | 0.116 | 0.127 | 0.164 | 0.202 | 0.252 | 0.261 |
| 64 | 0.084 | 0.138 | 0.153 | 0.190 | 0.227 | 0.228 |
| 65 | 0.167 | 0.187 | 0.210 | 0.262 | 0.288 | 0.291 |
| 66 | 0.187 | 0.258 | 0.280 | 0.308 | 0.318 | 0.319 |
| 67 | 0.195 | 0.235 | 0.244 | 0.277 | 0.269 | 0.280 |
| 68 | 0.228 | 0.248 | 0.250 | 0.241 | 0.245 | 0.245 |
| 69 | 0.188 | 0.201 | 0.209 | 0.219 | 0.231 | 0.231 |
| 70 | 0.229 | 0.229 | 0.229 | 0.229 | 0.229 | 0.229 |

| Age | Public Agency Miscellaneous 2.5% @ 55 | | | | | |
|-----|---------------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.014 | 0.017 | 0.027 | 0.035 | 0.046 | 0.050 |
| 51 | 0.019 | 0.021 | 0.025 | 0.030 | 0.038 | 0.040 |
| 52 | 0.018 | 0.020 | 0.026 | 0.034 | 0.038 | 0.037 |
| 53 | 0.013 | 0.021 | 0.031 | 0.045 | 0.052 | 0.053 |
| 54 | 0.025 | 0.025 | 0.030 | 0.046 | 0.057 | 0.068 |
| 55 | 0.029 | 0.042 | 0.064 | 0.109 | 0.150 | 0.225 |
| 56 | 0.036 | 0.047 | 0.068 | 0.106 | 0.134 | 0.194 |
| 57 | 0.051 | 0.047 | 0.060 | 0.092 | 0.116 | 0.166 |
| 58 | 0.035 | 0.046 | 0.062 | 0.093 | 0.119 | 0.170 |
| 59 | 0.029 | 0.053 | 0.072 | 0.112 | 0.139 | 0.165 |
| 60 | 0.039 | 0.069 | 0.094 | 0.157 | 0.177 | 0.221 |
| 61 | 0.080 | 0.077 | 0.086 | 0.140 | 0.167 | 0.205 |
| 62 | 0.086 | 0.131 | 0.149 | 0.220 | 0.244 | 0.284 |
| 63 | 0.135 | 0.135 | 0.147 | 0.214 | 0.222 | 0.262 |
| 64 | 0.114 | 0.128 | 0.158 | 0.177 | 0.233 | 0.229 |
| 65 | 0.112 | 0.174 | 0.222 | 0.209 | 0.268 | 0.273 |
| 66 | 0.235 | 0.254 | 0.297 | 0.289 | 0.321 | 0.337 |
| 67 | 0.237 | 0.240 | 0.267 | 0.249 | 0.267 | 0.277 |
| 68 | 0.258 | 0.271 | 0.275 | 0.207 | 0.210 | 0.212 |
| 69 | 0.117 | 0.208 | 0.266 | 0.219 | 0.250 | 0.270 |
| 70 | 0.229 | 0.229 | 0.229 | 0.229 | 0.229 | 0.229 |

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Service Retirement (continued)

| Age | Public Agency Miscellaneous 2.7% @ 55 | | | | | |
|-----|---------------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.011 | 0.016 | 0.022 | 0.033 | 0.034 | 0.038 |
| 51 | 0.018 | 0.019 | 0.023 | 0.032 | 0.031 | 0.031 |
| 52 | 0.019 | 0.020 | 0.026 | 0.035 | 0.034 | 0.037 |
| 53 | 0.020 | 0.020 | 0.025 | 0.043 | 0.048 | 0.053 |
| 54 | 0.018 | 0.030 | 0.040 | 0.052 | 0.053 | 0.070 |
| 55 | 0.045 | 0.058 | 0.082 | 0.138 | 0.208 | 0.278 |
| 56 | 0.057 | 0.062 | 0.080 | 0.121 | 0.178 | 0.222 |
| 57 | 0.045 | 0.052 | 0.071 | 0.106 | 0.147 | 0.182 |
| 58 | 0.074 | 0.060 | 0.074 | 0.118 | 0.163 | 0.182 |
| 59 | 0.058 | 0.067 | 0.086 | 0.123 | 0.158 | 0.187 |
| 60 | 0.087 | 0.084 | 0.096 | 0.142 | 0.165 | 0.198 |
| 61 | 0.073 | 0.084 | 0.101 | 0.138 | 0.173 | 0.218 |
| 62 | 0.130 | 0.133 | 0.146 | 0.187 | 0.214 | 0.249 |
| 63 | 0.122 | 0.140 | 0.160 | 0.204 | 0.209 | 0.243 |
| 64 | 0.104 | 0.124 | 0.154 | 0.202 | 0.214 | 0.230 |
| 65 | 0.182 | 0.201 | 0.242 | 0.264 | 0.293 | 0.293 |
| 66 | 0.272 | 0.249 | 0.273 | 0.285 | 0.312 | 0.312 |
| 67 | 0.182 | 0.217 | 0.254 | 0.249 | 0.264 | 0.264 |
| 68 | 0.223 | 0.197 | 0.218 | 0.242 | 0.273 | 0.273 |
| 69 | 0.217 | 0.217 | 0.217 | 0.217 | 0.217 | 0.217 |
| 70 | 0.227 | 0.227 | 0.227 | 0.227 | 0.227 | 0.227 |

| Age | Public Agency Miscellaneous 3% @ 60 | | | | | |
|-----|-------------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.015 | 0.020 | 0.025 | 0.039 | 0.040 | 0.044 |
| 51 | 0.041 | 0.034 | 0.032 | 0.041 | 0.036 | 0.037 |
| 52 | 0.024 | 0.020 | 0.022 | 0.039 | 0.040 | 0.041 |
| 53 | 0.018 | 0.024 | 0.032 | 0.047 | 0.048 | 0.057 |
| 54 | 0.033 | 0.033 | 0.035 | 0.051 | 0.049 | 0.052 |
| 55 | 0.137 | 0.043 | 0.051 | 0.065 | 0.076 | 0.108 |
| 56 | 0.173 | 0.038 | 0.054 | 0.075 | 0.085 | 0.117 |
| 57 | 0.019 | 0.035 | 0.059 | 0.088 | 0.111 | 0.134 |
| 58 | 0.011 | 0.040 | 0.070 | 0.105 | 0.133 | 0.162 |
| 59 | 0.194 | 0.056 | 0.064 | 0.081 | 0.113 | 0.163 |
| 60 | 0.081 | 0.085 | 0.133 | 0.215 | 0.280 | 0.333 |
| 61 | 0.080 | 0.090 | 0.134 | 0.170 | 0.223 | 0.292 |
| 62 | 0.137 | 0.153 | 0.201 | 0.250 | 0.278 | 0.288 |
| 63 | 0.128 | 0.140 | 0.183 | 0.227 | 0.251 | 0.260 |
| 64 | 0.174 | 0.147 | 0.173 | 0.224 | 0.239 | 0.264 |
| 65 | 0.152 | 0.201 | 0.262 | 0.299 | 0.323 | 0.323 |
| 66 | 0.272 | 0.273 | 0.317 | 0.355 | 0.380 | 0.380 |
| 67 | 0.218 | 0.237 | 0.268 | 0.274 | 0.284 | 0.284 |
| 68 | 0.200 | 0.228 | 0.269 | 0.285 | 0.299 | 0.299 |
| 69 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 |
| 70 | 0.245 | 0.245 | 0.245 | 0.245 | 0.245 | 0.245 |

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Service Retirement (continued)

| Age | Public Agency Miscellaneous 2% @ 62 | | | | | |
|-----|-------------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 51 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 52 | 0.005 | 0.008 | 0.012 | 0.015 | 0.019 | 0.031 |
| 53 | 0.007 | 0.011 | 0.014 | 0.018 | 0.021 | 0.032 |
| 54 | 0.007 | 0.011 | 0.015 | 0.019 | 0.023 | 0.034 |
| 55 | 0.010 | 0.019 | 0.028 | 0.036 | 0.061 | 0.096 |
| 56 | 0.014 | 0.026 | 0.038 | 0.050 | 0.075 | 0.108 |
| 57 | 0.018 | 0.029 | 0.039 | 0.050 | 0.074 | 0.107 |
| 58 | 0.023 | 0.035 | 0.048 | 0.060 | 0.073 | 0.099 |
| 59 | 0.025 | 0.038 | 0.051 | 0.065 | 0.092 | 0.128 |
| 60 | 0.031 | 0.051 | 0.071 | 0.091 | 0.111 | 0.138 |
| 61 | 0.038 | 0.058 | 0.079 | 0.100 | 0.121 | 0.167 |
| 62 | 0.044 | 0.074 | 0.104 | 0.134 | 0.164 | 0.214 |
| 63 | 0.077 | 0.105 | 0.134 | 0.163 | 0.192 | 0.237 |
| 64 | 0.072 | 0.101 | 0.129 | 0.158 | 0.187 | 0.242 |
| 65 | 0.108 | 0.141 | 0.173 | 0.206 | 0.239 | 0.300 |
| 66 | 0.132 | 0.172 | 0.212 | 0.252 | 0.292 | 0.366 |
| 67 | 0.132 | 0.172 | 0.212 | 0.252 | 0.292 | 0.366 |
| 68 | 0.120 | 0.156 | 0.193 | 0.229 | 0.265 | 0.333 |
| 69 | 0.120 | 0.156 | 0.193 | 0.229 | 0.265 | 0.333 |
| 70 | 0.120 | 0.156 | 0.193 | 0.229 | 0.265 | 0.333 |

| Public Agency Police ½ @ 55 and 2% @ 55 | |
|--|-------|
| Age | Rate |
| 50 | 0.026 |
| 51 | 0.000 |
| 52 | 0.016 |
| 53 | 0.027 |
| 54 | 0.010 |
| 55 | 0.167 |
| 56 | 0.069 |
| 57 | 0.051 |
| 58 | 0.072 |
| 59 | 0.070 |
| 60 | 0.300 |

| Public Agency Fire ½ @ 55 and 2% @ 55 | |
|--|-------|
| Age | Rate |
| 50 | 0.016 |
| 51 | 0.000 |
| 52 | 0.034 |
| 53 | 0.020 |
| 54 | 0.041 |
| 55 | 0.075 |
| 56 | 0.111 |
| 57 | 0.000 |
| 58 | 0.095 |
| 59 | 0.044 |
| 60 | 1.000 |

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Service Retirement (continued)

| Age | Public Agency Police 2% @ 50 | | | | | |
|-----|------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.018 | 0.077 | 0.056 | 0.046 | 0.043 | 0.046 |
| 51 | 0.022 | 0.087 | 0.060 | 0.048 | 0.044 | 0.047 |
| 52 | 0.020 | 0.102 | 0.081 | 0.071 | 0.069 | 0.075 |
| 53 | 0.016 | 0.072 | 0.053 | 0.045 | 0.042 | 0.046 |
| 54 | 0.006 | 0.071 | 0.071 | 0.069 | 0.072 | 0.080 |
| 55 | 0.009 | 0.040 | 0.099 | 0.157 | 0.186 | 0.186 |
| 56 | 0.020 | 0.051 | 0.108 | 0.165 | 0.194 | 0.194 |
| 57 | 0.036 | 0.072 | 0.106 | 0.139 | 0.156 | 0.156 |
| 58 | 0.001 | 0.046 | 0.089 | 0.130 | 0.152 | 0.152 |
| 59 | 0.066 | 0.094 | 0.119 | 0.143 | 0.155 | 0.155 |
| 60 | 0.177 | 0.177 | 0.177 | 0.177 | 0.177 | 0.177 |
| 61 | 0.134 | 0.134 | 0.134 | 0.134 | 0.134 | 0.134 |
| 62 | 0.184 | 0.184 | 0.184 | 0.184 | 0.184 | 0.184 |
| 63 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 |
| 64 | 0.177 | 0.177 | 0.177 | 0.177 | 0.177 | 0.177 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

These rates also apply to County Peace Officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

| Age | Public Agency Fire 2% @ 50 | | | | | |
|-----|----------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.054 | 0.054 | 0.056 | 0.080 | 0.064 | 0.066 |
| 51 | 0.020 | 0.020 | 0.021 | 0.030 | 0.024 | 0.024 |
| 52 | 0.037 | 0.037 | 0.038 | 0.054 | 0.043 | 0.045 |
| 53 | 0.051 | 0.051 | 0.053 | 0.076 | 0.061 | 0.063 |
| 54 | 0.082 | 0.082 | 0.085 | 0.121 | 0.097 | 0.100 |
| 55 | 0.139 | 0.139 | 0.139 | 0.139 | 0.139 | 0.139 |
| 56 | 0.129 | 0.129 | 0.129 | 0.129 | 0.129 | 0.129 |
| 57 | 0.085 | 0.085 | 0.085 | 0.085 | 0.085 | 0.085 |
| 58 | 0.119 | 0.119 | 0.119 | 0.119 | 0.119 | 0.119 |
| 59 | 0.167 | 0.167 | 0.167 | 0.167 | 0.167 | 0.167 |
| 60 | 0.152 | 0.152 | 0.152 | 0.152 | 0.152 | 0.152 |
| 61 | 0.179 | 0.179 | 0.179 | 0.179 | 0.179 | 0.179 |
| 62 | 0.179 | 0.179 | 0.179 | 0.179 | 0.179 | 0.179 |
| 63 | 0.179 | 0.179 | 0.179 | 0.179 | 0.179 | 0.179 |
| 64 | 0.179 | 0.179 | 0.179 | 0.179 | 0.179 | 0.179 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Service Retirement (continued)

| Age | Public Agency Police 3% @ 55 | | | | | |
|-----|------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.019 | 0.053 | 0.045 | 0.054 | 0.057 | 0.061 |
| 51 | 0.002 | 0.017 | 0.028 | 0.044 | 0.053 | 0.060 |
| 52 | 0.002 | 0.031 | 0.037 | 0.051 | 0.059 | 0.066 |
| 53 | 0.026 | 0.049 | 0.049 | 0.080 | 0.099 | 0.114 |
| 54 | 0.019 | 0.034 | 0.047 | 0.091 | 0.121 | 0.142 |
| 55 | 0.006 | 0.115 | 0.141 | 0.199 | 0.231 | 0.259 |
| 56 | 0.017 | 0.188 | 0.121 | 0.173 | 0.199 | 0.199 |
| 57 | 0.008 | 0.137 | 0.093 | 0.136 | 0.157 | 0.157 |
| 58 | 0.017 | 0.126 | 0.105 | 0.164 | 0.194 | 0.194 |
| 59 | 0.026 | 0.146 | 0.110 | 0.167 | 0.195 | 0.195 |
| 60 | 0.155 | 0.155 | 0.155 | 0.155 | 0.155 | 0.155 |
| 61 | 0.210 | 0.210 | 0.210 | 0.210 | 0.210 | 0.210 |
| 62 | 0.262 | 0.262 | 0.262 | 0.262 | 0.262 | 0.262 |
| 63 | 0.172 | 0.172 | 0.172 | 0.172 | 0.172 | 0.172 |
| 64 | 0.227 | 0.227 | 0.227 | 0.227 | 0.227 | 0.227 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

These rates also apply to County Peace Officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

| Age | Public Agency Fire 3% @ 55 | | | | | |
|-----|----------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.003 | 0.006 | 0.013 | 0.019 | 0.025 | 0.028 |
| 51 | 0.004 | 0.008 | 0.017 | 0.026 | 0.034 | 0.038 |
| 52 | 0.005 | 0.011 | 0.022 | 0.033 | 0.044 | 0.049 |
| 53 | 0.005 | 0.034 | 0.024 | 0.038 | 0.069 | 0.138 |
| 54 | 0.007 | 0.047 | 0.032 | 0.051 | 0.094 | 0.187 |
| 55 | 0.010 | 0.067 | 0.046 | 0.073 | 0.134 | 0.266 |
| 56 | 0.010 | 0.063 | 0.044 | 0.069 | 0.127 | 0.253 |
| 57 | 0.135 | 0.100 | 0.148 | 0.196 | 0.220 | 0.220 |
| 58 | 0.083 | 0.062 | 0.091 | 0.120 | 0.135 | 0.135 |
| 59 | 0.137 | 0.053 | 0.084 | 0.146 | 0.177 | 0.177 |
| 60 | 0.162 | 0.063 | 0.099 | 0.172 | 0.208 | 0.208 |
| 61 | 0.598 | 0.231 | 0.231 | 0.231 | 0.231 | 0.231 |
| 62 | 0.621 | 0.240 | 0.240 | 0.240 | 0.240 | 0.240 |
| 63 | 0.236 | 0.236 | 0.236 | 0.236 | 0.236 | 0.236 |
| 64 | 0.236 | 0.236 | 0.236 | 0.236 | 0.236 | 0.236 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Service Retirement (continued)

| Age | Public Agency Police 3% @ 50 | | | | | |
|-----|------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.124 | 0.103 | 0.113 | 0.143 | 0.244 | 0.376 |
| 51 | 0.060 | 0.081 | 0.087 | 0.125 | 0.207 | 0.294 |
| 52 | 0.016 | 0.055 | 0.111 | 0.148 | 0.192 | 0.235 |
| 53 | 0.072 | 0.074 | 0.098 | 0.142 | 0.189 | 0.237 |
| 54 | 0.018 | 0.049 | 0.105 | 0.123 | 0.187 | 0.271 |
| 55 | 0.069 | 0.074 | 0.081 | 0.113 | 0.209 | 0.305 |
| 56 | 0.064 | 0.108 | 0.113 | 0.125 | 0.190 | 0.288 |
| 57 | 0.056 | 0.109 | 0.160 | 0.182 | 0.210 | 0.210 |
| 58 | 0.108 | 0.129 | 0.173 | 0.189 | 0.214 | 0.214 |
| 59 | 0.093 | 0.144 | 0.204 | 0.229 | 0.262 | 0.262 |
| 60 | 0.343 | 0.180 | 0.159 | 0.188 | 0.247 | 0.247 |
| 61 | 0.221 | 0.221 | 0.221 | 0.221 | 0.221 | 0.221 |
| 62 | 0.213 | 0.213 | 0.213 | 0.213 | 0.213 | 0.213 |
| 63 | 0.233 | 0.233 | 0.233 | 0.233 | 0.233 | 0.233 |
| 64 | 0.234 | 0.234 | 0.234 | 0.234 | 0.234 | 0.234 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

These rates also apply to County Peace Officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

| Age | Public Agency Fire 3% @ 50 | | | | | |
|-----|----------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.095 | 0.048 | 0.053 | 0.093 | 0.134 | 0.175 |
| 51 | 0.016 | 0.032 | 0.053 | 0.085 | 0.117 | 0.149 |
| 52 | 0.013 | 0.032 | 0.054 | 0.087 | 0.120 | 0.154 |
| 53 | 0.085 | 0.044 | 0.049 | 0.089 | 0.129 | 0.170 |
| 54 | 0.038 | 0.065 | 0.074 | 0.105 | 0.136 | 0.167 |
| 55 | 0.042 | 0.043 | 0.049 | 0.085 | 0.132 | 0.215 |
| 56 | 0.133 | 0.103 | 0.075 | 0.113 | 0.151 | 0.209 |
| 57 | 0.062 | 0.048 | 0.060 | 0.124 | 0.172 | 0.213 |
| 58 | 0.124 | 0.097 | 0.092 | 0.153 | 0.194 | 0.227 |
| 59 | 0.092 | 0.071 | 0.078 | 0.144 | 0.192 | 0.233 |
| 60 | 0.056 | 0.044 | 0.061 | 0.131 | 0.186 | 0.233 |
| 61 | 0.282 | 0.219 | 0.158 | 0.198 | 0.233 | 0.260 |
| 62 | 0.292 | 0.227 | 0.164 | 0.205 | 0.241 | 0.269 |
| 63 | 0.196 | 0.196 | 0.196 | 0.196 | 0.196 | 0.196 |
| 64 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Service Retirement (continued)

| Age | Public Agency Police 2% @ 57 | | | | | |
|-----|------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.040 | 0.040 | 0.040 | 0.040 | 0.040 | 0.080 |
| 51 | 0.028 | 0.028 | 0.028 | 0.028 | 0.040 | 0.066 |
| 52 | 0.028 | 0.028 | 0.028 | 0.028 | 0.043 | 0.061 |
| 53 | 0.028 | 0.028 | 0.028 | 0.028 | 0.057 | 0.086 |
| 54 | 0.028 | 0.028 | 0.028 | 0.032 | 0.069 | 0.110 |
| 55 | 0.050 | 0.050 | 0.050 | 0.067 | 0.099 | 0.179 |
| 56 | 0.046 | 0.046 | 0.046 | 0.062 | 0.090 | 0.160 |
| 57 | 0.054 | 0.054 | 0.054 | 0.072 | 0.106 | 0.191 |
| 58 | 0.060 | 0.060 | 0.060 | 0.066 | 0.103 | 0.171 |
| 59 | 0.060 | 0.060 | 0.060 | 0.069 | 0.105 | 0.171 |
| 60 | 0.113 | 0.113 | 0.113 | 0.113 | 0.113 | 0.171 |
| 61 | 0.108 | 0.108 | 0.108 | 0.108 | 0.108 | 0.128 |
| 62 | 0.113 | 0.113 | 0.113 | 0.113 | 0.113 | 0.159 |
| 63 | 0.113 | 0.113 | 0.113 | 0.113 | 0.113 | 0.159 |
| 64 | 0.113 | 0.113 | 0.113 | 0.113 | 0.113 | 0.239 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

These rates also apply to County Peace Officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

| Age | Public Agency Fire 2% @ 57 | | | | | |
|-----|----------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.005 | 0.005 | 0.005 | 0.005 | 0.008 | 0.012 |
| 51 | 0.006 | 0.006 | 0.006 | 0.006 | 0.009 | 0.013 |
| 52 | 0.012 | 0.012 | 0.012 | 0.012 | 0.019 | 0.028 |
| 53 | 0.033 | 0.033 | 0.033 | 0.033 | 0.050 | 0.075 |
| 54 | 0.045 | 0.045 | 0.045 | 0.045 | 0.069 | 0.103 |
| 55 | 0.061 | 0.061 | 0.061 | 0.061 | 0.094 | 0.140 |
| 56 | 0.055 | 0.055 | 0.055 | 0.055 | 0.084 | 0.126 |
| 57 | 0.081 | 0.081 | 0.081 | 0.081 | 0.125 | 0.187 |
| 58 | 0.059 | 0.059 | 0.059 | 0.059 | 0.091 | 0.137 |
| 59 | 0.055 | 0.055 | 0.055 | 0.055 | 0.084 | 0.126 |
| 60 | 0.085 | 0.085 | 0.085 | 0.085 | 0.131 | 0.196 |
| 61 | 0.085 | 0.085 | 0.085 | 0.085 | 0.131 | 0.196 |
| 62 | 0.085 | 0.085 | 0.085 | 0.085 | 0.131 | 0.196 |
| 63 | 0.085 | 0.085 | 0.085 | 0.085 | 0.131 | 0.196 |
| 64 | 0.085 | 0.085 | 0.085 | 0.085 | 0.131 | 0.196 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Service Retirement (continued)

| Age | Public Agency Police 2.5% @ 57 | | | | | |
|-----|--------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 |
| 51 | 0.038 | 0.038 | 0.038 | 0.038 | 0.055 | 0.089 |
| 52 | 0.038 | 0.038 | 0.038 | 0.038 | 0.058 | 0.082 |
| 53 | 0.036 | 0.036 | 0.036 | 0.036 | 0.073 | 0.111 |
| 54 | 0.036 | 0.036 | 0.036 | 0.041 | 0.088 | 0.142 |
| 55 | 0.061 | 0.061 | 0.061 | 0.082 | 0.120 | 0.217 |
| 56 | 0.056 | 0.056 | 0.056 | 0.075 | 0.110 | 0.194 |
| 57 | 0.060 | 0.060 | 0.060 | 0.080 | 0.118 | 0.213 |
| 58 | 0.072 | 0.072 | 0.072 | 0.079 | 0.124 | 0.205 |
| 59 | 0.072 | 0.072 | 0.072 | 0.083 | 0.126 | 0.205 |
| 60 | 0.135 | 0.135 | 0.135 | 0.135 | 0.135 | 0.205 |
| 61 | 0.130 | 0.130 | 0.130 | 0.130 | 0.130 | 0.153 |
| 62 | 0.135 | 0.135 | 0.135 | 0.135 | 0.135 | 0.191 |
| 63 | 0.135 | 0.135 | 0.135 | 0.135 | 0.135 | 0.191 |
| 64 | 0.135 | 0.135 | 0.135 | 0.135 | 0.135 | 0.287 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

These rates also apply to County Peace Officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

| Age | Public Agency Fire 2.5% @ 57 | | | | | |
|-----|------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.007 | 0.007 | 0.007 | 0.007 | 0.010 | 0.015 |
| 51 | 0.008 | 0.008 | 0.008 | 0.008 | 0.012 | 0.018 |
| 52 | 0.016 | 0.016 | 0.016 | 0.016 | 0.025 | 0.038 |
| 53 | 0.042 | 0.042 | 0.042 | 0.042 | 0.064 | 0.096 |
| 54 | 0.057 | 0.057 | 0.057 | 0.057 | 0.088 | 0.132 |
| 55 | 0.074 | 0.074 | 0.074 | 0.074 | 0.114 | 0.170 |
| 56 | 0.066 | 0.066 | 0.066 | 0.066 | 0.102 | 0.153 |
| 57 | 0.090 | 0.090 | 0.090 | 0.090 | 0.139 | 0.208 |
| 58 | 0.071 | 0.071 | 0.071 | 0.071 | 0.110 | 0.164 |
| 59 | 0.066 | 0.066 | 0.066 | 0.066 | 0.101 | 0.151 |
| 60 | 0.102 | 0.102 | 0.102 | 0.102 | 0.157 | 0.235 |
| 61 | 0.102 | 0.102 | 0.102 | 0.102 | 0.157 | 0.236 |
| 62 | 0.102 | 0.102 | 0.102 | 0.102 | 0.157 | 0.236 |
| 63 | 0.102 | 0.102 | 0.102 | 0.102 | 0.157 | 0.236 |
| 64 | 0.102 | 0.102 | 0.102 | 0.102 | 0.157 | 0.236 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Appendix A - Actuarial Methods and Assumptions

Additional Actuarial Assumptions Applicable to the PA Indexed Level (continued)

Service Retirement (continued)

| Age | Public Agency Police 2.7% @ 57 | | | | | |
|-----|--------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 |
| 51 | 0.040 | 0.040 | 0.040 | 0.040 | 0.058 | 0.094 |
| 52 | 0.038 | 0.038 | 0.038 | 0.038 | 0.058 | 0.083 |
| 53 | 0.038 | 0.038 | 0.038 | 0.038 | 0.077 | 0.117 |
| 54 | 0.038 | 0.038 | 0.038 | 0.044 | 0.093 | 0.150 |
| 55 | 0.068 | 0.068 | 0.068 | 0.091 | 0.134 | 0.242 |
| 56 | 0.063 | 0.063 | 0.063 | 0.084 | 0.123 | 0.217 |
| 57 | 0.060 | 0.060 | 0.060 | 0.080 | 0.118 | 0.213 |
| 58 | 0.080 | 0.080 | 0.080 | 0.088 | 0.138 | 0.228 |
| 59 | 0.080 | 0.080 | 0.080 | 0.092 | 0.140 | 0.228 |
| 60 | 0.150 | 0.150 | 0.150 | 0.150 | 0.150 | 0.228 |
| 61 | 0.144 | 0.144 | 0.144 | 0.144 | 0.144 | 0.170 |
| 62 | 0.150 | 0.150 | 0.150 | 0.150 | 0.150 | 0.213 |
| 63 | 0.150 | 0.150 | 0.150 | 0.150 | 0.150 | 0.213 |
| 64 | 0.150 | 0.150 | 0.150 | 0.150 | 0.150 | 0.319 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

These rates also apply to County Peace Officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

| Age | Public Agency Fire 2.7% @ 57 | | | | | |
|-----|------------------------------|----------|----------|----------|----------|----------|
| | Duration of Service | | | | | |
| | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.007 | 0.007 | 0.007 | 0.007 | 0.010 | 0.015 |
| 51 | 0.008 | 0.008 | 0.008 | 0.008 | 0.013 | 0.019 |
| 52 | 0.016 | 0.016 | 0.016 | 0.016 | 0.025 | 0.038 |
| 53 | 0.044 | 0.044 | 0.044 | 0.044 | 0.068 | 0.102 |
| 54 | 0.061 | 0.061 | 0.061 | 0.061 | 0.093 | 0.140 |
| 55 | 0.083 | 0.083 | 0.083 | 0.083 | 0.127 | 0.190 |
| 56 | 0.074 | 0.074 | 0.074 | 0.074 | 0.114 | 0.171 |
| 57 | 0.090 | 0.090 | 0.090 | 0.090 | 0.139 | 0.208 |
| 58 | 0.079 | 0.079 | 0.079 | 0.079 | 0.122 | 0.182 |
| 59 | 0.073 | 0.073 | 0.073 | 0.073 | 0.112 | 0.168 |
| 60 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 61 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 62 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 63 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 64 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Appendix B – Principal Plan Provisions

The 1959 Survivor program was designed to provide pre-retirement death benefits comparable to those provided by Social Security, formally the Federal Old Age and Survivor Insurance (OASI) program, to CalPERS' members not covered by Social Security.

Eligibility

The benefit is available only to those members not covered by Social Security OASI benefits. For public agencies, this benefit is provided by contract with CalPERS. Only those public agencies that contract for the 1st, 2nd, 3rd, 4th, or Indexed Levels of the program are eligible for the benefits valued in this report. The Public Agency 1st and 2nd Levels have been closed since January 1, 1994 and the 3rd Level has been closed since July 1, 2001. For State and Schools members, the 5th Level benefit is provided by State statute to certain groups of employees. Members who are eligible for the benefit are given a one-time option to join at the time of the 1959 Survivor contract. Members hired subsequent to the time of contract are automatically enrolled in the program.

Spousal or Domestic Partner Benefit

The benefit is a monthly payment to eligible surviving spouses or domestic partners age 62 or older for the Public Agency 1st, 2nd, and 3rd Levels and age 60 or older for all other Levels. The benefit is also payable under these deferred ages for spouses or partners that have care of children under the age of 22. As an example, assume an agency contracts for the 3rd Level benefit and an active member dies and leaves behind a 35-year-old spouse and 2 children, ages 5 and 15. The following table describes how the benefit would be paid over the course of time.

| Event | Monthly Benefit Paid |
|---|----------------------|
| Member Death | \$840 |
| 1 st Child Turns 22 | \$700 |
| 2 nd Child Turns 22 ¹ | \$0 |
| Spouse Turns 62 ² | \$350 |

(1) At this time, the spouse would be 52 years old and would not receive any benefit until age 62.

(2) Spouse would continue to receive this benefit until his/her death.

Child Benefit

Children are eligible if they are not married or in a registered domestic partnership and are under the age of 22 whether or not a spouse or domestic partner exists. For 3 or more children, the 3-survivor benefit is paid; for 2 children, the 2-survivor benefit is paid and so forth (see tables below). In all cases, unless a child is disabled, the benefit stops at age 22. If a child is disabled, the benefit is paid until the disability ceases.

Parental Benefits

If there is no eligible spouse or domestic partner or children, parent(s) dependent for at least half of their support from the deceased member may be eligible for benefits. The parent(s) must be over age 62 for the Public Agency 1st, 2nd, and 3rd Levels and over age 60 for all other Levels.

Appendix B - Principal Plan Provisions

Monthly Benefit Amounts

The monthly benefit amount depends upon the coverage Level within the program.

1st, 2nd, and 3rd Levels (For Members of Public Agencies who Contract)

| | 1 st Level | 2 nd Level | 3 rd Level |
|---|-----------------------|-----------------------|-----------------------|
| Spouse or Domestic Partner with Two or More Eligible Children; or Three or More Eligible Children | \$430 | \$538 | \$840 |
| Spouse or Domestic Partner with One Eligible Child; or Two Eligible Children Only | 360 | 450 | 700 |
| Spouse or Domestic Partner Age 62 or Older; or One Eligible Child Only; or Eligible Dependent parents | 180 | 225 | 350 |

4th Level and Indexed Level (For Members of Public Agencies who Contract) and 5th Level (State and Schools Members)

| | 4 th Level | Indexed Level | State and Schools 5 th Level |
|---|-----------------------|----------------------|---|
| Spouse or Domestic Partner with Two or More Eligible Children; or Three or More Eligible Children | \$2,280 | \$2,413 ¹ | \$1,800 |
| Spouse or Domestic Partner with One Eligible Child; or Two Eligible Children Only | 1,900 | 1,608 ¹ | 1,500 |
| Spouse or Domestic Partner Age 60 or Older; or One Eligible Child Only; or Eligible Dependent parents | 950 | 804 ¹ | 750 |

(1) These figures indicate calendar year benefit amounts for the Indexed Level in effect for calendar year 2024. Benefit amounts will increase by 2% each January 1.

Comparison of Social Security and CalPERS 1959 Survivor Benefits

The following tables compare current Social Security survivor benefits with current benefit levels paid under the 1959 Survivor Program.

Social Security

| Survivor Group | Low | Average | High |
|-----------------|---------|---------|---------|
| Three Survivors | \$1,794 | \$2,823 | \$4,555 |
| Two Survivors | 1,792 | 2,564 | 3,800 |
| One Survivor | 896 | 1,282 | 1,900 |

Unlike the 1959 Survivor Benefit (with the exception of the Indexed Level), Federal Social Security benefits normally receive an automatic cost-of-living adjustment every year. Also, unlike the 1959 Survivor Benefit, Social Security benefits are based on a worker's actual earnings up to the maximum covered. The values shown assume death at age 45 (benefits slightly higher at lower ages, lower at higher ages), and steady earnings. "Low" is a 2023 salary of \$25,000, "Average" is \$50,000, and "High" is \$90,000.

CalPERS 1959 Survivor Benefit

| Survivor Group | 1 st Level | 2 nd Level | 3 rd Level | 4 th Level | Indexed Level ¹ | State and Schools 5 th Level |
|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------|---|
| Three Survivors | \$430 | \$538 | \$840 | \$2,280 | \$2,413 | \$1,800 |
| Two Survivors | 360 | 450 | 700 | 1,900 | 1,608 | 1,500 |
| One Survivor | 180 | 225 | 350 | 950 | 804 | 750 |

(1) Amounts effective January 1, 2024

Summary of Plan Changes

Existing public agency employers joining the Public Agency 4th or Indexed Level pools during the 2024-25 fiscal year are required to pay only the Unfunded Liability based on their own membership (amortized over a period of five years) which exists at the time they join plus the agency's normal cost for all members at the new benefit level for the first five years. If they have excess assets, the excess assets will be amortized over five years and used to offset the agency's normal cost for each year.

Appendix C – Demographic and Experience Information

Current and Deferred Survivors – All Levels of the 1959 Survivor Program for Public Agencies, State and Schools

Currently, there are 4,237 cases where liability exists. These cases include surviving spouses or domestic partners in deferred status even though presently there are no benefits being paid. There are 9 possible survivor combinations that can be associated with each case. The combinations presented below are given as of the date of the valuation, for all Levels of the 1959 Survivor program.

| Status as of 6/30/2023 | Number | Percent |
|--|--------------|---------------------------|
| Surviving Spouse or Domestic Partner Deferred | 693 | 16.4% |
| Surviving Spouse or Domestic Partner Only Receiving | 2,580 | 60.9% |
| Surviving Spouse or Domestic Partner with One Child | 322 | 7.6% |
| Surviving Spouse or Domestic Partner with Two or More Children | 303 | 7.2% |
| One Child | 180 | 4.2% |
| Two Children | 92 | 2.2% |
| Three or More Children | 29 | 0.7% |
| One Parent | 31 | 0.7% |
| Two Parents | 7 | 0.2% |
| Totals | 4,237 | 100.0%¹ |

(1) Percentages may not sum to 100% due to rounding.

Survivor Combinations as of the Member's Date of Death – All Levels of the 1959 Survivor Program for Public Agencies, State and Schools

There exist 8,746 cases of death associated with the 1959 Survivor program since its inception where 1959 Survivor benefits became payable. With this data, a historical account of each combination can be made. Further, probabilities can be approximated with respect to these combinations when a member dies. Below is a list of all combinations on record, numbers and associated percentages as of the time of death, for all Levels of the 1959 Survivor program.

| Status as of the Member's Date of Death | Number | Percent |
|--|--------------|---------------------------|
| Surviving Spouse or Domestic Partner Deferred | 2,441 | 27.9% |
| Surviving Spouse or Domestic Partner Only Receiving | 1,116 | 12.8% |
| Surviving Spouse or Domestic Partner with One Child | 1,410 | 16.1% |
| Surviving Spouse or Domestic Partner with Two or More Children | 2,320 | 26.5% |
| One Child | 622 | 7.1% |
| Two Children | 492 | 5.6% |
| Three or More Children | 286 | 3.3% |
| One Parent | 49 | 0.6% |
| Two Parents | 10 | 0.1% |
| Totals | 8,746 | 100.0%¹ |

(1) Percentages may not sum to 100% due to rounding.

Appendix D – 1959 Survivor Deaths Per Year

1959 Survivor Deaths Per Year

Displayed below is a year-by-year account of the number of deaths under the program and the death rate each year for the last 35 years for public agencies, State, and Schools. Deaths given in the exhibit are on a calendar year basis and may change from previous valuations due mainly to reclassification of the benefit that ultimately gets paid to the survivor. Counts represent mid-year active exposure. The historic covered active counts may not match those reported in the prior year's valuation. This is due to the fact that in some cases there is a time gap between the time of the member's death and the determination of which type of death benefit that the survivor will receive.

| Calendar Year | Public Agency | | | State | | | Schools | | |
|---------------|---------------|------------------------|------------|--------|------------------------|------------|---------|------------------------|------------|
| | Deaths | Mid-Year Active Counts | Death Rate | Deaths | Mid-Year Active Counts | Death Rate | Deaths | Mid-Year Active Counts | Death Rate |
| 2022 | 93 | 142,364 | 0.07% | 67 | 75,812 | 0.09% | 9 | 10,390 | 0.09% |
| 2021 | 118 | 139,036 | 0.08% | 105 | 76,995 | 0.14% | 9 | 10,413 | 0.09% |
| 2020 | 98 | 141,081 | 0.07% | 86 | 78,713 | 0.11% | 9 | 11,219 | 0.08% |
| 2019 | 83 | 141,374 | 0.06% | 60 | 78,011 | 0.08% | 7 | 11,190 | 0.06% |
| 2018 | 75 | 140,339 | 0.05% | 55 | 77,362 | 0.07% | 7 | 10,894 | 0.06% |
| 2017 | 83 | 141,063 | 0.06% | 55 | 76,638 | 0.07% | 4 | 10,557 | 0.04% |
| 2016 | 79 | 139,581 | 0.06% | 61 | 75,782 | 0.08% | 7 | 10,259 | 0.07% |
| 2015 | 76 | 134,879 | 0.06% | 63 | 74,372 | 0.08% | 5 | 10,490 | 0.05% |
| 2014 | 67 | 132,024 | 0.05% | 52 | 72,848 | 0.07% | 3 | 10,287 | 0.03% |
| 2013 | 77 | 129,796 | 0.06% | 54 | 71,180 | 0.08% | 4 | 9,944 | 0.04% |
| 2012 | 94 | 132,754 | 0.07% | 52 | 71,759 | 0.07% | 7 | 10,123 | 0.07% |
| 2011 | 107 | 134,255 | 0.08% | 58 | 77,714 | 0.07% | 5 | 9,811 | 0.05% |
| 2010 | 86 | 138,470 | 0.06% | 57 | 79,587 | 0.07% | 7 | 10,203 | 0.07% |
| 2009 | 98 | 143,207 | 0.07% | 62 | 82,434 | 0.08% | 4 | 10,562 | 0.04% |
| 2008 | 107 | 144,828 | 0.07% | 50 | 81,369 | 0.06% | 8 | 10,550 | 0.08% |
| 2007 | 102 | 140,012 | 0.07% | 71 | 76,902 | 0.09% | 5 | 10,131 | 0.05% |
| 2006 | 88 | 137,095 | 0.06% | 69 | 71,742 | 0.10% | 13 | 9,469 | 0.14% |
| 2005 | 105 | 133,510 | 0.08% | 68 | 70,193 | 0.10% | 7 | 9,402 | 0.07% |
| 2004 | 91 | 131,633 | 0.07% | 61 | 64,252 | 0.09% | 5 | 9,325 | 0.05% |
| 2003 | 93 | 129,620 | 0.07% | 69 | 68,791 | 0.10% | 6 | 9,390 | 0.06% |
| 2002 | 87 | 129,355 | 0.07% | 50 | 65,558 | 0.08% | 4 | 9,195 | 0.04% |
| 2001 | 83 | 116,161 | 0.07% | 58 | 64,309 | 0.09% | 5 | 7,884 | 0.06% |
| 2000 | 78 | 121,538 | 0.06% | 56 | 60,349 | 0.09% | 7 | 8,338 | 0.08% |
| 1999 | 92 | 118,850 | 0.08% | 62 | 59,406 | 0.10% | 2 | 7,444 | 0.03% |
| 1998 | 87 | 112,389 | 0.08% | 58 | 55,435 | 0.10% | 6 | 6,956 | 0.09% |
| 1997 | 68 | 102,475 | 0.07% | 64 | 55,084 | 0.12% | 4 | 6,794 | 0.06% |
| 1996 | 82 | 100,494 | 0.08% | 54 | 51,746 | 0.10% | 6 | 6,726 | 0.09% |
| 1995 | 74 | 99,235 | 0.07% | 53 | 47,689 | 0.11% | 9 | 6,751 | 0.13% |
| 1994 | 68 | 98,088 | 0.07% | 58 | 47,323 | 0.12% | 10 | 6,653 | 0.15% |
| 1993 | 74 | 97,752 | 0.08% | 53 | 46,872 | 0.11% | 4 | 6,776 | 0.06% |
| 1992 | 88 | 95,840 | 0.09% | 45 | 48,872 | 0.09% | 8 | 6,823 | 0.12% |
| 1991 | 96 | 91,574 | 0.10% | 41 | 47,708 | 0.09% | 7 | 7,752 | 0.09% |
| 1990 | 88 | 86,196 | 0.10% | 61 | 45,502 | 0.13% | 7 | 7,942 | 0.09% |
| 1989 | 65 | 82,046 | 0.08% | 60 | 44,069 | 0.14% | 6 | 6,899 | 0.09% |
| 1988 | 74 | 84,808 | 0.09% | 52 | 41,980 | 0.12% | 9 | 7,100 | 0.13% |

Appendix E – List of Contracting Agencies

Level 1

1. Belmont Fire Protection District, Miscellaneous
2. Central Basin Municipal Water District, Miscellaneous
3. City and County of San Francisco, Safety - County Peace Officer
4. City and County of San Francisco, Safety - Sheriff
5. City of Baldwin Park, Miscellaneous
6. City of Baldwin Park, Safety - Police
7. City of Bishop, Miscellaneous
8. City of Bishop, Safety - Police
9. City of Calexico, Safety - Fire
10. City of Calexico, Safety - Police
11. City of Camarillo, Safety - Fire
12. City of Camarillo, Safety - Police
13. City of Coachella City, Miscellaneous
14. City of Coachella City, Safety - Fire
15. City of Coachella City, Safety - Police
16. City of Compton, Safety - Fire
17. City of Culver City, Miscellaneous
18. City of Dixon, Miscellaneous
19. City of El Segundo, Miscellaneous
20. City of Glendora, Safety - Fire
21. City of Hawthorne, Miscellaneous
22. City of Hawthorne, Safety - Fire
23. City of Hawthorne, Safety - Police
24. City of Hemet, Safety - Police
25. City of Indio, Safety - Fire
26. City of Indio, Safety - Police
27. City of Lynwood, Safety - Police
28. City of Madera, Safety - Fire
29. City of Manhattan Beach, Safety - Police
30. City of Maywood, Safety - Police
31. City of Menlo Park, Miscellaneous
32. City of Palo Alto, Miscellaneous
33. City of Palo Alto, Safety - Fire
34. City of Palo Alto, Safety - Police
35. City of Placentia, Safety - Fire
36. City of Pleasanton, Safety - Police
37. City of Pomona, Miscellaneous
38. City of Pomona, Safety - Fire
39. City of Pomona, Safety - Police
40. City of Redondo Beach, Miscellaneous
41. City of Richmond, Miscellaneous
42. City of Richmond, Safety - Fire
43. City of Richmond, Safety - Police
44. City of Rolling Hills Estates, Miscellaneous
45. City of Salinas, Safety - Fire
46. City of San Fernando, Safety - Fire
47. City of San Mateo, Miscellaneous
48. City of San Pablo, Safety - Fire
49. City of Santa Clara, Miscellaneous
50. City of Santa Monica, Safety - Other Safety
51. City of Santa Paula, Safety - Fire
52. City of Sausalito, Miscellaneous
53. City of Seal Beach, Safety - Fire
54. City of South Lake Tahoe, Safety - Police
55. City of South Pasadena, Miscellaneous
56. City of South Pasadena, Safety - Fire
57. City of South Pasadena, Safety - Police
58. City of South San Francisco, Miscellaneous
59. City of Sunnyvale, Safety - Fire
60. City of Tustin, Safety - Fire
61. City of Union City, Safety - Fire
62. City of Union City, Safety - Police
63. City of Vallejo, Miscellaneous
64. City of Vernon, Safety - Police
65. City of Vista, Safety - Police
66. City of Watsonville, Miscellaneous
67. City of Westminster, Safety - Fire
68. City of Whittier, Safety - Fire
69. County of Glenn, Miscellaneous
70. County of Inyo, Miscellaneous
71. County of Madera, Miscellaneous
72. County of Monterey, Miscellaneous
73. County of Plumas, Safety - Fire
74. County of Santa Clara, Miscellaneous
75. County of Santa Clara, Safety - County Peace Officer
76. County of Santa Clara, Safety - Fire
77. County of Santa Cruz, Safety - Fire
78. County of Siskiyou, Safety - Fire
79. County of Solano, Safety - Fire
80. East Contra Costa Irrigation District, Miscellaneous
81. Fruitridge Fire Protection District, Miscellaneous
82. Fruitridge Fire Protection District, Safety - Fire
83. Lakeside Fire Protection District, Miscellaneous

Appendix E – List of Contracting Agencies

Level 1 (continued)

84. Los Angeles Community College District, Safety - Police
85. Monterey County Water Resources Agency, Miscellaneous
86. Monterey-Salinas Transit District, Miscellaneous
87. Moulton-Niguel Water District, Miscellaneous
88. Northern California Special Districts Insurance Authority, Miscellaneous
89. Pomona, Calif State Polytechnic University, Associated Students, Inc., Miscellaneous
90. Riverside County Air Pollution Control District, Miscellaneous
91. Riverside County Flood Control and Water Conservation District, Miscellaneous
92. Riverside County Regional Park and Open Space District, Miscellaneous
93. San Luis Obispo Cal Poly Associated Students, Inc., Miscellaneous
94. Town of Hillsborough, Miscellaneous
95. Town of Tiburon, Safety - Police
96. Town of Yountville, Miscellaneous

Level 2

1. Belmont-San Carlos Fire Department, Miscellaneous
2. Brooktrails Township Community Services District, Miscellaneous
3. California Interscholastic Federation, Southern Section, Miscellaneous
4. California Interscholastic Federation, State Office, Miscellaneous
5. Capitol Area Development Authority, Miscellaneous
6. City and County of San Francisco, Safety - Police
7. City of Antioch, Miscellaneous
8. City of Capitola, Miscellaneous
9. City of Capitola, Safety - Fire
10. City of Capitola, Safety - Police
11. City of Corcoran, Miscellaneous
12. City of Corcoran, Safety - Fire
13. City of Corcoran, Safety - Police
14. City of Cotati, Safety - Police
15. City of Crescent City, Miscellaneous
16. City of Crescent City, Safety - Police
17. City of Del Mar, Safety - Other Safety
18. City of Emeryville, Safety - Police
19. City of Eureka, Safety - Fire
20. City of Eureka, Safety - Police
21. City of Glendora, Miscellaneous
22. City of Inglewood, Safety - Police
23. City of La Puente, Miscellaneous
24. City of Lakeport, Miscellaneous
25. City of Lakeport, Safety - Police
26. City of Martinez, Safety - Fire
27. City of Montclair, Miscellaneous
28. City of Montclair, Safety - Fire
29. City of Palm Desert, Miscellaneous
30. City of Palos Verdes Estates, Safety - Fire
31. City of Palos Verdes Estates, Safety - Police
32. City of Patterson, Safety - Fire
33. City of Patterson, Safety - Police
34. City of Santa Barbara, Safety - Fire
35. City of Santa Barbara, Safety - Police
36. City of Sierra Madre, Safety - Police
37. City of Solana Beach, Miscellaneous
38. City of Solana Beach, Safety - Other Safety
39. City of Stanton, Miscellaneous
40. City of Stanton, Safety - Fire
41. City of Stanton, Safety - Police
42. City of Susanville, Safety - Police
43. City of Visalia, Miscellaneous
44. City of Vista, Miscellaneous
45. City of Watsonville, Safety - Fire
46. City of Watsonville, Safety - Police
47. County of Alpine, Miscellaneous
48. County of Alpine, Safety - County Peace Officer
49. County of Alpine, Safety - Fire
50. County of Calaveras, Miscellaneous
51. County of Calaveras, Safety - County Peace Officer
52. County of Calaveras, Safety - Fire
53. Los Angeles County Office of Education, Miscellaneous
54. Main San Gabriel Basin Watermaster, Miscellaneous
55. North Coast Unified Air Quality Management District, Miscellaneous
56. Pacific Fire Protection District, Miscellaneous
57. Public Risk Innovation, Solutions and Management, Miscellaneous
58. Pupil Transportation Cooperative, Miscellaneous
59. Rancho California Water District, Miscellaneous
60. Running Springs Water District, Miscellaneous
61. Running Springs Water District, Safety - Fire
62. San Diego Trolley, Inc., Miscellaneous

Appendix E – List of Contracting Agencies

Level 2 (continued)

63. San Francisco County Transportation Authority, Miscellaneous
64. Sonoma County Library, Miscellaneous
65. Tahoe Transportation District, Miscellaneous

Level 3

1. Access Services Incorporated, Miscellaneous
2. Agoura Hills and Calabasas Community Center, Miscellaneous
3. Alameda Alliance for Health, Miscellaneous
4. Alameda Corridor Transportation Authority, Miscellaneous
5. Alameda County Fire Department, Miscellaneous
6. Alameda County Fire Department, Safety - Fire
7. Alameda County Mosquito Abatement District, Miscellaneous
8. Alameda County Transportation Authority, Miscellaneous
9. American Canyon Fire Protection District, Safety - Fire
10. Apple Valley Fire Protection District, Miscellaneous
11. Apple Valley Fire Protection District, Safety - Fire
12. Arcata Fire Protection District, Miscellaneous
13. Arcata Fire Protection District, Safety - Fire
14. Association of California Water Agencies, Miscellaneous
15. Avila Beach Community Services District, Miscellaneous
16. Baldwin Park Unified School District, Safety - Police
17. Beaumont-Cherry Valley Recreation and Park District, Miscellaneous
18. Belmont-San Carlos Fire Department, Safety - Fire
19. Belvedere-Tiburon Library Agency, Miscellaneous
20. Big Bear City Community Services District, Miscellaneous
21. Bighorn-Desert View Water Agency, Miscellaneous
22. Bodega Bay Fire Protection District, Miscellaneous
23. Bodega Bay Fire Protection District, Safety - Fire
24. Borrego Springs Fire Protection District, Miscellaneous
25. Borrego Water District, Miscellaneous
26. Broadmoor Police Protection District, Miscellaneous
27. Broadmoor Police Protection District, Safety - Police
28. Brooktrails Township Community Services District, Safety - Fire
29. Buena Park Library District, Miscellaneous
30. Butte County Air Quality Management District, Miscellaneous
31. Butte Schools Self-Funded Programs, Miscellaneous
32. California Firefighter's Joint Apprenticeship Committee, Safety - Fire
33. California Intergovernmental Risk Authority, Miscellaneous
34. California Pines Community Services District, Miscellaneous
35. Cambria Community Healthcare District, Miscellaneous
36. Cambria Community Healthcare District, Safety - Fire
37. Cameron Park Community Services District, Miscellaneous
38. Cameron Park Community Services District, Safety - Fire
39. Camrosa Water District, Miscellaneous
40. Casitas Municipal Water District, Miscellaneous
41. Castaic Lake Water Agency, Miscellaneous
42. Castro Valley Sanitary District, Miscellaneous
43. Central Calaveras Fire and Rescue Protection District, Safety - Fire
44. Central Coast Water Authority, Miscellaneous
45. Central Valley Regional Center, Inc., Miscellaneous
46. City and County of San Francisco, Miscellaneous
47. City of Adelanto, Safety - Police
48. City of Agoura Hills, Miscellaneous
49. City of Alameda, Miscellaneous
50. City of Alameda, Safety - Fire
51. City of Alameda, Safety - Police
52. City of Alhambra, Miscellaneous
53. City of Alhambra, Safety - Fire
54. City of Alhambra, Safety - Police
55. City of Arcadia, Miscellaneous
56. City of Arcadia, Safety - Police
57. City of Bell, Safety - Fire
58. City of Bell, Safety - Police
59. City of Belvedere, Miscellaneous
60. City of Belvedere, Safety - Police
61. City of Benicia, Miscellaneous
62. City of Berkeley, Miscellaneous
63. City of Brentwood, Miscellaneous
64. City of Brentwood, Safety - Fire
65. City of Brentwood, Safety - Police
66. City of Brisbane, Miscellaneous
67. City of Brisbane, Safety - Fire
68. City of Brisbane, Safety - Police
69. City of Burlingame, Miscellaneous
70. City of Calabasas, Miscellaneous
71. City of Campbell, Miscellaneous
72. City of Carlsbad, Miscellaneous
73. City of Carlsbad, Safety - Police
74. City of Claremont, Miscellaneous
75. City of Claremont, Safety - Police

Appendix E – List of Contracting Agencies

Level 3 (continued)

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|---|---|
| 76. City of Clayton, Miscellaneous | 120. City of Hermosa Beach, Miscellaneous |
| 77. City of Compton, Miscellaneous | 121. City of Hermosa Beach, Safety - Fire |
| 78. City of Compton, Safety - Police | 122. City of Hermosa Beach, Safety - Police |
| 79. City of Corona, Safety - Police | 123. City of Highland, Miscellaneous |
| 80. City of Costa Mesa, Miscellaneous | 124. City of Inglewood, Miscellaneous |
| 81. City of Costa Mesa, Safety - Fire | 125. City of Inglewood, Safety - Fire |
| 82. City of Costa Mesa, Safety - Police | 126. City of La Mesa, Safety - Fire |
| 83. City of Cypress, Miscellaneous | 127. City of La Mesa, Safety - Police |
| 84. City of Daly City, Miscellaneous | 128. City of La Quinta, Miscellaneous |
| 85. City of Daly City, Safety - Police | 129. City of Laguna Hills, Miscellaneous |
| 86. City of Dana Point, Miscellaneous | 130. City of Laguna Niguel, Miscellaneous |
| 87. City of Del Mar, Miscellaneous | 131. City of Lake Forest, Miscellaneous |
| 88. City of Dinuba, Miscellaneous | 132. City of Lancaster, Miscellaneous |
| 89. City of Dinuba, Safety - Fire | 133. City of Larkspur, Miscellaneous |
| 90. City of Dinuba, Safety - Police | 134. City of Lathrop, Miscellaneous |
| 91. City of Downey, Safety - Fire | 135. City of Lodi, Miscellaneous |
| 92. City of Downey, Safety - Police | 136. City of Lodi, Safety - Fire |
| 93. City of Duarte, Miscellaneous | 137. City of Lodi, Safety - Police |
| 94. City of Dublin, Miscellaneous | 138. City of Lompoc, Miscellaneous |
| 95. City of East Palo Alto, Miscellaneous | 139. City of Los Altos, Miscellaneous |
| 96. City of East Palo Alto, Safety - Police | 140. City of Los Altos, Safety - Police |
| 97. City of El Cajon, Safety - Fire | 141. City of Lynwood, Safety - Fire |
| 98. City of El Cajon, Safety - Police | 142. City of Manhattan Beach, Miscellaneous |
| 99. City of El Centro, Miscellaneous | 143. City of Marysville, Miscellaneous |
| 100. City of Encinitas, Miscellaneous | 144. City of Menlo Park, Safety - Police |
| 101. City of Encinitas, Safety - Fire | 145. City of Mill Valley, Miscellaneous |
| 102. City of Encinitas, Safety - Other Safety | 146. City of Milpitas, Miscellaneous |
| 103. City of Eureka, Miscellaneous | 147. City of Milpitas, Safety - Fire |
| 104. City of Exeter, Safety - Police | 148. City of Mission Viejo, Miscellaneous |
| 105. City of Fortuna, Safety - Police | 149. City of Modesto, Miscellaneous |
| 106. City of Gardena, Miscellaneous | 150. City of Montclair, Safety - Police |
| 107. City of Gardena, Safety - Fire | 151. City of Montebello, Safety - Fire |
| 108. City of Gardena, Safety - Police | 152. City of Montebello, Safety - Police |
| 109. City of Gilroy, Miscellaneous | 153. City of Mountain View, Miscellaneous |
| 110. City of Gridley, Miscellaneous | 154. City of National City, Miscellaneous |
| 111. City of Gridley, Safety - Fire | 155. City of National City, Safety - Fire |
| 112. City of Gridley, Safety - Police | 156. City of National City, Safety - Police |
| 113. City of Half Moon Bay, Miscellaneous | 157. City of Norwalk, Miscellaneous |
| 114. City of Hanford, Miscellaneous | 158. City of Oakdale, Miscellaneous |
| 115. City of Hayward, Safety - Fire | 159. City of Oakdale, Safety - Police |
| 116. City of Hayward, Safety - Police | 160. City of Oakland, Safety - Fire |
| 117. City of Hemet, Safety - Fire | 161. City of Oceanside, Miscellaneous |
| 118. City of Hercules, Miscellaneous | 162. City of Oceanside, Safety - Fire |
| 119. City of Hercules, Safety - Police | 163. City of Oceanside, Safety - Police |

Appendix E – List of Contracting Agencies

Level 3 (continued)

164. City of Oxnard, Safety - Police
165. City of Palmdale, Miscellaneous
166. City of Palos Verdes Estates, Miscellaneous
167. City of Patterson, Miscellaneous
168. City of Petaluma, Miscellaneous
169. City of Pinole, Miscellaneous
170. City of Pinole, Safety - Fire
171. City of Pinole, Safety - Police
172. City of Pleasant Hill, Miscellaneous
173. City of Pleasant Hill, Safety - Police
174. City of Pleasanton, Miscellaneous
175. City of Redwood City, Miscellaneous
176. City of Riverside, Miscellaneous
177. City of Riverside, Safety - Fire
178. City of Riverside, Safety - Police
179. City of Rohnert Park, Miscellaneous
180. City of Rohnert Park, Safety - Fire
181. City of Rohnert Park, Safety - Police
182. City of Roseville, Miscellaneous
183. City of Roseville, Safety - Fire
184. City of San Buenaventura, Safety - Fire
185. City of San Carlos, Safety - Police
186. City of San Dimas, Miscellaneous
187. City of San Joaquin, Miscellaneous
188. City of San Jose, Miscellaneous
189. City of San Luis Obispo, Safety - Fire
190. City of San Marino, Safety - Police
191. City of San Pablo, Miscellaneous
192. City of San Pablo, Safety - Police
193. City of Santa Cruz, Miscellaneous
194. City of Santa Cruz, Safety - Fire
195. City of Santa Cruz, Safety - Police
196. City of Santa Paula, Miscellaneous
197. City of Santa Paula, Safety - Police
198. City of Santee, Miscellaneous
199. City of Saratoga, Miscellaneous
200. City of Seal Beach, Miscellaneous
201. City of Seal Beach, Safety - Other Safety
202. City of Seal Beach, Safety - Police
203. City of Sebastopol, Miscellaneous
204. City of Sebastopol, Safety - Fire
205. City of Sebastopol, Safety - Police
206. City of Sonoma, Miscellaneous
207. City of Sonoma, Safety - Fire
208. City of South San Francisco, Safety - Fire
209. City of South San Francisco, Safety - Police
210. City of Suisun City, Miscellaneous
211. City of Suisun City, Safety - Fire
212. City of Sunnyvale, Miscellaneous
213. City of Sunnyvale, Safety - Police
214. City of Turlock, Miscellaneous
215. City of Tustin, Miscellaneous
216. City of Twentynine Palms, Miscellaneous
217. City of Ukiah, Miscellaneous
218. City of Ukiah, Safety - Fire
219. City of Union City, Miscellaneous
220. City of Upland, Miscellaneous
221. City of Upland, Safety - Fire
222. City of Upland, Safety - Police
223. City of Vernon, Miscellaneous
224. City of Vernon, Safety - Prosecutor
225. City of Victorville, Safety - Police
226. City of West Sacramento, Miscellaneous
227. City of West Sacramento, Safety - Police
228. City of Whittier, Miscellaneous
229. City of Whittier, Safety - Police
230. City of Woodlake, Miscellaneous
231. City of Woodlake, Safety - Police
232. City of Yucaipa, Miscellaneous
233. Coachella Valley Association of Governments,
Miscellaneous
234. Coast Life Support District, Miscellaneous
235. Coast Life Support District, Safety - Fire
236. Coastal Developmental Services Fdn DBA Westside
Regional Center, Miscellaneous
237. Compton Unified School District, Safety - Police
238. Contra Costa County Schools Insurance Group,
Miscellaneous
239. Cooperative Personnel Services, Miscellaneous
240. Cottonwood Fire Protection District, Safety - Fire
241. County of Amador, Safety - County Peace Officer
242. County of Amador, Safety - Fire
243. County of Amador, Safety - Prosecutor
244. County of El Dorado, Miscellaneous
245. County of Inyo, Safety - County Peace Officer
246. County of Lassen, Safety - County Peace Officer
247. County of Plumas, Miscellaneous
248. County of Santa Cruz, Safety - County Peace Officer
249. County of Santa Cruz, Safety - Sheriff
250. County of Yuba, Miscellaneous
251. County of Yuba, Safety - County Peace Officer

Appendix E – List of Contracting Agencies

Level 3 (continued)

252. Crestline Lake Arrowhead Water Agency, Miscellaneous
253. Dairy Council of California, Miscellaneous
254. Del Norte County Library District, Miscellaneous
255. Dougherty Regional Fire Authority, Miscellaneous
256. Dougherty Regional Fire Authority, Safety - Fire
257. El Dorado County Fire Protection District, Miscellaneous
258. El Dorado County Fire Protection District, Safety - Fire
259. El Dorado County Transit Authority, Miscellaneous
260. El Dorado Hills County Water District, Miscellaneous
261. Encina Wastewater Authority, Miscellaneous
262. Encinitas Fire Protection District, Miscellaneous
263. Encinitas Fire Protection District, Safety - Fire
264. Feather River Air Quality Management District, Miscellaneous
265. Fontana Unified School District, Safety - Police
266. Fort Ord Reuse Authority, Miscellaneous
267. Georgetown Fire Protection District, Miscellaneous
268. Georgetown Fire Protection District, Safety - Fire
269. Greater Anaheim Special Education Local Plan Area, Miscellaneous
270. Greater Vallejo Recreation District, Miscellaneous
271. Green Valley County Water District, Miscellaneous
272. Grossmont Healthcare District, Miscellaneous
273. Gualala Community Services District, Miscellaneous
274. Henry Miller Reclamation District No. 2131, Miscellaneous
275. Higgins Area Fire Protection District, Miscellaneous
276. Higgins Area Fire Protection District, Safety - Fire
277. Hilton Creek Community Services District, Miscellaneous
278. Housing Authority of the City of Madera, Miscellaneous
279. Human Rights/Fair Housing Commission of the City and County of Sacramento, Miscellaneous
280. Humboldt Bay Harbor Recreation and Conservation District, Miscellaneous
281. Humboldt No. 1 Fire Protection District of Humboldt County, Safety - Fire
282. Independent Cities Association, Inc., Miscellaneous
283. Indian Wells Valley Water District, Miscellaneous
284. Inland Counties Regional Center, Inc., Miscellaneous
285. Inland Empire Health Plan, Miscellaneous
286. Isla Vista Recreation and Park District, Miscellaneous
287. June Lake Public Utility District, Miscellaneous
288. Kern Health Systems, Miscellaneous
289. Kings Mosquito Abatement District, Miscellaneous
290. Laguna Beach County Water District, Miscellaneous
291. Lake Don Pedro Community Services District, Miscellaneous
292. Leucadia Wastewater District, Miscellaneous
293. Los Angeles County Area 'E' Civil Defense and Disaster Board, Miscellaneous
294. Los Angeles County Sanitation District No. 2, Miscellaneous
295. Los Angeles County West Vector Control District, Miscellaneous
296. Los Angeles Regionalized Insurance Services Authority, Miscellaneous
297. Los Gatos-Saratoga Department of Community Education and Recreation, Miscellaneous
298. Los Osos Community Services District, Miscellaneous
299. Los Osos Community Services District, Safety - Fire
300. Majestic Pines Community Services District, Miscellaneous
301. Management of Emeryville Services Authority, Miscellaneous
302. Meeks Bay Fire Protection District, Miscellaneous
303. Mendocino Transit Authority, Miscellaneous
304. Metropolitan Transportation Commission, Miscellaneous
305. Mid City Development Corporation, Miscellaneous
306. Minter Field Airport District, Miscellaneous
307. Mojave Air and Space Port, Safety - Fire
308. Mojave Water Agency, Miscellaneous
309. Montecito Fire Protection District, Miscellaneous
310. Montecito Fire Protection District, Safety - Fire
311. Monterey County Regional Fire Protection District, Miscellaneous
312. Monterey County Regional Fire Protection District, Safety - Fire
313. Monterey One Water, Miscellaneous
314. Monterey Regional Waste Management District, Miscellaneous
315. Mountains Recreation and Conservation Authority, Miscellaneous
316. Murrieta Fire Protection District, Miscellaneous
317. Nevada Irrigation District, Miscellaneous
318. North Bay Schools Insurance Authority, Miscellaneous
319. North County Fire Protection District of Monterey County, Safety - Fire
320. North Tahoe Fire Protection District, Miscellaneous
321. North Tahoe Fire Protection District, Safety - Fire
322. Northern Sierra Air Quality Management District, Miscellaneous
323. Novato Sanitary District, Miscellaneous
324. Oakdale Rural Fire Protection District, Miscellaneous
325. Oakdale Rural Fire Protection District, Safety - Fire
326. Oakland Unified School District, Safety - Police

Appendix E – List of Contracting Agencies

Level 3 (continued)

327. Ojai Valley Sanitary District, Miscellaneous
328. Ophir Hill Fire Protection District, Miscellaneous
329. Ophir Hill Fire Protection District, Safety - Fire
330. Orange County Health Authority, Miscellaneous
331. Orange County Transportation Authority, Miscellaneous
332. Pajaro Valley Fire Protection Agency, Safety - Fire
333. Peardale Chicago Park Fire Protection District, Safety - Fire
334. Peninsula Fire Protection District, Miscellaneous
335. Penn Valley Fire Protection District, Miscellaneous
336. Personal Assistance Services Council, Miscellaneous
337. Placer Hills Fire Protection District, Miscellaneous
338. Pleasant Hill - Martinez Joint Facilities Agency, Miscellaneous
339. Pomona Valley Transportation Authority, Miscellaneous
340. Public Entity Risk Management Authority, Miscellaneous
341. Public Transportation Services Corporation, Miscellaneous
342. Quincy Community Services District, Miscellaneous
343. Rancho Murieta Community Services District, Miscellaneous
344. Redwood Empire School Insurance Group, Miscellaneous
345. Rescue Fire Protection District, Miscellaneous
346. Rincon Del Diablo Municipal Water District, Safety - Fire
347. Riverbank City Housing Authority, Miscellaneous
348. Riverside County Department of Waste Resources, Miscellaneous
349. Riverside County Transportation Commission, Miscellaneous
350. Roseville Public Cemetery District, Miscellaneous
351. Ross Valley Fire Department, Safety - Fire
352. Rural County Representatives of California, Miscellaneous
353. Russian River Fire Protection District, Miscellaneous
354. Russian River Fire Protection District, Safety - Fire
355. Sacramento Area Council of Governments, Miscellaneous
356. Sacramento Metropolitan Air Quality Management District, Miscellaneous
357. Sacramento Public Library Authority, Miscellaneous
358. Sacramento Regional Fire/EMS Communications Center, Miscellaneous
359. Sacramento Transportation Authority, Miscellaneous
360. Sacramento-Yolo Mosquito and Vector Control District, Miscellaneous
361. Salida Fire Protection District, Miscellaneous
362. Salida Fire Protection District, Safety - Fire
363. Samoa Peninsula Fire Protection District, Safety - Fire
364. San Andreas Regional Center, Inc., Miscellaneous
365. San Diego County Law Library, Miscellaneous
366. San Diego Rural Fire Protection District, Miscellaneous
367. San Diego Rural Fire Protection District, Safety - Fire
368. San Dieguito Water District, Miscellaneous
369. San Francisco Health Authority, Miscellaneous
370. San Joaquin Delta Community College District, Safety - Police
371. San Luis Obispo Regional Transit Authority, Miscellaneous
372. San Mateo County Harbor District, Miscellaneous
373. San Mateo County In-Home Supportive Services Public Authority, Miscellaneous
374. Santa Barbara Regional Health Authority, Miscellaneous
375. Santa Clara County Central Fire Protection District, Miscellaneous
376. Santa Clara County Central Fire Protection District, Safety - Fire
377. Santa Clara County Health Authority, Miscellaneous
378. Santa Clarita Valley School Food Services Agency, Miscellaneous
379. Santa Cruz Metropolitan Transit District, Miscellaneous
380. Santa Cruz Regional 9-1-1, Miscellaneous
381. Santa Fe Irrigation District, Miscellaneous
382. Santa Maria Public Airport District, Miscellaneous
383. School Risk And Insurance Management Group, Miscellaneous
384. Schools Excess Liability Fund, Miscellaneous
385. Scotts Valley Water District, Miscellaneous
386. Sewer Authority Mid-Coastside, Miscellaneous
387. Shasta Lake Fire Protection District, Safety - Fire
388. Solano Cemetery District, Miscellaneous
389. Solano County Water Agency, Miscellaneous
390. Solano Transportation Authority, Miscellaneous
391. Southern California Regional Rail Authority, Miscellaneous
392. Stockton Unified School District, Safety - Police
393. Sunnyslope County Water District, Miscellaneous
394. Sweetwater Springs Water District, Miscellaneous
395. Tahoe-Truckee Sanitation Agency, Miscellaneous
396. Tehama County Mosquito Abatement District, Miscellaneous
397. Town of Atherton, Miscellaneous
398. Town of Atherton, Safety - Police
399. Town of Fairfax, Miscellaneous
400. Town of Fairfax, Safety - Police
401. Town of Loomis, Miscellaneous
402. Town of Truckee, Miscellaneous
403. Town of Yucca Valley, Miscellaneous
404. Transportation Agency for Monterey County, Miscellaneous

Appendix E – List of Contracting Agencies

Level 3 (continued)

405. Tri-City Mental Health Center, Miscellaneous
406. Tri-Counties Association for the Developmentally Disabled, Miscellaneous
407. Tuolumne Utilities District, Miscellaneous
408. Valley Mountain Regional Center, Inc., Miscellaneous
409. Valley-Wide Recreation and Park District, Miscellaneous
410. Ventura County Schools Business Services Authority, Miscellaneous
411. Victor Valley Wastewater Reclamation Authority, Miscellaneous
412. Water Facilities Authority, Miscellaneous
413. Weaverville Community Services District, Miscellaneous
414. West Almanor Community Services District, Safety - Fire
415. West Cities Communication Center, Miscellaneous
416. West End Communications Authority, Miscellaneous
417. West Valley-Mission Community College District, Safety - Police
418. Westlands Water District, Miscellaneous
419. Yolo County Public Agency Risk Management Insurance Authority, Miscellaneous
420. Yolo County Transportation District, Miscellaneous
421. Yuba County Water Agency, Miscellaneous
422. Yuba Sutter Transit Authority, Miscellaneous

Level 4

1. Academic Senate for California Community Colleges, Miscellaneous
2. Alameda County Congestion Management Agency, Miscellaneous
3. Alameda County Schools Insurance Group, Miscellaneous
4. Alameda County Transportation Commission, Miscellaneous
5. Alameda County Transportation Improvement Authority, Miscellaneous
6. Alameda County Waste Management Authority, Miscellaneous
7. Alameda County Water District, Miscellaneous
8. Albany Municipal Services Joint Powers Authority, Miscellaneous
9. Alliance of Schools for Cooperative Insurance Programs, Miscellaneous
10. Alpine Fire Protection District, Miscellaneous
11. Alpine Fire Protection District, Safety - Fire
12. Amador County Transportation Commission, Miscellaneous
13. Aptos/La Selva Fire Protection Agency, Safety - Fire
14. Association of California Water Agencies - Joint Powers Insurance Authority, Miscellaneous
15. Bay Area Water Supply and Conservation Agency, Miscellaneous
16. Belmont Fire Protection District, Safety - Fire
17. Berkeley Housing Authority, Miscellaneous
18. Big Bear Area Regional Wastewater Agency, Miscellaneous
19. Big Bear City Airport District, Miscellaneous
20. Black Gold Cooperative Library System, Miscellaneous
21. Blue Lake Fire Protection District, Safety - Fire
22. Bolinas Community Public Utility District, Miscellaneous
23. Bonita-Sunnyside Fire Protection District, Safety - Fire
24. Borrego Springs Fire Protection District, Safety - Fire
25. Boulder Creek Fire Protection District, Safety - Fire
26. Butte County Association of Governments, Miscellaneous
27. Butte County Fair Association, Miscellaneous
28. Butte County In-Home Supportive Services Public Authority, Miscellaneous
29. Butte Local Agency Formation Commission, Miscellaneous
30. Butte-Glenn Community College District, Safety - Police
31. Calaveras Council of Governments, Miscellaneous
32. California Firefighter's Joint Apprenticeship Committee, Miscellaneous
33. California Interscholastic Federation, Northern Section, Miscellaneous
34. California Joint Powers Risk Management Authority, Miscellaneous
35. California Pines Community Services District, Safety - Fire
36. California Redevelopment Association Foundation, Miscellaneous
37. Carmel Regional Fire Ambulance Authority, Safety - Fire
38. Central Calaveras Fire and Rescue Protection District, Miscellaneous
39. Central Contra Costa Solid Waste Authority, Miscellaneous
40. Central County Fire Department, Miscellaneous
41. Central County Fire Department, Safety - Fire
42. Central Marin Fire Authority, Miscellaneous
43. Central Marin Fire Authority, Safety - Fire
44. Central Marin Police Authority, Miscellaneous
45. Central Marin Police Authority, Safety - Police
46. Central Marin Sanitation Agency, Miscellaneous
47. Children and Families Commission of San Luis Obispo County, Miscellaneous
48. Chino Basin Watermaster, Miscellaneous
49. Chino Valley Independent Fire District, Miscellaneous

Appendix E – List of Contracting Agencies

Level 4 (continued)

50. Chino Valley Independent Fire District, Safety - Fire
51. City of Adelanto, Miscellaneous
52. City of Albany, Safety - Fire
53. City of Albany, Safety - Police
54. City of Anaheim, Miscellaneous
55. City of Anaheim, Safety - Fire
56. City of Anaheim, Safety - Police
57. City of Arcadia, Safety - Fire
58. City of Atascadero, Safety - Fire
59. City of Atascadero, Safety - Police
60. City of Auburn, Safety - Fire
61. City of Auburn, Safety - Police
62. City of Azusa, Miscellaneous
63. City of Azusa, Safety - Police
64. City of Bakersfield, Miscellaneous
65. City of Bakersfield, Safety - Fire
66. City of Bakersfield, Safety - Police
67. City of Barstow, Miscellaneous
68. City of Barstow, Safety - Police
69. City of Beaumont, Safety - Police
70. City of Bell Gardens, Miscellaneous
71. City of Bell Gardens, Safety - Police
72. City of Belmont, Miscellaneous
73. City of Belmont, Safety - Police
74. City of Benicia, Safety - Fire
75. City of Benicia, Safety - Police
76. City of Berkeley, Safety - Police
77. City of Beverly Hills, Miscellaneous
78. City of Beverly Hills, Safety - Fire
79. City of Beverly Hills, Safety - Police
80. City of Bishop, Safety - Fire
81. City of Brea, Miscellaneous
82. City of Brea, Safety - Fire
83. City of Brea, Safety - Police
84. City of Buena Park, Miscellaneous
85. City of Buena Park, Safety - Fire
86. City of Buena Park, Safety - Police
87. City of Burbank, Miscellaneous
88. City of Burbank, Safety - Fire
89. City of Burbank, Safety - Police
90. City of Burlingame, Safety - Police
91. City of California City, Miscellaneous
92. City of California City, Safety - Fire
93. City of California City, Safety - Police
94. City of Camarillo, Miscellaneous
95. City of Campbell, Safety - Police
96. City of Carlsbad, Safety - Fire
97. City of Carmel-By-The-Sea, Miscellaneous
98. City of Carmel-By-The-Sea, Safety - Fire
99. City of Carmel-By-The-Sea, Safety - Police
100. City of Carson, Miscellaneous
101. City of Cathedral City, Miscellaneous
102. City of Cathedral City, Safety - Fire
103. City of Cathedral City, Safety - Police
104. City of Cerritos, Miscellaneous
105. City of Chico, Miscellaneous
106. City of Chico, Safety - Fire
107. City of Chico, Safety - Police
108. City of Chino, Miscellaneous
109. City of Chino, Safety - Police
110. City of Chowchilla, Miscellaneous
111. City of Chowchilla, Safety - Fire
112. City of Chowchilla, Safety - Police
113. City of Chula Vista, Miscellaneous
114. City of Chula Vista, Safety - Fire
115. City of Chula Vista, Safety - Police
116. City of Citrus Heights, Miscellaneous
117. City of Citrus Heights, Safety - Police
118. City of Clayton, Safety - Police
119. City of Cloverdale, Miscellaneous
120. City of Cloverdale, Safety - Fire
121. City of Cloverdale, Safety - Police
122. City of Clovis, Miscellaneous
123. City of Clovis, Safety - Fire
124. City of Clovis, Safety - Police
125. City of Colton, Miscellaneous
126. City of Colton, Safety - Fire
127. City of Colton, Safety - Police
128. City of Corona, Miscellaneous
129. City of Corona, Safety - Fire
130. City of Coronado, Safety - Fire
131. City of Coronado, Safety - Police
132. City of Cotati, Miscellaneous
133. City of Covina, Miscellaneous
134. City of Covina, Safety - Fire
135. City of Covina, Safety - Police
136. City of Culver City, Safety - Fire
137. City of Culver City, Safety - Police
138. City of Cupertino, Miscellaneous
139. City of Cypress, Safety - Police

Appendix E – List of Contracting Agencies

Level 4 (continued)

140. City of Daly City, Safety - Fire
141. City of Davis, Miscellaneous
142. City of Davis, Safety - Fire
143. City of Davis, Safety - Police
144. City of Diamond Bar, Miscellaneous
145. City of Dixon, Safety - Fire
146. City of Dixon, Safety - Police
147. City of Downey, Miscellaneous
148. City of El Cajon, Miscellaneous
149. City of El Centro, Safety - Fire
150. City of El Centro, Safety - Police
151. City of El Cerrito, Safety - Fire
152. City of El Cerrito, Safety - Police
153. City of El Monte, Miscellaneous
154. City of El Monte, Safety - Fire
155. City of El Monte, Safety - Police
156. City of El Segundo, Safety - Fire
157. City of El Segundo, Safety - Police
158. City of Elk Grove, Miscellaneous
159. City of Elk Grove, Safety - Police
160. City of Escondido, Miscellaneous
161. City of Escondido, Safety - Fire
162. City of Escondido, Safety - Police
163. City of Exeter, Miscellaneous
164. City of Fairfield, Miscellaneous
165. City of Fairfield, Safety - Fire
166. City of Fairfield, Safety - Police
167. City of Fontana, Miscellaneous
168. City of Fontana, Safety - Police
169. City of Foster City, Miscellaneous
170. City of Foster City, Safety - Fire
171. City of Foster City, Safety - Police
172. City of Fountain Valley, Miscellaneous
173. City of Fremont, Miscellaneous
174. City of Fremont, Safety - Fire
175. City of Fremont, Safety - Police
176. City of Fullerton, Miscellaneous
177. City of Fullerton, Safety - Fire
178. City of Fullerton, Safety - Police
179. City of Gilroy, Safety - Fire
180. City of Gilroy, Safety - Police
181. City of Glendale, Miscellaneous
182. City of Glendale, Safety - Fire
183. City of Glendale, Safety - Police
184. City of Glendora, Safety - Police
185. City of Goleta, Miscellaneous
186. City of Grand Terrace, Miscellaneous
187. City of Half Moon Bay, Safety - Police
188. City of Hanford, Safety - Police
189. City of Hayward, Miscellaneous
190. City of Healdsburg, Miscellaneous
191. City of Healdsburg, Safety - Fire
192. City of Healdsburg, Safety - Police
193. City of Hemet, Miscellaneous
194. City of Hesperia, Miscellaneous
195. City of Hollister, Miscellaneous
196. City of Hollister, Safety - Fire
197. City of Hollister, Safety - Police
198. City of Hughson, Miscellaneous
199. City of Huntington Beach, Miscellaneous
200. City of Huntington Beach, Safety - Fire
201. City of Huntington Beach, Safety - Other Safety
202. City of Huntington Beach, Safety - Police
203. City of Huntington Park, Miscellaneous
204. City of Huntington Park, Safety - Fire
205. City of Huntington Park, Safety - Police
206. City of Industry, Miscellaneous
207. City of Irvine, Miscellaneous
208. City of Irvine, Safety - Police
209. City of Irwindale, Miscellaneous
210. City of Irwindale, Safety - Fire
211. City of Irwindale, Safety - Police
212. City of La Canada Flintridge, Miscellaneous
213. City of La Habra, Miscellaneous
214. City of La Habra, Safety - Fire
215. City of La Habra, Safety - Police
216. City of La Mirada, Miscellaneous
217. City of La Palma, Miscellaneous
218. City of La Palma, Safety - Police
219. City of La Verne, Miscellaneous
220. City of La Verne, Safety - Fire
221. City of La Verne, Safety - Police
222. City of Laguna Beach, Miscellaneous
223. City of Laguna Beach, Safety - Fire
224. City of Laguna Beach, Safety - Other Safety
225. City of Laguna Beach, Safety - Police
226. City of Larkspur, Safety - Fire
227. City of Lathrop, Safety - Police
228. City of Lawndale, Miscellaneous
229. City of Lemon Grove, Miscellaneous

Appendix E – List of Contracting Agencies

Level 4 (continued)

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|---|---|
| 230. City of Lemon Grove, Safety - Fire | 275. City of Newport Beach, Miscellaneous |
| 231. City of Livermore, Miscellaneous | 276. City of Newport Beach, Safety - Fire |
| 232. City of Livermore, Safety - Police | 277. City of Newport Beach, Safety - Other Safety |
| 233. City of Loma Linda, Safety - Fire | 278. City of Newport Beach, Safety - Police |
| 234. City of Lomita, Miscellaneous | 279. City of Norco, Miscellaneous |
| 235. City of Lompoc, Safety - Fire | 280. City of Norco, Safety - Fire |
| 236. City of Lompoc, Safety - Police | 281. City of Novato, Miscellaneous |
| 237. City of Long Beach, Safety - Fire | 282. City of Novato, Safety - Police |
| 238. City of Long Beach, Safety - Police | 283. City of Oakdale, Safety - Fire |
| 239. City of Los Alamitos, Miscellaneous | 284. City of Oakley, Miscellaneous |
| 240. City of Los Alamitos, Safety - Police | 285. City of Oakley, Safety - Police |
| 241. City of Lynwood, Miscellaneous | 286. City of Ontario, Safety - Fire |
| 242. City of Manhattan Beach, Safety - Fire | 287. City of Ontario, Safety - Police |
| 243. City of Manteca, Miscellaneous | 288. City of Orange, Miscellaneous |
| 244. City of Manteca, Safety - Fire | 289. City of Orange, Safety - Fire |
| 245. City of Manteca, Safety - Police | 290. City of Orange, Safety - Police |
| 246. City of Marina, Miscellaneous | 291. City of Oroville, Miscellaneous |
| 247. City of Marina, Safety - Fire | 292. City of Oroville, Safety - Fire |
| 248. City of Marina, Safety - Police | 293. City of Oroville, Safety - Police |
| 249. City of Martinez, Safety - Police | 294. City of Oxnard, Miscellaneous |
| 250. City of Marysville, Safety - Fire | 295. City of Oxnard, Safety - Fire |
| 251. City of Marysville, Safety - Police | 296. City of Pacific Grove, Miscellaneous |
| 252. City of Menifee, Miscellaneous | 297. City of Pacific Grove, Safety - Fire |
| 253. City of Menifee, Safety - Police | 298. City of Pacific Grove, Safety - Police |
| 254. City of Millbrae, Miscellaneous | 299. City of Pacifica, Miscellaneous |
| 255. City of Milpitas, Safety - Police | 300. City of Pacifica, Safety - Fire |
| 256. City of Monrovia, Miscellaneous | 301. City of Pacifica, Safety - Police |
| 257. City of Monrovia, Safety - Fire | 302. City of Palm Springs, Miscellaneous |
| 258. City of Monrovia, Safety - Police | 303. City of Palm Springs, Safety - Fire |
| 259. City of Monterey, Miscellaneous | 304. City of Palm Springs, Safety - Police |
| 260. City of Monterey Park, Miscellaneous | 305. City of Paramount, Miscellaneous |
| 261. City of Monterey Park, Safety - Fire | 306. City of Pasadena, Miscellaneous |
| 262. City of Monterey Park, Safety - Police | 307. City of Pasadena, Safety - Fire |
| 263. City of Moorpark, Miscellaneous | 308. City of Pasadena, Safety - Police |
| 264. City of Moreno Valley, Miscellaneous | 309. City of Petaluma, Safety - Fire |
| 265. City of Morgan Hill, Miscellaneous | 310. City of Petaluma, Safety - Police |
| 266. City of Morgan Hill, Safety - Police | 311. City of Pico Rivera, Miscellaneous |
| 267. City of Morro Bay, Miscellaneous | 312. City of Piedmont, Safety - Fire |
| 268. City of Morro Bay, Safety - Fire | 313. City of Pittsburg, Safety - Police |
| 269. City of Morro Bay, Safety - Police | 314. City of Placentia, Miscellaneous |
| 270. City of Mountain View, Safety - Fire | 315. City of Placentia, Safety - Police |
| 271. City of Mountain View, Safety - Police | 316. City of Pleasanton, Safety - Fire |
| 272. City of Murrieta, Miscellaneous | 317. City of Porterville, Miscellaneous |
| 273. City of Murrieta, Safety - Police | 318. City of Porterville, Safety - Fire |
| 274. City of Napa, Safety - Police | 319. City of Porterville, Safety - Police |

Appendix E – List of Contracting Agencies

Level 4 (continued)

- 320. City of Rancho Cucamonga, Miscellaneous
- 321. City of Rancho Mirage, Miscellaneous
- 322. City of Rancho Palos Verdes, Miscellaneous
- 323. City of Redding, Safety - Fire
- 324. City of Redding, Safety - Police
- 325. City of Redondo Beach, Safety - Fire
- 326. City of Redondo Beach, Safety - Police
- 327. City of Redwood City, Safety - Fire
- 328. City of Redwood City, Safety - Police
- 329. City of Rialto, Miscellaneous
- 330. City of Rialto, Safety - Fire
- 331. City of Rocklin, Miscellaneous
- 332. City of Rocklin, Safety - Fire
- 333. City of Rocklin, Safety - Police
- 334. City of Roseville, Safety - Police
- 335. City of San Bernardino, Miscellaneous
- 336. City of San Bernardino, Safety - Fire
- 337. City of San Bruno, Miscellaneous
- 338. City of San Bruno, Safety - Fire
- 339. City of San Bruno, Safety - Police
- 340. City of San Buenaventura, Miscellaneous
- 341. City of San Buenaventura, Safety - Police
- 342. City of San Clemente, Miscellaneous
- 343. City of San Fernando, Miscellaneous
- 344. City of San Fernando, Safety - Police
- 345. City of San Gabriel, Miscellaneous
- 346. City of San Gabriel, Safety - Fire
- 347. City of San Gabriel, Safety - Police
- 348. City of San Jacinto, Miscellaneous
- 349. City of San Jacinto, Safety - Fire
- 350. City of San Jacinto, Safety - Police
- 351. City of San Leandro, Safety - Police
- 352. City of San Luis Obispo, Miscellaneous
- 353. City of San Luis Obispo, Safety - Police
- 354. City of San Marino, Miscellaneous
- 355. City of San Marino, Safety - Fire
- 356. City of San Mateo, Safety - Fire
- 357. City of San Mateo, Safety - Police
- 358. City of San Ramon, Miscellaneous
- 359. City of San Ramon, Safety - Police
- 360. City of Sand City, Miscellaneous
- 361. City of Sand City, Safety - Police
- 362. City of Santa Ana, Miscellaneous
- 363. City of Santa Ana, Safety - Fire
- 364. City of Santa Ana, Safety - Police
- 365. City of Santa Barbara, Miscellaneous
- 366. City of Santa Clara, Safety - Fire
- 367. City of Santa Clara, Safety - Police
- 368. City of Santa Fe Springs, Miscellaneous
- 369. City of Santa Fe Springs, Safety - Fire
- 370. City of Santa Maria, Miscellaneous
- 371. City of Santa Maria, Safety - Fire
- 372. City of Santa Maria, Safety - Police
- 373. City of Santa Monica, Miscellaneous
- 374. City of Santa Monica, Safety - Fire
- 375. City of Santa Monica, Safety - Police
- 376. City of Santa Rosa, Miscellaneous
- 377. City of Santa Rosa, Safety - Fire
- 378. City of Santa Rosa, Safety - Police
- 379. City of Sausalito, Safety - Fire
- 380. City of Sausalito, Safety - Police
- 381. City of Seaside, Miscellaneous
- 382. City of Seaside, Safety - Fire
- 383. City of Seaside, Safety - Police
- 384. City of Sierra Madre, Miscellaneous
- 385. City of Sierra Madre, Safety - Fire
- 386. City of Signal Hill, Safety - Fire
- 387. City of Signal Hill, Safety - Police
- 388. City of Simi Valley, Miscellaneous
- 389. City of Simi Valley, Safety - Police
- 390. City of Sonoma, Safety - Police
- 391. City of South Gate, Miscellaneous
- 392. City of Stockton, Miscellaneous
- 393. City of Stockton, Safety - Fire
- 394. City of Stockton, Safety - Police
- 395. City of Suisun City, Safety - Police
- 396. City of Temecula, Miscellaneous
- 397. City of Temple City, Miscellaneous
- 398. City of Thousand Oaks, Miscellaneous
- 399. City of Torrance, Safety - Fire
- 400. City of Torrance, Safety - Police
- 401. City of Tracy, Safety - Fire
- 402. City of Tracy, Safety - Police
- 403. City of Tulare, Miscellaneous
- 404. City of Tulare, Safety - Fire
- 405. City of Tulare, Safety - Police
- 406. City of Turlock, Safety - Fire
- 407. City of Turlock, Safety - Police
- 408. City of Tustin, Safety - Police
- 409. City of Ukiah, Safety - Police

Appendix E – List of Contracting Agencies

Level 4 (continued)

410. City of Vacaville, Miscellaneous
411. City of Vacaville, Safety - Fire
412. City of Vacaville, Safety - Police
413. City of Vallejo, Safety - Fire
414. City of Vallejo, Safety - Police
415. City of Vernon, Safety - Fire
416. City of Victorville, Miscellaneous
417. City of Victorville, Safety - Fire
418. City of Villa Park, Miscellaneous
419. City of Visalia, Safety - Fire
420. City of Visalia, Safety - Police
421. City of Vista, Safety - Fire
422. City of Walnut, Miscellaneous
423. City of Walnut Creek, Miscellaneous
424. City of Walnut Creek, Safety - Police
425. City of West Covina, Miscellaneous
426. City of West Covina, Safety - Fire
427. City of West Covina, Safety - Police
428. City of West Hollywood, Miscellaneous
429. City of West Sacramento, Safety - Fire
430. City of Westminster, Miscellaneous
431. City of Westminster, Safety - Police
432. City of Wildomar, Miscellaneous
433. City of Woodland, Miscellaneous
434. City of Woodland, Safety - Fire
435. City of Woodland, Safety - Police
436. City of Yorba Linda, Miscellaneous
437. City/County Association of Governments of San Mateo County, Miscellaneous
438. Cloverdale Fire Protection District, Miscellaneous
439. Cloverdale Fire Protection District, Safety - Fire
440. Coastside Fire Protection District, Miscellaneous
441. Coastside Fire Protection District, Safety - Fire
442. Colusa County One-Stop Partnership, Miscellaneous
443. Conejo Recreation and Park District, Miscellaneous
444. Contra Costa Transportation Authority, Miscellaneous
445. Costa Mesa Sanitary District, Miscellaneous
446. Cosumnes Community Services District, Miscellaneous
447. Cosumnes Community Services District, Safety - Fire
448. County of El Dorado, Safety - County Peace Officer
449. County of Humboldt, Miscellaneous
450. County of Humboldt, Safety - County Peace Officer
451. County of Humboldt, Safety - Fire
452. County of Kings, Safety - County Peace Officer
453. County of Kings, Safety - Fire
454. County of Mono, Miscellaneous
455. County of Mono, Safety - County Peace Officer
456. County of Mono, Safety - Fire
457. County of Mono, Safety - Sheriff
458. County of Monterey, Safety - County Peace Officer
459. County of Monterey, Safety - Fire
460. County of Napa, Miscellaneous
461. County of Napa, Safety - County Peace Officer
462. County of Plumas, Safety - County Peace Officer
463. County of Plumas, Safety - Sheriff
464. County of Shasta, Safety - Sheriff
465. County of Siskiyou, Safety - County Peace Officer
466. County of Solano, Safety - County Peace Officer
467. County of Solano, Safety - Sheriff
468. Crestline Village Water District, Miscellaneous
469. Crockett - Valona Sanitary District, Miscellaneous
470. Crockett Community Services District, Miscellaneous
471. Cucamonga Valley Water District, Miscellaneous
472. Del Puerto Water District, Miscellaneous
473. East County Fire Protection District, Miscellaneous
474. East County Fire Protection District, Safety - Fire
475. East Valley Water District, Miscellaneous
476. Eastern Municipal Water District, Miscellaneous
477. Eastern Sierra Transit Authority, Miscellaneous
478. El Dorado County Transportation Commission, Miscellaneous
479. El Dorado County Water Agency, Miscellaneous
480. El Dorado Hills County Water District, Safety - Fire
481. El Dorado Local Agency Formation Commission, Miscellaneous
482. Esparto Fire Protection District, Miscellaneous
483. Esparto Fire Protection District, Safety - Fire
484. Estero Municipal Improvement District, Miscellaneous
485. Estero Municipal Improvement District, Safety - Fire
486. Estero Municipal Improvement District, Safety - Police
487. Exeter District Ambulance, Miscellaneous
488. Far Northern Coordinating Council on Developmental Disabilities, Miscellaneous
489. Florin Resource Conservation District Elk Grove Water District, Miscellaneous
490. Foothill-De Anza Community College District, Safety - Police
491. Georgetown Divide Resource Conservation District, Miscellaneous
492. Glen Ellen Fire Protection District, Safety - Fire
493. Glendale Community College District, Safety - Police

Appendix E – List of Contracting Agencies

Level 4 (continued)

494. Gold Coast Transit, Miscellaneous
495. Gold Ridge Fire Protection District, Miscellaneous
496. Graton Community Services District, Miscellaneous
497. Graton Fire Protection District, Safety - Fire
498. Hacienda La Puente Unified School District, Safety - Police
499. Hamilton Branch Fire Protection District, Safety - Fire
500. Health Plan of San Joaquin, Miscellaneous
501. Heartland Communications Facility Authority, Miscellaneous
502. Helendale Community Services District, Miscellaneous
503. Heritage Ranch Community Services District, Miscellaneous
504. Herlong Public Utility District, Miscellaneous
505. Hesperia Fire Protection District, Miscellaneous
506. Hesperia Fire Protection District, Safety - Fire
507. Hesperia Water District, Miscellaneous
508. Hidden Valley Lake Community Services District, Miscellaneous
509. Hopland Public Utility District, Miscellaneous
510. Housing Authority of the City of Alameda, Miscellaneous
511. Housing Authority of the City of San Buenaventura, Miscellaneous
512. Hub Cities Consortium, Miscellaneous
513. Humboldt Bay Fire Joint Powers Authority, Miscellaneous
514. Humboldt Bay Fire Joint Powers Authority, Safety - Fire
515. Humboldt Transit Authority, Miscellaneous
516. Humboldt Waste Management Authority, Miscellaneous
517. Idyllwild Fire Protection District, Safety - Fire
518. Intelcom Intelligent Telecommunications, Miscellaneous
519. Intergovernmental Training and Development Center, Miscellaneous
520. Ironhouse Sanitary District, Miscellaneous
521. Irvine Ranch Water District, Miscellaneous
522. Kaweah Delta Water Conservation District, Miscellaneous
523. Kensington Community Services District, Safety - Police
524. Kentfield Fire Protection District, Miscellaneous
525. Kentfield Fire Protection District, Safety - Fire
526. Kern-Tulare Water District, Miscellaneous
527. Kings County Area Public Transit Agency, Miscellaneous
528. Kings County Association of Governments, Miscellaneous
529. Kings County In-Home Supportive Services Public Authority, Miscellaneous
530. Lake County Fire Protection District, Miscellaneous
531. Lake County Fire Protection District, Safety - Fire
532. Lake Shastina Community Services District, Miscellaneous
533. Lake Shastina Community Services District, Safety - Fire
534. Lake Shastina Community Services District, Safety - Police
535. Lake Valley Fire Protection District, Miscellaneous
536. Lake Valley Fire Protection District, Safety - Fire
537. Lakeport County Fire Protection District, Miscellaneous
538. Lakeport County Fire Protection District, Safety - Fire
539. Lakeside Fire Protection District, Safety - Fire
540. Lassen County Waterworks District No. 1, Miscellaneous
541. Linda Fire Protection District, Miscellaneous
542. Linda Fire Protection District, Safety - Fire
543. Livermore/Amador Valley Transit Authority, Miscellaneous
544. Local Agency Formation Commission of Monterey County, Miscellaneous
545. Local Agency Formation Commission of Solano County, Miscellaneous
546. Local Government Services Authority, a Joint Powers Authority, Miscellaneous
547. Los Angeles County Development Authority, Miscellaneous
548. Los Angeles Unified School District, Safety - Police
549. Mammoth Lakes Fire District, Safety - Fire
550. Mammoth Lakes Mosquito Abatement District, Miscellaneous
551. March Joint Powers Authority, Miscellaneous
552. Marin Community College District, Safety - Police
553. Mendocino County Russian River Flood Control & Water Conservation Improvement Dt, Miscellaneous
554. Metropolitan Water District of Southern California, Miscellaneous
555. Midway Heights County Water District, Miscellaneous
556. Monterey Bay Unified Air Pollution Control District, Miscellaneous
557. Monterey Peninsula Regional Park District, Miscellaneous
558. Monterey Peninsula Water Management District, Miscellaneous
559. Municipal Pooling Authority, Miscellaneous
560. Municipal Water District of Orange County, Miscellaneous
561. Murrieta Fire Protection District, Safety - Fire
562. Murrieta Valley Cemetery District, Miscellaneous
563. Napa County Mosquito Abatement District, Miscellaneous
564. Napa County Resource Conservation District, Miscellaneous
565. Napa Sanitation District, Miscellaneous
566. Napa Valley Transportation Authority, Miscellaneous
567. Nevada County Consolidated Fire District, Miscellaneous
568. Nevada County Consolidated Fire District, Safety - Fire
569. Nipomo Community Services District, Miscellaneous
570. North Bay Regional Center, Miscellaneous
571. North Coast Railroad Authority, Miscellaneous

Appendix E – List of Contracting Agencies

Level 4 (continued)

572. North County Dispatch Joint Powers Authority, Miscellaneous
573. North County Fire Protection District of San Diego County, Miscellaneous
574. North County Fire Protection District of San Diego County, Safety - Fire
575. Northshore Fire Protection District, Miscellaneous
576. Northshore Fire Protection District, Safety - Fire
577. Orange County Vector Control District, Miscellaneous
578. Pasadena Unified School District, Safety - Police
579. Pebble Beach Community Services District, Miscellaneous
580. Peninsula Traffic Congestion Relief Alliance, Miscellaneous
581. Penn Valley Fire Protection District, Safety - Fire
582. Phelan Pinon Hills Community Services District, Miscellaneous
583. Pixley Irrigation District, Miscellaneous
584. Placer Mosquito and Vector Control District, Miscellaneous
585. Plumas Eureka Community Services District, Miscellaneous
586. Point Montara Fire Protection District, Safety - Fire
587. Rancho Cucamonga Fire Protection District, Miscellaneous
588. Rancho Cucamonga Fire Protection District, Safety - Fire
589. Rancho Santa Fe Fire Protection District, Miscellaneous
590. Rancho Santa Fe Fire Protection District, Safety - Fire
591. Redwood Empire Municipal Insurance Fund, Miscellaneous
592. Regional Center of Orange County, Miscellaneous
593. Rescue Fire Protection District, Safety - Fire
594. Rincon Del Diablo Municipal Water District, Miscellaneous
595. Rincon Valley Fire Protection District, Miscellaneous
596. Rincon Valley Fire Protection District, Safety - Fire
597. Rose Bowl Operating Company, Miscellaneous
598. Rosedale-Rio Bravo Water Storage District, Miscellaneous
599. Sacramento Groundwater Authority, Miscellaneous
600. Sacramento Metropolitan Fire District, Miscellaneous
601. Sacramento Metropolitan Fire District, Safety - Fire
602. Sacramento Suburban Water District, Miscellaneous
603. Salinas Valley Solid Waste Authority, Miscellaneous
604. San Bernardino City Unified School District, Safety - Police
605. San Diego Association of Governments, Miscellaneous
606. San Diego Pooled Insurance Program Authority, Miscellaneous
607. San Diego Unified School District, Safety - Police
608. San Francisco Bay Area Rapid Transit District, Safety - Police
609. San Francisco Bay Area Water Emergency Transportation Authority, Miscellaneous
610. San Gabriel Valley Council of Governments, Miscellaneous
611. San Joaquin County IHSS Public Authority, Miscellaneous
612. San Luis Obispo Council of Governments, Miscellaneous
613. San Mateo Consolidated Fire Department, Miscellaneous
614. San Mateo Consolidated Fire Department, Safety - Fire
615. San Miguel Community Services District, Miscellaneous
616. San Miguel Community Services District, Safety - Fire
617. San Miguel Consolidated Fire Protection District, Miscellaneous
618. San Miguel Consolidated Fire Protection District, Safety - Fire
619. San Simeon Community Services District, Miscellaneous
620. Santa Ana Unified School District, Safety - Police
621. Santa Clara Valley Water District, Miscellaneous
622. Santa Clarita Valley Water Agency, Miscellaneous
623. Santa Cruz County Regional Transportation Commission, Miscellaneous
624. Santa Margarita Water District, Miscellaneous
625. Santos Manuel Student Union of California State University, San Bernardino, Miscellaneous
626. Schell Vista Fire Protection District, Safety - Fire
627. Selma-Kingsburg-Fowler County Sanitation District, Miscellaneous
628. Shasta Lake Fire Protection District, Miscellaneous
629. Shasta Regional Transportation Agency, Miscellaneous
630. Sierra-Sacramento Valley Emergency Medical Services Agency, Miscellaneous
631. Silicon Valley Animal Control Authority, Miscellaneous
632. Silicon Valley Clean Water, Miscellaneous
633. Sonoma County Fire District, Miscellaneous
634. Sonoma County Fire District, Safety - Fire
635. Sonoma Marin Area Rail Transit District, Safety - Other Safety
636. Soquel Creek Water District, Miscellaneous
637. South Central Los Angeles Regional Center for Developmentally Disabled Persons, Miscellaneous
638. South Coast Water District, Miscellaneous
639. South County Support Services Agency, Miscellaneous
640. South Orange County Wastewater Authority, Miscellaneous
641. South Placer Fire District, Miscellaneous
642. South Placer Fire District, Safety - Fire
643. South San Joaquin County Fire Authority, Miscellaneous
644. South San Joaquin County Fire Authority, Safety - Fire
645. Southeast Area Social Services Funding Authority, Miscellaneous

Appendix E – List of Contracting Agencies

Level 4 (continued)

646. Stanislaus Consolidated Fire Protection District, Miscellaneous
647. Stanislaus Consolidated Fire Protection District, Safety - Fire
648. Stinson Beach County Water District, Miscellaneous
649. Stinson Beach Fire Protection District, Miscellaneous
650. Stinson Beach Fire Protection District, Safety - Fire
651. Stockton East Water District, Miscellaneous
652. Successor Agency to the Redevelopment Agency of the City of San Bernardino, Miscellaneous
653. Summit Cemetery District, Miscellaneous
654. Susanville Sanitary District, Miscellaneous
655. Temescal Valley Water District, Miscellaneous
656. Three Rivers Community Services District, Miscellaneous
657. Three Valleys Municipal Water District, Miscellaneous
658. Tiburon Fire Protection District, Miscellaneous
659. Tiburon Fire Protection District, Safety - Fire
660. Town of Corte Madera, Miscellaneous
661. Town of Corte Madera, Safety - Fire
662. Town of Hillsborough, Safety - Police
663. Town of Los Altos Hills, Miscellaneous
664. Town of Los Gatos, Miscellaneous
665. Town of Los Gatos, Safety - Police
666. Town of Mammoth Lakes, Miscellaneous
667. Town of Mammoth Lakes, Safety - Police
668. Town of Moraga, Miscellaneous
669. Town of Moraga, Safety - Police
670. Town of Paradise, Miscellaneous
671. Town of Paradise, Safety - Fire
672. Town of Paradise, Safety - Police
673. Town of Tiburon, Miscellaneous
674. Town of Windsor, Miscellaneous
675. Transbay Joint Powers Authority, Miscellaneous
676. Transportation Authority of Marin, Miscellaneous
677. Treasure Island Development Authority, Miscellaneous
678. Trindel Insurance Fund, Miscellaneous
679. Truckee Fire Protection District, Miscellaneous
680. Truckee Fire Protection District, Safety - Fire
681. Truckee Tahoe Airport District, Miscellaneous
682. Tuolumne Fire District, Safety - Fire
683. Twain Harte Community Services District, Miscellaneous
684. Twain Harte Community Services District, Safety - Fire
685. Twin Rivers Unified School District, Safety - Police
686. Ukiah Valley Fire District, Safety - Fire
687. Union Sanitary District, Miscellaneous
688. Upper San Gabriel Valley Municipal Water District, Miscellaneous
689. Val Verde Unified School District, Safety - Police
690. Valley Center Municipal Water District, Miscellaneous
691. Ventura County Schools Self-Funding Authority, Miscellaneous
692. Ventura Port District, Miscellaneous
693. Ventura Port District, Safety - Police
694. Victor Valley Transit Authority, Miscellaneous
695. Water Employee Services Authority, Miscellaneous
696. West Bay Sanitary District, Miscellaneous
697. West Contra Costa Integrated Waste Management Authority, Miscellaneous
698. West Contra Costa Transportation Advisory Committee, Miscellaneous
699. West County Wastewater District, Miscellaneous
700. West Valley Mosquito and Vector Control District, Miscellaneous
701. Western Contra Costa Transit Authority, Miscellaneous
702. Winton Water and Sanitary District, Miscellaneous
703. Woodbridge Rural County Fire Protection District, Miscellaneous
704. Woodbridge Rural County Fire Protection District, Safety - Fire
705. Woodside Fire Protection District, Safety - Fire
706. Yorba Linda Water District, Miscellaneous
707. Yuima Municipal Water District, Miscellaneous

Indexed Level

1. Alpine Springs County Water District, Miscellaneous
2. Alta California Regional Center, Inc., Miscellaneous
3. BETA Healthcare Group Risk Management Authority, Miscellaneous
4. California Central Valley Flood Control Association, Miscellaneous
5. California Special Districts Association, Miscellaneous
6. Central Fire Protection District of Santa Cruz County, Miscellaneous
7. Central Fire Protection District of Santa Cruz County, Safety - Fire
8. Central Sierra Child Support Agency, Miscellaneous
9. Channel Islands Beach Community Services District, Miscellaneous
10. City of Aliso Viejo, Miscellaneous

Appendix E – List of Contracting Agencies

Indexed Level (continued)

11. City of American Canyon, Miscellaneous
12. City of Berkeley, Safety - Fire
13. City of Crescent City, Safety - Fire
14. City of Del Mar, Safety - Fire
15. City of Eastvale, Miscellaneous
16. City of Emeryville, Safety - Fire
17. City of Garden Grove, Miscellaneous
18. City of Garden Grove, Safety - Fire
19. City of Garden Grove, Safety - Police
20. City of Greenfield, Safety - Fire
21. City of Hanford, Safety - Fire
22. City of Madera, Miscellaneous
23. City of Madera, Safety - Police
24. City of Maywood, Miscellaneous
25. City of Mill Valley, Safety - Fire
26. City of Mill Valley, Safety - Police
27. City of Modesto, Safety - Fire
28. City of Modesto, Safety - Police
29. City of Monterey, Safety - Fire
30. City of Monterey, Safety - Police
31. City of Napa, Miscellaneous
32. City of Napa, Safety - Fire
33. City of Newark, Miscellaneous
34. City of Newark, Safety - Fire
35. City of Newark, Safety - Police
36. City of Oceanside, Safety - Other Safety
37. City of Poway, Miscellaneous
38. City of Poway, Safety - Fire
39. City of Rancho Cordova, Miscellaneous
40. City of Rancho Santa Margarita, Miscellaneous
41. City of Redding, Miscellaneous
42. City of Sacramento, Safety - Police
43. City of Salinas, Safety - Police
44. City of San Carlos, Safety - Fire
45. City of San Marcos, Safety - Fire
46. City of Santa Clarita, Miscellaneous
47. City of Santee, Safety - Fire
48. City of Shasta Lake, Miscellaneous
49. City of Solana Beach, Safety - Fire
50. City of South Lake Tahoe, Miscellaneous
51. City of South Lake Tahoe, Safety - Fire
52. City of Yuba City, Miscellaneous
53. City of Yuba City, Safety - Fire
54. City of Yuba City, Safety - Police
55. Coalinga/Huron Unified School District Library District, Miscellaneous
56. Contra Costa Community College District, Safety - Police
57. Cooperative Organization for the Development of Employee Selection Procedures, Miscellaneous
58. County of Riverside, Miscellaneous
59. County of Riverside, Safety - County Peace Officer
60. County of Riverside, Safety - Fire
61. Foothill Municipal Water District, Miscellaneous
62. Foundation for California Community Colleges, Miscellaneous
63. Greater Los Angeles County Vector Control District, Miscellaneous
64. Greenfield Fire Protection District, Safety - Fire
65. Hesperia Unified School District, Safety - Police
66. Housing Authority of the County of Santa Cruz, Miscellaneous
67. Inland Empire Resource Conservation District, Miscellaneous
68. Jurupa Area Recreation and Park District, Miscellaneous
69. Loomis Fire Protection District, Miscellaneous
70. Loomis Fire Protection District, Safety - Fire
71. Marin Children and Families Commission, Miscellaneous
72. Marin County In-Home Supportive Services Public Authority, Miscellaneous
73. Menlo Park Fire Protection District, Miscellaneous
74. Menlo Park Fire Protection District, Safety - Fire
75. Midpeninsula Regional Open Space District, Miscellaneous
76. Mojave Air and Space Port, Miscellaneous
77. North Bay Cooperative Library System, Miscellaneous
78. North Delta Water Agency, Miscellaneous
79. Oceano Community Services District, Safety - Fire
80. Penryn Fire Protection District, Safety - Fire
81. Plumas Local Agency Formation Commission, Miscellaneous
82. Redwood Coast Regional Center, Miscellaneous
83. Regional Center of the East Bay, Miscellaneous
84. Sacramento Area Flood Control Agency, Miscellaneous
85. San Diego County Office Of Education, Miscellaneous
86. San Elijo Joint Powers Authority, Miscellaneous
87. San Francisquito Creek Joint Powers Authority, Miscellaneous
88. Santa Clara Valley Open Space Authority, Miscellaneous
89. Santa Monica Community College District, Safety - Police
90. Schools Insurance Authority, Miscellaneous
91. Scotts Valley Fire Protection District, Miscellaneous
92. Scotts Valley Fire Protection District, Safety - Fire

Appendix E – List of Contracting Agencies

Indexed Level (continued)

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| 93. Shasta Local Agency Formation Commission, Miscellaneous | 98. Utica Water and Power Authority, Miscellaneous |
| 94. Sonoma Marin Area Rail Transit District, Miscellaneous | 99. Vallejo Flood and Wastewater District, Miscellaneous |
| 95. State and Federal Contractors Water Agency, Miscellaneous | 100. Williams Fire Protection Authority, Miscellaneous |
| 96. Stege Sanitary District, Miscellaneous | 101. Williams Fire Protection Authority, Safety - Fire |
| 97. Town of Truckee, Safety - Police | 102. Yolo County In-Home Supportive Services Public Authority, Miscellaneous |
| | 103. Yuba Community College District, Safety – Police |

Appendix F – Glossary

Accrued Liability (Actuarial Accrued Liability)

The portion of the Present Value of Benefits allocated to prior years. It can also be expressed as the Present Value of Benefits minus the present value of future Normal Cost. Different actuarial cost methods and different assumptions will lead to different measures of Accrued Liability.

Actuarial Assumptions

Assumptions made about certain events that will affect pension costs. Assumptions generally can be broken down into two categories: demographic and economic. Demographic assumptions include such things as mortality, disability, and retirement rates. Economic assumptions include discount rate, wage inflation, and price inflation.

Actuarial Methods

Procedures employed by actuaries to achieve certain funding goals of a pension plan. Actuarial methods include an actuarial cost method, an amortization policy, and an asset valuation method.

Actuarial Valuation

The determination as of a valuation date of the Normal Cost, Accrued Liability, and related actuarial present values for a pension plan. These valuations are performed annually or when an employer is contemplating a change in plan provisions.

Actuary

A business professional proficient in mathematics and statistics who performs the calculations necessary to properly fund a pension plan and allow the plan sponsor to disclose its liabilities. An actuary performing an actuarial valuation for a public retirement system in California must satisfy the qualification standards for actuaries issuing statements of actuarial opinion in the United States with regard to pensions.

Amortization Bases

Separate payment schedules for different portions of the Unfunded Accrued Liability (UAL). The total UAL of a rate plan can be segregated by cause. The impact of such individual causes on the UAL are quantified at the time of their occurrence, resulting in new amortization bases. Each base is separately amortized and paid for over a specific period of time. Generally, in an actuarial valuation, the separate bases consist of changes in UAL due to contract amendments, actuarial assumption changes, method changes, and/or experience gains and losses.

Amortization Period

The number of years required to pay off an Amortization Base.

Discount Rate

This is the rate used to discount the expected future benefit payments to the valuation date to determine the Projected Value of Benefits. Different discount rates will produce different measures of the Projected Value of Benefits. The discount rate for funding purposes is based on the assumed long-term rate of return on plan assets, net of investment and administrative expenses. This rate is called the “actuarial interest rate” in Section 20014 of the California Public Employees’ Retirement Law.

Entry Age

The earliest age at which a plan member begins to accrue benefits under a defined benefit pension plan. In most cases, this is the age of the member on their date of hire.

Entry Age Actuarial Cost Method

An actuarial cost method that allocates the cost of the projected benefits on an individual basis as a level percent of earnings for the individual between entry age and retirement age. This method yields a total normal cost rate, expressed as a percentage of payroll, which is designed to remain level throughout the member’s career.

Fresh Start

A Fresh Start is when multiple amortization bases are combined into a single base and amortized over a new Amortization Period.

Funded Ratio

Defined as the Market Value of Assets divided by the Accrued Liability. Different actuarial cost methods and different assumptions will lead to different measures of Funded Ratio. The Funded Ratio with the Accrued Liability equal to the funding target is a measure of how well funded a rate plan is. A ratio greater than 100% means the rate plan has more assets than the funding target and the employer need only contribute the Normal Cost. A ratio less than 100% means assets are less than the funding target and contributions in addition to Normal Cost are required.

Appendix F – Glossary

Glossary (continued)

Funded Status

Any comparison of a particular measure of plan assets to a particular measure of pension obligations. The methods and assumptions used to calculate a funded status should be consistent with the purpose of the measurement.

Funding Target

The Accrued Liability measure upon which the funding requirements are based. The funding target is the Accrued Liability under the Entry Age Actuarial Cost Method using the assumptions adopted by the board.

Normal Cost

The portion of the Present Value of Benefits allocated to the upcoming fiscal year for active employees. Different actuarial cost methods and different assumptions will lead to different measures of Normal Cost. The Normal Cost under the Entry Age Actuarial Cost Method, using the assumptions adopted by the board, plus the required amortization of the UAL, if any, make up the required contributions.

Present Value of Benefits (PVB)

The total dollars needed as of the valuation date to fund all benefits earned in the past or expected to be earned in the future for *current* members.

Term Insurance Method

An actuarial cost method designed such that contributions are made to the plan to meet benefit payments expected to fall due within the year for which the contribution is made.

Unfunded Accrued Liability (UAL)

The Accrued Liability minus the Market Value of Assets. If the UAL for a rate plan is positive, the employer is required to make contributions in excess of the Normal Cost.

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