ARIZONA CORRECTIONS OFFICER RETIREMENT PLAN

CONSOLIDATED REPORT

ACTUARIAL VALUATION
AS OF JUNE 30, 2023

CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING JUNE 30, 2025

FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

VIA E-MAIL

November 2023

Board of Trustees
Arizona Corrections Officer Retirement Plan
Phoenix, AZ

Re: Actuarial Valuation Report as of June 30, 2023 – Arizona Corrections Officer Retirement Plan

Dear Members of the Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the Arizona Corrections Officer Retirement Plan (CORP). The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the appropriate funding requirements for the applicable plan year.

This report was prepared at the request of the Board and is intended for use by CORP and those designated or approved by the Board. It documents the valuation of the consolidated plan and provides summary information for CORP participating employers. This report may be provided to parties other than CORP only in its entirety and only with the permission of the Board. Foster & Foster is not responsible for the unauthorized use of this report.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the provisions of Title 38, Chapter 5, Article 6 of the Arizona Revised Statutes, as well as applicable federal laws and regulations. In our opinion, the assumptions used in this valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

The computed contribution rates shown in the "Contribution Results" section should be considered minimum contribution rates that comply with the Board's funding policy and Arizona Statutes. Users of this report should be aware that contributions made at that rate do not guarantee benefit security. Given the importance of benefit security to any retirement system, we suggest that contributions to the Plan in excess of those presented in this report be considered.

The funding percentages and unfunded accrued liability as measured based on the actuarial value of assets will differ from similar measures based on the market value of assets. These measures, as provided, are appropriate for determining the adequacy of future contributions, but may not be appropriate for the purpose of settling a portion or all of the Plan's liabilities.

In conducting the valuation, we have relied on personnel, plan design, and asset information supplied by CORP through June 30, 2023 and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

This valuation assumes the continuing ability of the participating employers to make the contributions necessary to fund this plan. A determination regarding whether or not the participating employers are actually able to do so is outside our scope of expertise. Consequently, we did not perform such an analysis.

In performing the analysis, we used third-party software to model (calculate) the underlying liabilities and costs. These results are reviewed in the aggregate and for individual sample lives. The output from the software is either used directly or input into internally developed models to generate the costs. All internally developed models are reviewed as part of the process. As a result of this review, we believe that the models have produced reasonable results. We do not believe there are any material inconsistencies among assumptions or unreasonable output produced due to the aggregation of assumptions.

The undersigned are familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster, Inc. working on valuations of the program has any direct financial interest or indirect material interest in the Arizona Corrections Officer Retirement Plan, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Arizona Corrections Officer Retirement Plan. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at 239-433-5500.

Respectfully Submitted,

Foster & Foster, Inc.

By: ______________________
Bradley R. Heinrichs, FSA, EA, MAAA

By: ______________________
Paul M. Baugher, FSA, EA, MAAA

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I. Summary of Report

The regular annual actuarial valuation of the Arizona Corrections Officer Retirement Plan, performed as of June 30, 2023, has been completed and the results are presented in this Report. The purpose of this valuation is to:

- Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members. This information is contained in the section entitled "Liability Support."
- Compare accumulated assets with the liabilities to assess the funded condition. This information is contained in the section entitled "Liability Support."
- Compute the employers' recommended contribution rates for the Fiscal Year beginning July 1, 2024. This information is contained in the section entitled "Contribution Results."

1. Key Valuation Results

The funded status as of June 30, 2023 and the employer contribution amounts applicable to the plan/fiscal year ending June 30, 2025 are as follows:

	Tier 1 & Tier 2 Members			Tier 3 Members *		
	Pension	**Health**	**Total**	**Pension**	**Health**	**Total**
Employer Contribution Rate	16.44%	0.00%	16.44%	4.13%	0.08%	4.21%
Funded Status	84.3%	164.3%	85.8%	101.0%	164.0%	102.3%

2. Comparison of Key Results to Prior Year

The chart below compares the results from this valuation with the results of the prior year's valuation (as of June 30, 2022):

Contribution Rate

	Tier 1 & Tier 2 Members			Tier 3 Members *		
Valuation Date	**Pension**	**Health**	**Total**	**Pension**	**Health**	**Total**
June 30, 2022	17.86%	0.00%	17.86%	4.12%	0.09%	4.21%
June 30, 2023	16.44%	0.00%	16.44%	4.13%	0.08%	4.21%

Funded Status

	Tier 1 & Tier 2 Members			Tier 3 Members		
Valuation Date	**Pension**	**Health**	**Total**	**Pension**	**Health**	**Total**
June 30, 2022	83.3%	159.8%	84.8%	108.8%	179.0%	110.3%
June 30, 2023	84.3%	164.3%	85.8%	101.0%	164.0%	102.3%

** The Tier 3 rates shown are the calculated rates as of the valuation date and do not reflect any Legacy costs that the employer must also contribute.*

3. Reasons for Change

Changes in the results from the prior year's valuation can be illustrated in the following tables along with high-level explanations for the entire Plan below:

Contribution Rate

	Tier 1 & Tier 2	
	Pension	**Health**
Contribution Rate Last Valuation	17.86%	0.00%
Asset Experience	0.10%	(0.01%)
Payroll Base	(1.25%)	0.03%
Liability Experience	2.17%	(0.09%)
Additional Contributions	(1.64%)	0.00%
Assumption/Method Change	0.19%	0.00%
Actuarial Audit	(0.23%)	0.01%
Other	(0.76%)	0.06%
Contribution Rate This Valuation	16.44%	0.00%

Funded Status

	Tier 1 & Tier 2	
	Pension	**Health**
Funded Status Last Valuation	83.3%	159.8%
Asset Experience	(0.1%)	0.5%
Liability Experience	(3.6%)	3.1%
Additional Contributions	2.3%	0.0%
Assumption/Method Change	0.0%	0.0%
Actuarial Audit	0.1%	(0.5%)
Other	2.3%	1.4%
Funded Status This Valuation	84.3%	164.3%

Asset Experience – Asset gains and losses (relative to the assumed earnings rate) are smoothed over seven years for Tiers 1 and 2 and over five years for Tier 3. The return on the market value of assets for the year ending June 30, 2023 was 7.7% for Tiers 1 and 2 and 7.7% for Tier 3. On a smoothed, actuarial value of assets basis, however, the average return was 6.8% for Tiers 1 and 2 and 6.2% for Tier 3, which both fall short of the 2022 assumed earnings rate of 7.2%.

Payroll Base – Under the current amortization policy for Tiers 1 and 2, the contribution rate is developed as a level percentage of payroll. Payroll for this purpose includes members of this plan and defined contribution plan's members that would have been in this plan. To the extent that actual payroll is lower/greater than last year's projected payroll, the contribution rate will increase/decrease as a result.

Liability Experience – Experience overall was unfavorable, driven by higher than expected salary increases for actives.

Additional Contribution – Monies contributed in excess of the required contribution rate in order to pay down the unfunded liability.

Assumption / Method Change – The Board reduced the Tier 3 interest rate from 7.20% to 7.00% and continued the decrease in the payroll growth assumption from 2.00% to 1.50%.

Audit Adjustment – An independent actuarial audit was performed during 2023, with recommendations made in a detailed report. Following discussions with staff, several changes (both numeric and written) were made as part of this valuation to improve the report going forward. The most notable change was prorating the COLA benefit in the first year of retirement and revisiting the valuation of the reverse DROP benefit.

Other – This is the combination of all other factors that could impact liabilities year-over-year, with the primary sources being changes in member data. Note that Tier 3 experience will stabilize as the group matures.

4. Looking Ahead

The volatility in annual returns, which have produced both gains and losses in recent years, was dampened by the asset smoothing reflected in the actuarial value of assets. The loss realized this year will, in the absence of other gains, put upward pressure on the contribution rate next year.

5. Conclusion

The funded status for Tiers 1 and 2 will continue to improve if assumptions are met and contributions at least equal to the rates determined for each employer are made to the fund. The recent adoption of a layered amortization approach along with a plan to systematically lower the payroll growth assumption was an excellent step to improve funding and ensure the Plan is on a viable path.

The funded status for Tier 3 will stabilize as the population continues to grow, as contributions appear sufficient to keep the liabilities fully funded.

II. CONTRIBUTION RESULTS

Contribution Requirements

Development of Employer Contributions - Tiers 1 & 2 Members				
Valuation Date	June 30, 2023		June 30, 2022	
Applicable to Fiscal Year Ending	2025		2024	
	Rate	**Dollar**	**Rate**	**Dollar**
Pension				
Normal Cost				
Total Normal Cost	11.81%	$57,314,320	12.50%	$58,363,809
Employee Cost	(7.96%)	(38,643,347)	(7.98%)	(37,234,426)
Employer (Net) Normal Cost	3.85%	18,670,973	4.52%	21,129,383
Amortization of Unfunded Liability	12.59%	61,103,780	13.34%	62,247,484
Total Employer Cost (Pension)	16.44%	79,774,753	17.86%	83,376,867
Health				
Normal Cost	0.24%	$1,185,190	0.28%	$1,291,711
Amortization of Unfunded Liability	(0.24%)	(1,185,190)	(0.28%)	(1,291,711)
Total Employer Cost (Health)	0.00%	0	0.00%	0
Total Employer Cost (Pension + Health)	**16.44%**	**79,774,753**	**17.86%**	**83,376,867**
Total Minimum Contribution Requirement (if applicable)	6.00%		6.00%	
Alternate Contribution Rate (ACR) *	12.59%		13.34%	
Underlying Payroll (as of valuation date)		485,297,106		466,762,442

** The Alternate Contribution Rate is the sum of the positive amortization rates for Tiers 1 & 2 Pension and Health (subject to a 6% minimum) and is charged when retirees return to active status.*

The results above are shown both prior to and after the application of the statutory minimum contribution requirement of 6% of payroll.

Development of Employer Contributions – Tier 3 Members

Valuation Date	June 30, 2023	June 30, 2022
Applicable to Fiscal Year Ending	2025	2024

Defined Benefit (DB) Retirement Plan [1]

	Rate	Dollar	Rate	Dollar
Pension				
Total Normal Cost	12.40%	$ 2,713,825	12.35%	$ 1,762,725
Amortization of Unfunded Liability	0.00%	0	0.00%	0
Total Pension Cost	12.40%	2,713,825	12.35%	1,762,725
Employee (EE) Pension Cost	8.27%	1,809,217	8.23%	1,175,150
Employer (ER) Pension Cost	4.13%	904,608	4.12%	587,575
Health				
Total Normal Cost	0.24%	52,526	0.27%	38,537
Amortization of Unfunded Liability	0.00%	0	0.00%	0
Total Health Cost	0.24%	52,526	0.27%	38,537
Employee (EE) Health Cost	0.16%	35,017	0.18%	25,691
Employer (ER) Health Cost	0.08%	17,509	0.09%	12,846
Total				
Total Calculated Tier 3 Required EE Individual Cost	8.43%	1,844,234	8.41%	1,200,841
Funding Policy Tier 3 Required EE Individual Cost [2]	8.38%	1,834,020	9.81%	1,400,189
Total Calculated Tier 3 Required ER Individual Cost (before Legacy)	4.21%	922,117	4.21%	600,421
Funding Policy Tier 3 Required ER Individual Cost (before Legacy) [2]	4.19%	917,010	4.90%	699,381
ER Legacy Cost of Tiers 1 & 2 Amort of Unfunded Liabilities [3]	36.72%	8,036,423	36.32%	5,183,982
Total Funding Policy Tier 3 Required ER Defined Benefit Cost	**40.91%**	**8,953,433**	**41.22%**	**5,883,363**
Underlying Payroll (as of valuation date)		21,885,684		14,273,078

[1] *Applicable to AOC Probation and Surveillance only.*

[2] *The "Funding Policy" cost was adopted in 2023 and first reflected in the June 30, 2023 valuation.*

[3] *Pursuant to ARS § 38-891(A), the amortization of positive unfunded liabilities for Tiers 1 & 2 shall be applied to all Tier 3 payroll on a level percent basis. However, while it is statutorily required to present the rates in this manner, these are the minimums where alternate methods for paying down that unfunded liability is at the discretion of each employer. Further, to understand the effects of reform in relation to Tier 3, compare the total rate of Tier 3 before application of those legacy costs.*

Development of Employer Contributions – Tier 3 Members		
Valuation Date	June 30, 2023	June 30, 2022
Applicable to Fiscal Year Ending	2025	2024

Defined Contribution (DC) Retirement Plan

	Rate	Dollar	Rate	Dollar
Tier 3 DC Only				
Employee Cost	7.00%	$ 16,549,827	7.00%	$ 12,465,098
Employee Health Subsidy Program Cost	0.23%	543,780	0.17%	302,724
Employee Disability Program Cost	0.44%	1,040,275	0.45%	801,328
Total Employee Cost	**7.67%**	**18,133,882**	**7.62%**	**13,569,150**
Employer Cost	5.00%	11,821,305	5.00%	8,903,641
Employer Health Subsidy Program Cost	0.23%	543,780	0.17%	302,724
Employer Disability Program Cost	0.44%	1,040,275	0.45%	801,328
Total Employer Cost (before Legacy)	**5.67%**	**13,405,360**	**5.62%**	**10,007,693**
ER Legacy Cost of Tiers 1 & 2 Amort of Unfunded Liabilities *	12.59%	29,766,046	13.34%	23,754,915
Total Employer Cost	**18.26%**	**43,171,406**	**18.96%**	**33,762,608**
Underlying Payroll (as of valuation date)		236,426,104		178,072,828

** Pursuant to ARS § 38-891(A), the amortization of positive unfunded liabilities for Tiers 1 & 2 shall be applied to all Tier 3 payroll on a level percent basis. However, while it is statutorily required to present the rates in this manner, these are the minimums where alternate methods for paying down that unfunded liability is at the discretion of each employer. Further, to understand the effects of reform in relation to Tier 3, compare the total rate of Tier 3 before application of those legacy costs.*

Historical Summary of Employer Rates

			Pension			Health		
	Valuation Date June 30	Fiscal Year Ending June 30	Normal Cost	Unfunded Amortization	Total	Normal Cost	Unfunded Amortization	Total
TIERS 1 & 2	2019	2021	6.73%	24.19%	30.92%	0.35%	(0.23%)	0.12%
	2020	2022	5.01%	26.42%	31.43%	0.29%	(0.19%)	0.10%
	2021	2023	4.88%	20.59%	25.47%	0.29%	(0.29%)	0.00%
	2022	2024	4.52%	13.34%	17.86%	0.28%	(0.28%)	0.00%
	2023	2025	3.85%	12.59%	16.44%	0.24%	(0.24%)	0.00%
TIER 3 [1]	2019	2021	4.95%	0.00%	4.95%	0.14%	0.00%	0.14%
	2020	2022	4.95%	0.00%	4.95%	0.14%	0.00%	0.14%
	2021 [2]	2023	4.05%	0.00%	4.05%	0.09%	0.00%	0.09%
	2021	2023	4.95%	0.00%	4.95%	0.14%	0.00%	0.14%
	2022 [2]	2024	4.12%	0.00%	4.12%	0.09%	0.00%	0.09%
	2022	2024	4.76%	0.00%	4.76%	0.14%	0.00%	0.14%
	2023 [2]	2025	4.13%	0.00%	4.13%	0.08%	0.00%	0.08%
	2023	2025	4.10%	0.00%	4.10%	0.09%	0.00%	0.09%

[1] *Rates shown are Board approved EE/ER rates, unless otherwise noted. Does not reflect Legacy costs that the employer must also contribute.*

[2] *Rates shown are calculated EE/ER rates.*

III. Liability Support

Liabilities and Funded Ratios by Benefit - Tiers 1 & 2

	June 30, 2023	June 30, 2022
Pension		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	$ 2,756,301,888	$ 2,571,374,159
Vested Members	60,564,766	49,920,080
Active Members	2,483,365,795	2,344,531,001
Total Actuarial Present Value of Benefits	5,300,232,449	4,965,825,240
Actuarial Accrued Liability (AAL)		
All Inactive Members	2,816,866,654	2,621,294,239
Active Members	2,116,344,649	1,968,638,840
Total Actuarial Accrued Liability	4,933,211,303	4,589,933,079
Actuarial Value of Assets (AVA)	4,158,864,289	3,822,268,062
Unfunded Actuarial Accrued Liability	774,347,014	767,665,017
Funded Ratio (AVA / PVB)	78.5%	77.0%
Funded Ratio (AVA / AAL)	84.3%	83.3%
Health		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	$ 48,782,939	$ 46,511,954
Active Members	51,769,005	53,413,228
Total Present Value of Benefits	100,551,944	99,925,182
Actuarial Accrued Liability (AAL)		
All Inactive Members	48,782,939	46,511,954
Active Members	44,586,037	45,454,842
Total Actuarial Accrued Liability	93,368,976	91,966,796
Actuarial Value of Assets (AVA)	153,410,799	147,004,307
Unfunded Actuarial Accrued Liability	(60,041,823)	(55,037,511)
Funded Ratio (AVA / PVB)	152.6%	147.1%
Funded Ratio (AVA / AAL)	164.3%	159.8%

Pension liabilities were increased by $370,742 and health liabilities were increased by $140,264 under the lateral transfer methodology.

Liabilities and Funded Ratios by Benefit - Tier 3

	June 30, 2023	June 30, 2022
Pension		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	0	0
Vested Members	652,521	322,732
Active Members	29,394,557	18,658,242
Total Actuarial Present Value of Benefits	30,047,078	18,980,974
Actuarial Accrued Liability (AAL)		
All Inactive Members	652,521	322,732
Active Members	6,456,660	3,670,441
Total Actuarial Accrued Liability	7,109,181	3,993,173
Actuarial Value of Assets (AVA)	7,181,569	4,345,704
Unfunded Actuarial Accrued Liability	(72,388)	(352,531)
Funded Ratio (AVA / PVB)	23.9%	22.9%
Funded Ratio (AVA / AAL)	101.0%	108.8%
Health		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	0	0
Active Members	569,762	385,713
Total Present Value of Benefits	569,762	385,713
Actuarial Accrued Liability (AAL)		
All Inactive Members	0	0
Active Members	146,690	84,922
Total Actuarial Accrued Liability	146,690	84,922
Actuarial Value of Assets (AVA)	240,611	152,034
Unfunded Actuarial Accrued Liability	(93,921)	(67,112)
Funded Ratio (AVA / PVB)	42.2%	39.4%
Funded Ratio (AVA / AAL)	164.0%	179.0%

Derivation of Experience (Gain)/Loss

Actual experience will never exactly match assumed experience, except by coincidence. Ideally, gains and losses will cancel each other over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience (gain) / loss is shown below, along with sources of the gains and losses.

		Tiers 1 & 2		Tier 3	
		Pension	**Health**	**Pension**	**Health**
(1)	Unfunded Actuarial Accrued Liability as of June 30, 2022	767,665,017	(55,037,511)	(352,531)	(67,112)
(2)	Normal Cost Developed in Last Valuation	21,129,383	1,291,711	1,762,725	38,537
(3)	Actual Contributions	262,826,560	400,624	894,146	75,852
(4)	Expected Interest On (1), (2), and (3)	47,495,884	(3,883,869)	69,904	(4,741)
(5)	Expected Unfunded Actuarial Accrued Liability as of June 30, 2023 (1)+(2)-(3)+(4)	573,463,724	(58,030,293)	585,952	(109,168)
(6)	Changes to UAAL Due to Assumptions, Methods and Benefits	0	0	308,367	5,452
(7)	Change to UAAL Due to Actuarial (Gain)/Loss	200,883,290	(2,011,530)	(966,707)	9,795
(8)	Unfunded Actuarial Accrued Liability as of June 30, 2023	774,347,014	(60,041,823)	(72,388)	(93,921)

FY 2023 Gains and Losses by Source

	Tiers 1 & 2		Tier 3	
	Pension	**Health**	**Pension**	**Health**
Investment Return	7,263,746	(433,980)	39,033	569
Salary Increases	193,276,803	-	83,574	1,198
Retirement	3,679,648	(2,651,108)	-	-
Turnover	(7,301,841)	(243,196)	(267,714)	(7,084)
Disability	(3,093,084)	(14,045)	(74,174)	(1,345)
Death-In-Service	(281,386)	(45,905)	(24,268)	(1,691)
Retiree Mortality	(17,614,397)	(1,581,149)	5	-
Audit Adjustment	(4,777,165)	291,632	101,620	593
Other *	29,730,966	2,666,221	(824,783)	17,555
Total	200,883,290	(2,011,530)	(966,707)	9,795

** The combination of all other factors that could impact liabilities year-over-year, with the primary sources being changes in member data.*

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IV. Asset Support

Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2023

Market Value Basis

	Tiers 1 & 2		Tier 3	
	Pension	**Health**	**Pension**	**Health**
Additions				
Contributions				
Member Contributions	$ 39,299,113	$ 0	$ 1,788,258	$ 0
Employer Contributions	262,826,560	0	894,146	0
Health Insurance Contributions	0	400,624	0	75,852
Total Contributions	302,125,673	400,624	2,682,404	75,852
Investment Income				
Net Increase in Fair Value	206,871,089	7,792,635	309,135	10,412
Interest and Dividends	58,536,169	2,205,001	87,473	2,945
Other Income	35,552,844	1,358,189	53,128	1,814
Less Investment Expenses	(8,473,773)	(264,366)	(12,663)	(353)
Net Investment Income	292,486,329	11,091,459	437,073	14,818
Transfers In	21,041	0	0	0
Total Additions	594,633,043	11,492,083	3,119,477	90,670
Deductions				
Distributions to Members				
Benefit Payments	211,371,171	0	0	0
Health Insurance Subsidy	0	4,772,885	0	0
Refund of Contributions	16,641,798	0	179,371	0
Total Distributions	228,012,969	4,772,885	179,371	0
Administrative Expenses	4,015,477	144,521	19,780	688
Transfers Out	252,107	0	14,319	0
Other	0	0	0	0
Total Deductions	232,280,553	4,917,406	213,470	688
Net Increase / (Decrease)	362,352,490	6,574,677	2,906,007	89,982
Net Position Held in Trust				
Prior Valuation	3,713,400,295	145,825,543	4,140,939	147,366
Beginning of the Year Adjustment	(1)	1	0	0
End of the Year	4,075,752,784	152,400,221	7,046,946	237,348

Development of Pension Actuarial Value of Assets - Tiers 1 & 2

A. Investment Income	
A1. Actual Investment Income	$ 288,470,852
A2. Expected Amount for Immediate Recognition	269,978,335
A3. Amount Subject to Amortization	18,492,517

	Year Ended June 30						
B. Amortization Schedule	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
2023 Experience (A3 / 7)	2,641,788	2,641,788	2,641,788	2,641,788	2,641,788	2,641,788	2,641,789
2022 Experience	(55,178,167)	(55,178,167)	(55,178,167)	(55,178,167)	(55,178,167)	(55,178,167)	
2021 Experience	57,594,125	57,594,125	57,594,125	57,594,125	57,594,122		
2020 Experience	(13,457,282)	(13,457,282)	(13,457,282)	(13,457,281)			
2019 Experience	(5,782,115)	(5,782,115)	(5,782,112)				
2018 Experience	(1,511,828)	(1,511,825)					
2017 Experience	8,429,733						
Total Amortization	(7,263,746)	(15,693,476)	(14,181,648)	(8,399,535)	5,057,743	(52,536,379)	2,641,789

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	3,822,268,062	
C2. Non-investment Net Cash Flow	73,881,638	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	4,158,864,289	
C4. Market Value of Assets, June 30, 2023	4,075,752,784	4,075,752,786
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	4,158,864,289	4,158,864,289

D. Rates of Return	
D1. Market Value Rate of Return	7.7%
D2. Actuarial Value Rate of Return	6.8%

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Development of Health Actuarial Value of Assets - Tiers 1 & 2

A. Investment Income	
A1. Actual Investment Income	$ 10,946,938
A2. Expected Amount for Immediate Recognition	10,344,773
A3. Amount Subject to Amortization	602,165

	Year Ended June 30						
B. Amortization Schedule	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
2023 Experience (A3 / 7)	86,024	86,024	86,024	86,024	86,024	86,024	86,021
2022 Experience	(2,435,759)	(2,435,759)	(2,435,759)	(2,435,759)	(2,435,759)	(2,435,757)	
2021 Experience	3,479,700	3,479,700	3,479,700	3,479,700	3,479,703		
2020 Experience	(806,920)	(806,920)	(806,920)	(806,919)			
2019 Experience	(382,214)	(382,214)	(382,213)				
2018 Experience	(81,544)	(81,541)					
2017 Experience	574,693						
Total Amortization	433,980	(140,710)	(59,168)	323,046	1,129,968	(2,349,733)	86,021

C. Actuarial Value of Assets	**Total**	**Employer**
C1. Actuarial Value of Assets, June 30, 2022	147,004,307	
C2. Non-investment Net Cash Flow	(4,372,261)	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	153,410,799	
C4. Market Value of Assets, June 30, 2023	152,400,221	152,400,220
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	153,410,799	153,410,799

D. Rates of Return	
D1. Market Value Rate of Return	7.6%
D2. Actuarial Value Rate of Return	7.4%

Development of Pension Actuarial Value of Assets - Tiers 3

A. Investment Income	
A1. Actual Investment Income	$ 417,293
A2. Expected Amount for Immediate Recognition	386,184
A3. Amount Subject to Amortization	31,109

	Year Ended June 30				
B. Amortization Schedule	**2023**	**2024**	**2025**	**2026**	**2027**
2023 Experience (A3 / 5)	6,222	6,222	6,222	6,222	6,221
2022 Experience	(79,022)	(79,022)	(79,022)	(79,020)	
2021 Experience	43,088	43,088	43,090		
2020 Experience	(8,624)	(8,624)			
2019 Experience	(697)				
Total Amortization	(39,033)	(38,336)	(29,710)	(72,798)	6,221

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	4,345,704	
C2. Non-investment Net Cash Flow	2,488,714	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	7,181,569	
C4. Market Value of Assets, June 30, 2023	7,046,946	7,046,946
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	7,181,569	7,181,569

D. Rates of Return	
D1. Market Value Rate of Return	7.7%
D2. Actuarial Value Rate of Return	6.2%

Development of Health Actuarial Value of Assets - Tiers 3

A. Investment Income	
A1. Actual Investment Income	$ 14,130
A2. Expected Amount for Immediate Recognition	13,294
A3. Amount Subject to Amortization	836

	Year Ended June 30				
B. Amortization Schedule	2023	2024	2025	2026	2027
2023 Experience (A3 / 5)	167	167	167	167	168
2022 Experience	(2,773)	(2,773)	(2,773)	(2,775)	
2021 Experience	2,330	2,330	2,331		
2020 Experience	(273)	(272)			
2019 Experience	(20)				
Total Amortization	(569)	(548)	(275)	(2,608)	168

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	152,034	
C2. Non-investment Net Cash Flow	75,852	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	240,611	
C4. Market Value of Assets, June 30, 2023	237,348	237,348
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	240,611	240,611

D. Rates of Return	
D1. Market Value Rate of Return	7.6%
D2. Actuarial Value Rate of Return	6.7%

V. Member Statistics

Valuation Data Summary

	June 30, 2023		June 30, 2022	
	Tiers 1 & 2	Tier 3	Tiers 1 & 2	Tier 3
Actives				
Number	7,341	386	8,135	284
Average Current Age	43.8	33.6	43.1	33.6
Average Age at Employment	30.5	31.6	30.7	31.8
Average Past Service	13.3	2.0	12.4	1.8
Average Annual Salary	$60,617	$53,835	$53,163	$47,554
Actives (transferred)				
Number	244	3	259	3
Average Current Age	38.3	30.4	37.3	32.0
Average Age at Employment	29.5	27.7	29.4	30.1
Average Past Service	8.9	2.7	7.9	1.9
Average Annual Salary	$57,896	$50,106	$51,862	$47,810
Retirees				
Number	5,983	0	5,768	0
Average Current Age	64.6	N/A	64.4	N/A
Average Annual Benefit	$31,950	N/A	$31,293	N/A
Beneficiaries				
Number	874	0	850	0
Average Current Age	69.9	N/A	69.1	N/A
Average Annual Benefit	$21,590	N/A	$21,063	N/A
Disability Retirees				
Number	173	0	173	0
Average Current Age	60.1	N/A	59.3	N/A
Average Annual Benefit	$22,550	N/A	$22,351	N/A
Inactive / Vested				
Number	3,676	105	3,736	61
Average Current Age	41.1	35.3	40.0	36.2
Average Accumulated Contributions	$9,715	$5,978	$8,609	$5,150
Total Number	18,291	494	18,921	348
Former Members (transferred)	N/A	N/A	N/A	N/A

Counts and Pay Summary by Service - Tiers 1 & 2

	Past Service									
Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30+**	**Total Count**	**Total Pay**	**Average Pay**
< 25	0	24	0	0	0	0	0	24	1,072,098	44,671
25 - 29	21	530	3	0	0	0	0	554	29,551,301	53,342
30 - 34	28	932	286	14	0	0	0	1,260	71,827,420	57,006
35 - 39	15	492	492	315	2	0	0	1,316	78,773,426	59,858
40 - 44	8	270	313	563	82	1	0	1,237	77,048,005	62,286
45 - 49	5	205	214	416	191	38	0	1,069	67,321,882	62,977
50 - 54	6	148	251	318	143	75	13	954	60,220,088	63,124
55 - 59	2	98	141	227	80	54	32	634	39,824,229	62,814
60 - 64	2	57	82	129	75	24	29	398	24,869,572	62,486
65+	1	29	29	33	22	13	12	139	8,610,556	61,946
Total	88	2,785	1,811	2,015	595	205	86	7,585	459,118,577	60,530

Counts and Pay Summary by Service - Tier 3

	Past Service									
Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30+**	**Total Count**	**Total Pay**	**Average Pay**
< 25	41	0	0	0	0	0	0	41	2,184,487	53,280
25 - 29	122	0	0	0	0	0	0	122	6,532,987	53,549
30 - 34	100	0	0	0	0	0	0	100	5,626,161	56,262
35 - 39	60	0	0	0	0	0	0	60	3,240,538	54,009
40 - 44	23	0	0	0	0	0	0	23	1,228,013	53,392
45 - 49	18	0	0	0	0	0	0	18	935,770	51,987
50 - 54	13	1	0	0	0	0	0	14	715,289	51,092
55 - 59	7	0	0	0	0	0	0	7	341,173	48,739
60 - 64	2	0	0	0	0	0	0	2	81,620	40,810
65+	2	0	0	0	0	0	0	2	44,607	22,304
Total	388	1	0	0	0	0	0	389	20,930,645	53,806

In-Payment Counts and Benefit Summary - Tiers 1 & 2

Age	Count	Average Annual Benefit
< 40	41	17,076
40 - 44	136	28,543
45 - 49	452	30,016
50 - 54	771	31,388
55 - 59	931	32,956
60 - 64	1,120	33,078
65 - 69	1,193	31,202
70 - 74	1,031	30,395
75 - 79	722	29,159
80 - 84	401	23,685
85 - 89	173	20,792
90 - 94	51	19,704
95 - 99	7	14,476
100+	1	31,308
Total	7,030	30,430

"In-Payment" refers to retired, beneficiary, and disabled members.

VI. Actuarial Assumptions and Methods

Interest Rate	This is the assumed earnings rate on System assets, compounded annually, net of investment and administrative expenses. ***Tiers 1 & 2:*** 7.20% per year. ***Tier 3:*** 7.00% per year.
Salary Increases	See table at the end of this section. This is an annual increase for individual member's salary. These rates are based on a 2022 experience study using actual plan experience.
Inflation	2.50%.
Tier 3 Compensation Limit	$72,947 for calendar 2023. Assumed increases of 2.00% per year thereafter
Cost-of-Living Adjustment	1.85%.
Mortality Rates	These rates are used to project future decrements from the population due to death. ***Active Lives:*** PubS-2010 Employee mortality, adjusted by a factor of 1.28 for male members and 1.11 for female members, with generational improvements using 85% of the most recent projection scale (currently Scale MP-2021). 100% of active deaths are assumed to be in the line of duty. ***Inactive Lives:*** PubS-2010 Healthy Retiree mortality, adjusted by a factor of 1.33 for male retirees and 1.13 for female retirees, with generational improvements using 85% of the most recent projection scale (currently Scale MP-2021). ***Beneficiaries:*** PubS-2010 Survivor mortality, adjusted by a factor of 0.99 for male beneficiaries and adjusted by a factor of 1.09 for female beneficiaries, with generational improvements with 85% of most recent projection scale (currently Scale MP-2021).

Disabled Lives:
PubS-2010 Disabled mortality, adjusted by a factor of 1.02 for male disabled members and 0.98 for female disabled members, with generational improvements using 85% of the most recent projection scale (currently Scale MP-2021).

The mortality assumptions sufficiently accommodate anticipated future mortality improvements.

<u>Retirement</u>

These rates are used to project future decrements from the active population due to retirement. The rates below are based on a 2022 experience study using actual plan experience.

Tier 1 – reaching 20 (25 for dispatchers) years of service after age 62:
Age-related rates based on age at retirement: 35% per year from age 62 - 74 and 100% assumed at age 75.

Tier 1 – reaching 20 (25 for dispatchers) years of service before age 62:
Service-related rates based on service at retirement. See complete table of rates at the end of this section.

Tiers 2 & 3:
Age-related rates based on age at retirement:

Age	Rate
53-54	40%
55	30%
56-57	15%
58-59	30%
60-61	65%
62+	100%

<u>Termination Rate</u>

These rates are used to project future decrements from the active population due to termination. Complete table of rates based on service at termination are provided at the end of this section. The rates apply to members prior to retirement eligibility and are based on a 2022 experience study using actual plan experience.

<u>Disability Rate</u>

These rates are used to project future decrements from the active population due to disability. Complete table of rates based on age at disability are provided at the end of this section. These rates are based on a 2022 experience study using actual plan experience. 80% of disablements are assumed to be duty-related.

Marital Status	For active members, 75% of males and 50% of females are assumed to be married. Actual marital status is used, where applicable, for inactive members.
Spouse's Age	Male spouses are assumed to be two years older than female members and female spouses are assumed to be three years younger than males members.
Benefit Commencement	Deferred members are assumed to commence benefits as follows: • Less than 10 years service (all tiers): immediate refund of contributions • Tier 1 (10+ years service): life annuity payable at age 62 • Tiers 2 & 3 (10+ years service): immediate refund of contributions
Reverse DROP Election	Based on experience provided by PSPRS, 20% of eligible members are assumed to elect the reverse DROP benefit. Interest is credited at 2.00% annually.
Health Care Utilization	For active members, 60% of retirees are expected to utilize retiree health care. Actual utilization is used for inactive members.
Funding Method	Entry Age Normal Cost Method.
Lateral Transfers	When active members transfer between employers, the new employer's liability starts from their new date of hire with no past service liability (i.e., all liability is accrued through normal cost). Per PSPRS administrative decision, once the new employer's liability is fully funded, the liability will reflect all past service liability.
Actuarial Asset Method	Method described below. Note that during periods when investment performance exceeds (falls short) of the assumed rate, the actuarial value of assets will tend to be less (greater) than the market value of assets. ***Tiers 1 & 2:*** Each year the assumed investment income is recognized in full while the difference between actual and assumed investment income are smoothed over a 7-year period subject to a 20% corridor around the market value. ***Tier 3:*** Each year the assumed investment income is recognized in full while the difference between actual and assumed investment income are

smoothed over a 5-year period subject to a 20% corridor around the market value.

Funding Policy Amortization Method

Tiers 1 & 2:
Any positive UAAL (assets less than liabilities) is amortized using a layered approach beginning with the June 30, 2020 valuation, with new amounts determined according to a Level Dollar method over a closed period of 15 years (phased into from current period of at most 30 years). Initial layer from June 30, 2019 valuation continues to be amortized according to a Level Percentage of Payroll method. Any negative UAAL (assets greater than liabilities) is amortized according to a Level Dollar method over an open period of 20 years.

Tier 3:
Any positive UAAL (assets less than liabilities) is amortized according to a Level Dollar method over a closed period of 10 years. No amortization is made of any negative UAAL (assets greater than liabilities).

Payroll Growth

1.50% per year. This is annual increase for total employer payroll.

Changes to Actuarial Assumptions and Methods Since the Prior Valuation

The interest rate for Tier 3 members was decreased from 7.20% to 7.00% and the payroll growth assumption was lowered from 2.00% to 1.50%.

There were no method changes since the prior valuation.

Retirement Rates Tier 1 20 (25) years before Age 62

Service	Rate
20	32%
21	32%
22	20%
23	17%
24	17%
25	17%
26	24%
27	17%
28	17%
29	17%
30	25%
31	25%
32	25%
33	25%
34	30%
35	30%
36	30%
37+	100%

Termination Rates

Service	Tier 1 and Tier 2	Tier 3
0	23.0%	15.0%
1	20.0%	13.5%
2	16.5%	12.0%
3	15.5%	11.0%
4	14.0%	9.0%
5	10.5%	8.0%
6	10.0%	7.0%
7	9.0%	6.0%
8	8.0%	6.0%
9	8.0%	6.0%
10	8.0%	6.0%
11	6.5%	2.5%
12	5.0%	2.5%
13	4.0%	2.5%
14	3.0%	2.5%
15	3.0%	2.5%
16	2.0%	2.0%
17	2.0%	1.5%
18	2.0%	1.0%
19	2.0%	0.5%
20+	2.0%	0.5%

Age	Disability Rates Rate	Salary Scale Rate
20	0.020%	6.25%
21	0.020%	6.00%
22	0.020%	5.50%
23	0.020%	5.25%
24	0.020%	5.25%
25	0.020%	5.25%
26	0.020%	5.25%
27	0.020%	5.00%
28	0.020%	5.00%
29	0.020%	5.00%
30	0.020%	4.75%
31	0.020%	4.75%
32	0.020%	4.50%
33	0.020%	4.50%
34	0.020%	4.25%
35	0.035%	4.25%
36	0.035%	4.00%
37	0.035%	4.00%
38	0.035%	3.75%
39	0.035%	3.75%
40	0.045%	3.75%
41	0.045%	3.75%
42	0.045%	3.75%
43	0.045%	3.50%
44	0.045%	3.50%
45	0.055%	3.50%
46	0.055%	3.50%
47	0.055%	3.50%
48	0.055%	3.50%
49	0.055%	3.50%
50	0.080%	3.50%
51	0.080%	3.50%
52	0.080%	3.25%
53	0.080%	3.25%
54	0.080%	3.25%
55	0.100%	3.25%
56	0.100%	3.25%
57	0.100%	3.25%
58	0.100%	3.00%
59	0.100%	3.00%
60	0.200%	3.00%
61+	0.000%	3.00%

VII. DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined under various assumption scenarios. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. Whenever possible, the recommended assumptions in this report reflect conservatism to allow for some margin of unfavorable future plan experience. However, it is still possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's contribution requirements associated with plan experience. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization payment could potentially grow to an unmanageable level.

- Investment Return: When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, contribution amounts can vary in the future.
- Salary Increases: When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.
- Payroll Growth: The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization payment can increase significantly as a percentage of payroll even if all assumptions other than the payroll growth assumption are realized.
- Demographic Assumptions: Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment

produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.

- Contribution risk: This risk results from the potential that actual employer contributions may deviate from actuarially determined contributions, which are determined in accordance with the Board's funding policy. The funding policy is intended to result in contribution requirements that if paid when due, will result in a reasonable expectation that assets will accumulate to be sufficient to pay plan benefits when due. Contribution deficits, particularly large deficits and those that occur repeatedly, increase future contribution requirements and put the plan at risk for not being able to pay plan benefits when due.

Impact of Plan Maturity on Risk

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared amongst active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on risk tolerance and the overall risk characteristics of the plan. For example, plans with a large amount of retired liability do not have as long of a time horizon to recover from losses (such as losses on investments due to lower than expected investment returns) as plans where the majority of the liability is attributable to active members. For this reason, less tolerance for investment risk may be warranted for highly mature plans with a substantial inactive liability. Similarly, mature plans paying substantial retirement benefits resulting in a small positive or net negative cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the plan, we have provided some relevant metrics in the table following titled "Plan Maturity Measures and Other Risk Metrics". Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, has decreased for Tiers 1 and 2 from 111.8% on June 30, 2020 to 70.8% on June 30, 2023. This is expected since the plan is closed to new active members. For Tier 3, the Ratio decreased from 1,164.3% on June 30, 2020 to 370.5% on June 30, 2023, consistent with the growth of a new group.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the plan, to the Total Accrued Liability, is 57.1% for Tiers 1 and 2. With a group of this maturity, losses due to lower than expected investment returns or demographic factors will need to be made up for over a shorter time horizon than would be needed for a less mature plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has increased from 52.1% on June 30, 2020 to 84.3% on June 30, 2023, due mainly to contributions in excess of the required amount. For Tier 3, the Ratio decreased from 117.8% on June 30, 2020 to 101.0% on June 30, 2023, consistent with a new group with appropriate contribution rates.
- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments) to the Market Value of Assets, increased from 1.1% on June 30, 2020 to 1.8% on June 30,

2023, meaning that contributions are currently covering the group's benefit payments. For Tier 3, the Ratio was 35.5%, which is consistent with a new benefit that is beginning to accumulate assets.

Low Default-Risk Obligation Measure

ASOP No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions, was revised as of December 2021 to include a "low-default-risk obligation measure" (LDROM). This liability measure is consistent with the determination of the actuarial accrued liability shown on pages 8 and 9 in terms of member data, plan provisions, and assumptions/methods, including the use of the Entry Age Normal Cost Method, except that the interest rate is tied to low-default-risk fixed income securities. The S&P Municipal Bond 20 Year High Grade Rate Index (daily rate closest to, but not later than, the measurement date) was selected to represent a current market rate of low risk but longer-term investments that could be included in a low-risk asset portfolio. The interest rate used in this valuation was 4.13%, resulting in an LDROM of $7,710,577,413 for Tiers 1 and 2 and $14,382,500 for Tier 3. The LDROM should not be considered the "correct" liability measurement; it simply shows a possible outcome if the Board elected to hold a very low risk asset portfolio. The Board actually invests the pension plan's contributions in a diversified portfolio of stocks and bonds and other investments with the objective of maximizing investment returns at a reasonable level of risk. Consequently, the difference between the plan's Actuarial Accrued Liability disclosed earlier in this section and the LDROM can be thought of as representing the expected taxpayer savings from investing in the plan's diversified portfolio compared to investing only in high quality bonds.

The actuarial valuation reports the funded status and develops contributions based on the expected return of the plan's investment portfolio. If instead, the plan switched to investing exclusively in high quality bonds, the LDROM illustrates that reported funded status would be lower (which also implies that the Actuarially Determined Contributions would be higher), perhaps significantly. Unnecessarily high contribution requirements in the near term may not be affordable and could imperil plan sustainability and benefit security.

It is important to note that the actuary has identified the risks above as the most significant risks based on the characteristics of the plan and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the reader.

Plan Maturity Measures and Other Risk Metrics – Tiers 1 & 2

	6/30/2023	6/30/2022	6/30/2021	6/30/2020
Support Ratio				
Total Actives	7,585	8,394	9,645	10,773
Total Inactives	10,706	10,527	10,106	9,639
Actives / Inactives	70.8%	79.7%	95.4%	111.8%
Asset Volatility Ratio				
Market Value of Assets (MVA)	4,075,752,786	3,713,400,295	3,215,933,036	2,070,559,462
Total Annual Payroll	459,118,577	445,910,155	480,729,371	533,673,543
MVA / Total Annual Payroll	887.7%	832.8%	669.0%	388.0%
Accrued Liability (AL) Ratio				
Inactive Accrued Liability	2,816,866,654	2,621,294,239	2,400,025,718	2,235,778,137
Total Accrued Liability	4,933,211,303	4,589,933,079	4,351,506,188	4,225,066,906
Inactive AL / Total AL	57.1%	57.1%	55.2%	52.9%
Funded Ratio				
Actuarial Value of Assets (AVA)	4,158,864,289	3,822,268,062	2,964,749,664	2,202,747,086
Total Accrued Liability	4,933,211,303	4,589,933,079	4,351,506,188	4,225,066,906
AVA / Total Accrued Liability	84.3%	83.3%	68.1%	52.1%
Net Cash Flow Ratio				
Net Cash Flow *	72,718,118	626,873,780	571,104,745	22,526,150
Market Value of Assets (MVA)	4,075,752,786	3,713,400,295	3,215,933,036	2,070,559,462
Net Cash Flow / MVA	1.8%	16.9%	17.8%	1.1%

* *Determined as total contributions minus benefit payments. Administrative expenses are typically included but are considered part of the net interest rate assumption for this plan.*

Plan Maturity Measures and Other Risk Metrics – Tier 3

	6/30/2023	6/30/2022	6/30/2021	6/30/2020
Support Ratio				
Total Actives	389	287	218	163
Total Inactives	105	61	37	14
Actives / Inactives	370.5%	470.5%	589.2%	1,164.3%
Asset Volatility Ratio				
Market Value of Assets (MVA)	7,046,946	4,140,939	2,668,803	1,049,886
Total Annual Payroll	20,930,645	13,648,856	9,715,138	7,128,851
MVA / Total Annual Payroll	33.7%	30.3%	27.5%	14.7%
Accrued Liability (AL) Ratio				
Inactive Accrued Liability	652,521	322,732	179,351	42,399
Total Accrued Liability	7,109,181	3,993,173	2,162,749	922,405
Inactive AL / Total AL	9.2%	8.1%	8.3%	4.6%
Funded Ratio				
Actuarial Value of Assets (AVA)	7,181,569	4,345,704	2,523,714	1,086,471
Total Accrued Liability	7,109,181	3,993,173	2,162,749	922,405
AVA / Total Accrued Liability	101.0%	108.8%	116.7%	117.8%
Net Cash Flow Ratio				
Net Cash Flow *	2,503,033	1,617,483	1,280,905	806,918
Market Value of Assets (MVA)	7,046,946	4,140,939	2,668,803	1,049,886
Net Cash Flow / MVA	35.5%	39.1%	48.0%	76.9%

* *Determined as total contributions minus benefit payments. Administrative expenses are typically included but are considered part of the net interest rate assumption for this plan.*

VIII. SUMMARY OF CURRENT PLAN

The following is a summary of the benefit provisions provided in Title 38, Chapter 5, Article 6 of the Arizona Revised Statutes.

<u>Membership</u>

Full-time employees of a participating employer in a designated position, whose customary employment is at least 40 hours each week. Includes employees hired after July 1, 2018 only if they are a judiciary probation or surveillance officer who makes the irrevocable election to participate in the plan.

<u>Benefit Tiers</u>

Benefits differ for members based on their hire date:

Tier	Hire Date
1	Hired before January 1, 2012
2	Hired on or after January 1, 2012 but before July 1, 2018
3	Hired on or after July 1, 2018

<u>Salary</u>

Salary is the amount including base salary, shift and military differential pay, and holiday pay, paid to an employee on a regular payroll basis. For Tier 3 members, salary is limited by statutory cap ($70,000 with adjustments by the Board).

<u>Average Monthly Benefit Salary</u>

Tier 1:
One-thirty-sixth of the highest total salary during a period of thirty-six consecutive months of service within the last one hundred twenty months of service.

Tier 2 & 3:
One-sixtieth of the highest total salary during a period of sixty consecutive months of service within the last one hundred twenty months of service.

<u>Credited Service</u>

Total periods of service, both from service other State plans and those compensated periods of service for which the member made contributions to the fund.

<u>Normal Retirement</u>
Date

Tier 1:
First day of the month following attainment of 1) age 62 with 10 years of Credited Service, 2) 20 (25, if dispatcher) years of Credited Service, or 3) age and Credited Service points equal to 80.

Tier 2:
First day of month following the attainment of 1) age 52.5 with 25 years of Credited Service, or 2) age 62 with 10 years of Credited Service.

Tier 3:
First day of month following the attainment of age 55 with 10 years of Credited Service.

Benefit

Tier 1:
2.50% times Credited Service (up to 20 years) times Average Monthly Salary. If Credited Service exceeds 20 years, an additional 2.00% accrual is provided for up to five years. If Credited Service exceeds 25 years, the additional accrual for service in excess of 20 years is increased to 2.50%. Maximum benefit equals 80% of Average Monthly Salary.

Tier 2:
2.50% times Credited Service times Average Monthly Salary (maximum benefit equals 80% of Average Monthly Salary).

Tier 3:
Benefit multiplier (below) times Average Monthly Benefit Salary times Credited Service (maximum benefit of 80% of Average Monthly Benefit Salary):

Credited Service	Benefit Multiplier
10 years, but less than 15	1.25%
15 years, but less than 20	1.50%
20 years, but less than 22	1.75%
22 years, but less than 25	2.00%
25+ years	2.25%

Form of Benefit

For married retirees, an annuity payable for the life of the member with 80% continuing to the eligible spouse upon death. For unmarried retirees, the normal form is a single life annuity.

Early Retirement

Only applicable to Tier 3 members:

Date

Attainment of age 52.5 and 10 years of Credited Service.

Benefit

Actuarial equivalent of Normal Retirement benefit.

Disability Benefit – Duty-Related

Eligibility

Total and permanent disability incurred in performance of duty.

Benefit Amount	The greater of 1) 50% of Average Monthly Salary, and 2) the Normal Retirement pension that the member is entitled to receive.

<u>Disability Benefit – Ordinary</u>

Eligibility	Total and permanent disability not incurred in performance of duty.
Benefit Amount	
Dispatchers	Normal Retirement pension that the member is entitled to receive prorated on Credited Service (maximum 25 years) over 25.
All Others	Normal Retirement pension that the member is entitled to receive prorated on Credited Service (maximum 20 years) over 20.

<u>Pre-Retirement Death Benefit</u>

Payable to Eligible Survivor	Payable to eligible spouse for life; payable to eligible children until adopted, age 18, or age 23 if full-time student. Note that this benefit is only payable following death of an active member.
Service Incurred	100% of Average Monthly Salary
Non-Service Incurred	40% of Average Monthly Salary.
No survivors	Two times member's accumulated contributions.

<u>Vesting (Termination)</u>

Deferred Annuity

***Tier 1*:**
For those with 10 or more years of Credited Service, an annuity based on two times member's accumulated contributions, deferred to age 62. Member is not entitled to survivor benefits, benefit increases, or group health insurance subsidy.

Return of Contributions

***Tier 1*:**
Lump sum payment of accumulated contributions, plus additional amount based on years of credited service.

Service	Additional % of Contributions
Less than 5 years	0%
5 years	25%
6 years	40%
7 years	55%
8 years	70%
9 years	85%
10+ years	100%

Tiers 2 & 3:
Lump sum payment of accumulated contributions, with interest at rate determined by the Board.

Cost-of-Living Adjustment

Payable to retired member or survivor of retired member

Tiers 1 & 2
Compound cost-of-living adjustment on base benefit. First payment is made on July 1, 2018, with annual adjustments effective every July 1 thereafter.
Cost-of-living adjustment will be based on the average annual percentage change in the Metropolitan Phoenix-Mesa Consumer Price Index published by the United states Department of Labor, Bureau of Statistics. Maximum increase of 2%.

Tier 3
Compound cost-of-living adjustment on base benefit beginning earlier of fist calendar year after the 7th anniversary of retirement or when the retired member reaches 60 years of age.
A cost-of-living adjustment shall be paid on July 1 each year that the funded ratio for members hired on or after July 1, 2018 is 70% or more.
The cost-of-living adjustment will be based on the average annual percentage change in the Metropolitan Phoenix-Mesa Consumer Price Index published by the United States Department of Labor, Bureau of Statistics. The cost-of-living adjustment will not exceed:

- 2%, if funded ratio for members who are hired on or after July 1, 2018 is 90% or more;
- 1.5%, if funded ratio for members who are hired on or after July 1, 2018 is 80-90%;
- 1%, if funded ratio for members who are hired on or after July 1, 2018 is 70-80%.

Reverse Deferred Retirement Option Plan (Reverse DROP):

Eligibility

Tier 1 and eligible for normal pension with at least 24 years of Credited Service (25 years for dispatchers). Must not have been awarded disability pension.

Reverse DROP Date

First day of month immediately following completion of required Credited Service or date not more than 60 consecutive months before the date the member elects to participate in the Reverse DROP, whichever is later.

Benefit Amount	Calculated based on Credited Service and Average Monthly Salary as of the Reverse DROP Date.
Reverse DROP Lump Sum	Accumulated benefit amounts (with interest) from Reverse DROP date to the date the member elected to participate in Reverse DROP. Interest is equal to the yield on five-year Treasury note as of the first day of the month, as published by the Federal Reserve Board.

<u>Post-Retirement Health Insurance Subsidy</u>

Eligibility: Retired member or survivor who elect health coverage provided by the state or participating employer.

Maximum Subsidy Amounts (monthly)

	Member Only	With Dependents
Medicare Eligible	$100	$170
One w/ Medicare	N/A	$215
Not Medicare Eligible	$150	$260

<u>Employee Contributions</u>

Tiers 1 and 2:
Non-dispatchers: 8.41% of salary, or 50/50 split of total employer and employee costs, whichever is lower, until the plan is 100% funded. Minimum contribution of 7.65% of salary.

Dispatchers: 0.45% less than non-dispatcher rate until plan is 100% funded; equal thereafter.

Tier 3:
66.7% of the Normal Cost plus 50% of a level-dollar amortization of unfunded actuarial accrued liability over a closed period not to exceed 10 years.

<u>Employer Contributions</u>

Tiers 1 & 2:
Normal Cost, plus amortization of unfunded actuarial accrued liability over a closed period not to exceed 20 years. Contribution will never be less than 6% of payroll.

Tier 3:
33.3% of the Normal Cost plus 50% of a level-dollar amortization of unfunded actuarial accrued liability over a closed period not to exceed 10 years.

Changes to Benefit Provisions Since the Prior Valuation

None.

IX. Actuarial Funding Policy

A pension plan funding policy describes how pension funding will improve for underfunded plans or maintain funded benefits for funded plans over time for those benefits defined in Arizona Revised Statutes (ARS). Those benefits defined in ARS are to be equitably managed and administered by the Arizona Public Safety Personnel Retirement System (PSPRS agency).

This Actuarial Funding Policy identifies the funding objectives and elements of the actuarial funding policy set by the Board for the PSPRS agency. The Board adopted this Funding Policy to help ensure the systematic funding of future benefit payments for members of the retirement systems as established by the legislature.

This policy covers all retirements systems administered by the Board: The Public Safety Personnel Retirement System (PSPRS); the Correction Officers Retirement Plan (CORP); and the Elected Officials Retirement Plan (EORP).

To achieve the systematic funding of future benefits, metrics are identified to measure the progress, or the lack of progress, over time to identify trends. These trends inform the continuation of the current policies or identify areas of needed research for consideration.

This funding policy is reviewed annually and adopted by the Board in accordance with ARS 38-863.02. This policy was reviewed and adopted by the Board in August 2023.

PSPRS Statement of Purpose

The Purpose of the Public Safety Personnel Retirement System is to provide uniform, consistent, and equitable statewide retirement programs for those who have been entrusted to our care.

Funding Objectives

1. Maintain adequate assets so that current plan assets, plus future contributions and investment earnings, are sufficient to fund all benefits expected to be paid to members and their beneficiaries.
    a. Corollary 1a: Current and future contributions should be calculated based upon assumptions that reflect the Board’s best estimate of future experience and methods that appropriately allocate costs to address generational equity.
    b. Corollary 1b: While the shorter-term objective is to fully fund the Actuarial Accrued Liability (AAL) that estimates benefits earned as of the valuation date, contributions should target the long-term Present Value of Benefits (PVB) to fund all benefits and help offset risks.
    c. As closed plans mature, the target funding should be 110% of AAL or 100% of PVB, whichever is greater.

2. Maintain public policy goals of accountability and transparency through stakeholder communication and education. Each policy element is clear in intent and effect, and each should be considered in a balanced approach to determine how and when the funding requirements of the plan will be met.
    a. Corollary 2a: Board shall provide stakeholders with separate reports and tools to help explain current results as well as to help model future funding requirements.

3. Promote intergenerational equity. Defined benefit pensions are designed with a long-term perspective and designed to minimize contribution volatility that cannot avoid some level of generational cost shift. However, the goal is that each generation of members and employers (taxpayers) should, to the extent possible, incur the cost of benefits for the employees who provide services to them, rather than shifting those costs to other generations of members and employers (taxpayers).
    a. Corollary 3a: A systematic reduction of the Unfunded Actuarial Accrued Liability (UAAL) over a reasonable time period is paramount to achieving this objective.

Consideration can be given to reduce volatility, to the extent possible, of employer and employee contribution rates as long as the integrity of the objectives listed above is not compromised.

Elements of Actuarial Funding Policy

1. Actuarial Cost Method
    a. The Entry Age Normal level percent of pay actuarial cost method of valuation shall be used in determining the AAL and Normal Cost. Differences in the past between assumed experience and actual experience ("actuarial gains and losses") shall become part of the AAL. The Normal Cost shall be determined on an individual basis for each active member.

2. Asset Smoothing Method
    a. The investment gains or losses of each valuation period, resulting from the difference between the actual investment return and assumed investment return, shall be recognized annually in level amounts over five years (Tier 3) or seven years (Tiers 1 and 2) in calculating the Actuarial Value of Assets (AVA).
    b. The AVA so determined shall be subject to a 20% corridor relative to the Market Value of Assets (MVA).

3. Amortization Method (Unfunded Amounts)
    a. The AVA is subtracted from the computed AAL. Any unfunded amount is amortized as a level percent of payroll over a closed period.
    b. The unfunded liabilities, for EORP and Tiers 1 & 2 for both PSPRS and CORP, determined in the 6/30/2019 actuarial valuation will become the initial layer for each employer beginning with the 6/30/2020 actuarial valuation and amortized using the current closed year period for that employer and continue to decrease each year.
        i. The payroll growth rate assumption used to amortize the PSPRS 6/30/2019 Unfunded Liability will be decreased by 0.5% beginning with the 6/30/2021 actuarial valuation and again each year with the intention of ultimately achieving 0.0%. Once the payroll growth assumption reaches 2.0%, however, the Board will reevaluate the payroll growth assumption and decide whether to continue to let it track down to 0.0%.
        ii. The payroll growth rate used to amortize the Correction Officers Retirement Plan (CORP) 6/30/2019 Unfunded Liability will be 3.0% beginning with the 6/30/2020 actuarial valuation, and future years will be reduced by 0.5% until 0.0% is reached.
        iii. The payroll growth rate used to amortize the Elected Officials Retirement Plan (EORP) 6/30/2019 Unfunded Liability will be 2.5% beginning with the 6/30/2020 actuarial valuation, and future years will be reduced by 0.5% until 0.0% is reached.

c. Gains and losses, for EORP and Tiers 1 & 2 for both PSPRS and CORP, for each employer beginning with the 6/30/2020 actuarial valuation will be amortized as a new layer over the same amortization period as the regular unfunded liability to a minimum of 15 years. Once the amortization period for each employer decreases to 15 years, each subsequent year's gains and losses will be amortized as a new 15-year closed layer.
   i. The payroll growth rate used to amortize the unfunded liability for all Plans under this paragraph will be 0.0% (i.e. level-dollar amortization).

d. Tier 3 amortization methods are established in ARS 38-843.G and ARS 38-891.K.

4. Amortization Method (Overfunded Amounts)
   a. The AVA is subtracted from the target funding level (greater of 110% of AAL or 100% of PVB). Any overfunded amount is amortized as a level dollar amount over an open 10-year period.

5. Tier 3 Rate Calculation
   a. Tier 3 is distinct from Tiers 1 & 2 in PSPRS and CORP as the contributions are a shared percentage (50/50 split for PSPRS: for CORP, employer 1/3 and member 2/3 of the normal cost plus 50 percent each, member and employer, of the UAAL amortization) for employers and members based on the actuarially calculated rate. To reduce the impact of volatility to rates, the Tier 3 rates will be smoothed over a 3-year rolling period based on the actuarially calculated rates for each year's actuarial valuation.
      i. Beginning with the 6/30/2023 valuation, the prospective Tier 3 rates set by the Board of Trustees are planned to be a rolling average of the actuarial calculated Tier 3 rates using the 6/30/2023, 6/30/2022 and 6/30/2021 rates in the initial process.
      ii. As assumptions may be updated year-to-year, the prior calculated rates are not updated for those changes, the prior calculated rates are used to smooth in the new rates.
   b. At the May 2023 Board Meeting, the Board changed the assumed rate of return for CORP Tier 3, which was at 7.2%, to match the 7.0% assumed rate of return for PSPRS Tier 3. The Board committed to continue to monitor market conditions and directions with the intent to ultimately adopt a single assumed rate of return for all investments for retirement systems/plans administered by PSPRS agency.

Metrics to Monitor Funding Objectives

1. Appropriateness of Assumptions – Gain/Loss Experience (Corollary 1a)
   a. Metric: Do the cumulative gain/loss layers over the prior five years exceed 8% of plan assets?
   b. Measurement: History of annual gain/loss (split by asset and liability experience) and five-year cumulative results will be tracked.
   c. Action Plan: This metric assumes that a full experience study is performed at least every five years so objective of measurement is to monitor interim experience. If the metric answer is yes, a review of the sources or causes of gains and losses should be analyzed and presented to the Advisory Committee to provide a recommendation to the Board of Trustees. The analysis and presentation are intended to provide a basis for consideration if assumption changes are warranted between full experience studies.

2. Funding Targets (Corollary 1b)
   a. Metric: Has the funded status, on both an AAL and PVB basis when compared to the MVA, increased over a five-year period?
   b. Measurement: History of funded status measures will be tracked.
   c. Action Plan: If the answer is no and not readily explainable (e.g., significant assumption change), a review of the reason(s) for the decrease should be researched and presented to the Advisory Committee to provide a recommendation to the Board of Trustees. The analysis and presentation are intended to provide a basis for consideration if changes to assumptions and/or methods are warranted between full experience studies.

3. Communication with Stakeholders (Corollary 2a)
   a. Metric: Have reports and budgeting tools been provided to stakeholders in a timely fashion?
   b. Measurement: Yes/No answer based on input from PSPRS administrator. (An annual standard survey of stakeholders – 3 to 5 questions.)
   c. Action Plan: If the answer is no, and periodically regardless (e.g., every three years), PSPRS staff will revisit this metric to report to the Advisory Committee to provide a recommendation to the Board of Trustees if current reports / tools are sufficient and if the delivery timing is appropriate.

4. Timely Recognition of Costs (Corollary 3a)
   a. Metric: Has the percentage of unfunded liability subject to negative amortization decreased over a five-year lookback period?
   b. Measurement: History of unfunded liability subject to negative amortization as a percentage of total unfunded liability will be tracked.
   c. Action Plan: If the answer is no, and not readily explainable (e.g., adopted assumption changes being phased in are anticipated to address negative amortization), a review of the reason(s) for negative amortization should be researched and presented to the Advisory Committee to provide a recommendation to the Board of Trustees. The analysis and presentation are intended to provide a basis for consideration if changes to assumptions and/or methods are warranted between full experience studies.

X. GLOSSARY

Actuarial Accrued Liability – Computed differently under different funding methods, the actuarial accrued liability generally represents the portion of the actuarial present value of benefits attributable to service credit earned (or accrued) as of the valuation date.

Actuarial Present Value of Benefits – Amount which, together with future interest, is expected to be sufficient to pay all benefits to be paid in the future, regardless of when earned, as determined by the application of a particular set of actuarial assumptions; equivalent to the actuarial accrued liability plus the present value of future normal costs attributable to the members.

Actuarial Assumptions – Assumptions as to the occurrence of future events affecting pension costs. These assumptions include rates of investment earnings, changes in salary, rates of mortality, withdrawal, disablement, and retirement as well as statistics related to marriage and family composition.

Actuarial Cost Method – A method of determining the portion of the cost of a pension plan to be allocated to each year; sometimes referred to as the "actuarial funding method." Each cost method allocates a certain portion of the actuarial present value of benefits between the actuarial accrued liability and future normal costs.

Actuarial Equivalence – Series of payments with equal actuarial present values on a given date when valued using the same set of actuarial assumptions.

Actuarial Present Value - The amount of funds required as of a specified date to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payments between the specified date and the expected date of payment.

Actuarial Value of Assets – The value of cash, investments, and other property belonging to the pension plan as used by the actuary for the purpose of the actuarial valuation. This may correspond to market value of assets, or some modification using an asset valuation method to reduce the volatility of asset values.

Asset Gain (Loss) – That portion of the actuarial gain attributable to investment performance above (below) the expected rate of return in the actuarial assumptions.

Amortization – Paying off an interest-discounted amount with periodic payments of interest and (generally) principal, as opposed to paying off with a lump sum payment.

Amortization Payment – That portion of the pension plan contribution designated to pay interest and reduce the outstanding principal balance of unfunded actuarial accrued liability. If the amortization payment is less than the accrued interest on the unfunded actuarial accrued liability the outstanding principal balance will increase.

Assumed Earnings Rate – The interest rate used in developing present values to reflect the time value of money.

Decrements – Events which result in the termination of membership in the system such as retirement, disability, withdrawal, or death.

Entry Age Normal (EAN) Funding Method – A standard actuarial funding method whereby each member's normal costs (service costs) are generally level as a percentage of pay from entry age until retirement. The annual cost of benefits is comprised of the normal cost plus an amortization payment to reduce the UAL.

Experience Gain (Loss) – The difference between actual unfunded actuarial accrued liabilities and anticipated unfunded actuarial accrued liabilities during the period between two valuation dates. It is a measurement of the difference between actual and expected experience, and may be related to investment earnings above (or below) those expected or changes in the liability due to fewer (or greater) than expected numbers of retirements, deaths, disabilities, or withdrawals, or variances in pay increases relative to assumed pay increases. The effect of such gains (or losses) is to decrease (or increase) future costs.

Funded Ratio – A measure of the ratio of the actuarial value of assets to liabilities of the system. Typically, the assets used in the measure are the actuarial value of assets as determined by the asset valuation method. The funded ratio depends not only on the financial strength of the plan but also on the asset valuation method used to determine the assets and on the funding method used to determine the liabilities.

Market Value of Assets (MVA) – The value of assets as they would trade on an open market.

Normal Cost – Computed differently under different funding methods, generally that portion of the actuarial present value of benefits allocated to the current plan year.

Unfunded Actuarial Accrued Liability (UAAL) – The excess of the actuarial accrued liability over the valuation assets; sometimes referred to as "unfunded past service liability". UAL increases each time an actuarial loss occurs and when new benefits are added without being fully funded initially and decreases when actuarial gains occur.

APPENDIX A: SUMMARY OF POPULATION DATA BY EMPLOYER - TIERS 1 & 2

Employer Number	Employer Name	Number of Actives	Active Payroll	Number of Retirees	Annual Retiree Benefits	Number of Inactive/ Vested	Inactive/Vested Accum. Member Contrib.	Number Transferred Out
500	Department of Corrections - Detention	4,272	249,068,276	4,155	112,971,990	1,382	12,197,532	160
501	Dept of Juvenile Corrections - Detention	168	9,116,585	320	9,349,717	256	1,898,496	12
502	Pinal County - Detention	100	5,834,811	63	1,912,517	30	353,340	7
503	Gila County - Detention	20	1,232,639	19	361,210	34	248,710	3
504	Graham County - Detention	8	438,409	7	153,685	27	89,586	6
505	Maricopa County - Detention	1,191	77,223,476	813	27,955,740	518	6,537,678	59
506	City of Avondale - Detention	8	527,426	4	139,625	5	46,185	2
507	La Paz County - Detention	7	357,550	2	48,134	10	201,440	2
510	Yuma County - Detention	68	3,886,358	37	1,099,815	82	729,226	13
515	Pima County - Detention	217	12,681,199	273	8,737,183	187	1,968,736	10
520	Apache County - Detention	4	209,845	8	161,272	23	52,877	2
525	Cochise County - Detention	27	1,407,398	39	737,801	36	317,232	8
530	Coconino County - Detention	30	2,054,770	22	665,713	85	596,785	9
535	Mohave County - Detention	33	1,919,708	22	470,300	89	488,788	4
540	Santa Cruz County - Detention	4	144,775	6	151,878	31	248,806	3
545	Navajo County - Detention	16	868,132	11	235,240	43	184,556	7
550	Yavapai County - Detention	71	4,639,745	67	1,702,775	147	946,533	7
555	Pinal County - Dispatchers	3	176,323	5	189,683	8	60,792	0
556	Town of Oro Valley - Dispatchers	2	145,894	6	203,739	3	74,805	0
557	Town of Marana - Dispatchers	1	67,587	6	217,464	2	3,662	0
558	Gila County - Dispatchers	1	69,500	4	131,120	4	50,824	0
559	Town of Wickenburg - Dispatchers	0	0	3	51,753	2	46,220	0
560	Graham County - Dispatchers	2	112,085	0	0	3	20,838	0
561	Yavapai County - Dispatchers	1	72,947	3	69,513	1	45,076	0
562	City of Somerton - Dispatchers	2	95,576	2	73,768	2	41,866	0
563	Department of Public Safety - Dispatchers	11	762,915	22	876,628	4	57,932	0
564	Department of Public Safety - Detention	6	384,828	0	0	1	5,763	0
575	Administrative Office of the Courts	1,312	85,619,820	1,111	45,257,059	661	8,197,722	85
	TOTAL	7,585	459,118,577	7,030	213,925,322	3,676	35,712,006	N/A

APPENDIX B: SUMMARY OF PENSION FUNDED STATUS BY EMPLOYER - TIERS 1 & 2

Employer Number	Employer Name	Liability (PVB)	Liability (AAL)	Assets (AVA)	Assets (MV)	Unfunded (AAL - AVA)	Unfunded (AAL - MV)	Funded Percent (AVA/AAL)	Funded Percent (MV/AAL)
500	Department of Corrections - Detention	2,696,937,069	2,493,867,308	2,388,042,311	2,340,319,236	105,824,997	153,548,072	95.8%	93.8%
501	Dept of Juvenile Corrections - Detention	162,047,073	155,901,111	155,105,130	152,005,481	795,981	3,895,630	99.5%	97.5%
502	Pinal County - Detention	63,368,658	59,448,077	61,354,894	60,128,767	(1,906,817)	(680,690)	103.2%	101.1%
503	Gila County - Detention	10,150,500	9,298,597	9,698,378	9,504,564	(399,781)	(205,967)	104.3%	102.2%
504	Graham County - Detention	3,592,102	3,231,826	3,100,632	3,038,669	131,194	193,157	95.9%	94.0%
505	Maricopa County - Detention	818,998,175	754,829,748	569,034,117	557,662,435	185,795,631	197,167,313	75.4%	73.9%
506	City of Avondale - Detention	4,240,842	3,550,192	2,922,393	2,863,992	627,799	686,200	82.3%	80.7%
507	La Paz County - Detention	2,905,161	2,624,882	2,187,965	2,144,240	436,917	480,642	83.4%	81.7%
510	Yuma County - Detention	35,333,800	31,831,145	31,524,256	30,894,270	306,889	936,875	99.0%	97.1%
515	Pima County - Detention	182,699,559	171,628,065	153,890,209	150,814,839	17,737,856	20,813,226	89.7%	87.9%
520	Apache County - Detention	2,920,642	2,742,668	3,208,550	3,144,430	(465,882)	(401,762)	117.0%	114.6%
525	Cochise County - Detention	17,314,432	16,105,159	9,415,866	9,227,698	6,689,293	6,877,461	58.5%	57.3%
530	Coconino County - Detention	24,583,627	22,637,291	20,757,441	20,342,620	1,879,850	2,294,671	91.7%	89.9%
535	Mohave County - Detention	14,631,199	12,800,167	11,183,252	10,959,764	1,616,915	1,840,403	87.4%	85.6%
540	Santa Cruz County - Detention	3,010,792	2,867,456	2,988,403	2,928,683	(120,947)	(61,227)	104.2%	102.1%
545	Navajo County - Detention	7,508,203	6,814,414	7,180,268	7,036,776	(365,854)	(222,362)	105.4%	103.3%
550	Yavapai County - Detention	46,343,456	42,230,612	26,843,886	26,307,433	15,386,726	15,923,179	63.6%	62.3%
555	Pinal County - Dispatchers	3,545,656	3,363,941	4,124,438	4,042,014	(760,497)	(678,073)	122.6%	120.2%
556	Town of Oro Valley - Dispatchers	4,004,173	3,910,076	3,929,592	3,851,063	(19,516)	59,013	100.5%	98.5%
557	Town of Marana - Dispatchers	3,642,153	3,570,310	2,182,772	2,139,151	1,387,538	1,431,159	61.1%	59.9%
558	Gila County - Dispatchers	2,175,272	2,155,117	2,418,988	2,370,646	(263,871)	(215,529)	112.2%	110.0%
559	Town of Wickenburg - Dispatchers	603,097	603,097	672,054	658,623	(68,957)	(55,526)	111.4%	109.2%
560	Graham County - Dispatchers	859,954	793,596	822,866	806,421	(29,270)	(12,825)	103.7%	101.6%
561	Yavapai County - Dispatchers	1,604,649	1,515,028	956,628	937,510	558,400	577,518	63.1%	61.9%
562	City of Somerton - Dispatchers	1,850,213	1,772,651	928,738	910,178	843,913	862,473	52.4%	51.3%
563	Department of Public Safety - Dispatchers	19,223,965	18,794,647	19,036,412	18,655,985	(241,765)	138,662	101.3%	99.3%
564	Department of Public Safety - Detention	1,844,266	1,430,485	1,076,702	1,055,185	353,783	375,300	75.3%	73.8%
575	Administrative Office of the Courts	1,164,293,761	1,102,893,637	664,277,149	651,002,113	438,616,488	451,891,524	60.2%	59.0%
	Unallocated	0	0	(1)	(2)	1	2		
	TOTAL	5,300,232,449	4,933,211,303	4,158,864,289	4,075,752,784	774,347,014	857,458,519	84.3%	82.6%

APPENDIX C: SUMMARY OF PENSION CONTRIBUTION BY EMPLOYER - TIERS 1 & 2

Employer Number	Employer Name	ER NC%	UAAL Pmt %	Calculated ER Cont.	Required ER Cont.
500	Department of Corrections - Detention	4.24%	2.70%	6.94%	6.94%
501	Dept of Juvenile Corrections - Detention	3.85%	0.56%	4.41%	6.00%
502	Pinal County - Detention	3.74%	0.00%	3.74%	6.00%
503	Gila County - Detention	3.81%	0.00%	3.81%	6.00%
504	Graham County - Detention	6.35%	0.63%	6.98%	6.98%
505	Maricopa County - Detention	4.13%	20.18%	24.31%	24.31%
506	City of Avondale - Detention	8.11%	10.31%	18.42%	18.42%
507	La Paz County - Detention	2.61%	6.41%	9.02%	9.02%
510	Yuma County - Detention	4.91%	0.51%	5.42%	6.00%
515	Pima County - Detention	3.95%	8.61%	12.56%	12.56%
520	Apache County - Detention	3.17%	(3.11%)	0.06%	0.06%
525	Cochise County - Detention	4.42%	30.32%	34.74%	34.74%
530	Coconino County - Detention	3.21%	4.78%	7.99%	7.99%
535	Mohave County - Detention	3.96%	4.32%	8.28%	8.28%
540	Santa Cruz County - Detention	4.16%	0.00%	4.16%	6.00%
545	Navajo County - Detention	3.70%	0.00%	3.70%	6.00%
550	Yavapai County - Detention	3.99%	18.43%	22.42%	22.42%
555	Pinal County - Dispatchers	2.76%	(2.76%)	0.00%	0.00%
556	Town of Oro Valley - Dispatchers	1.51%	0.00%	1.51%	6.00%
557	Town of Marana - Dispatchers	3.18%	212.95%	216.13%	216.13%
558	Gila County - Dispatchers	1.82%	(1.82%)	0.00%	0.00%
559	Town of Wickenburg - Dispatchers	0.00%	0.00%	0.00%	0.00%
560	Graham County - Dispatchers	2.70%	0.00%	2.70%	6.00%
561	Yavapai County - Dispatchers	2.24%	62.89%	65.13%	65.13%
562	City of Somerton - Dispatchers	3.19%	91.92%	95.11%	95.11%
563	Department of Public Safety - Dispatchers	2.03%	0.00%	2.03%	6.00%
564	Department of Public Safety - Detention	5.86%	4.51%	10.37%	10.37%
575	Administrative Office of the Courts	2.43%	36.72%	39.15%	39.15%
	TOTAL	3.85%	12.59%	16.44%	16.44%

APPENDIX D: SUMMARY OF HEALTH FUNDED STATUS BY EMPLOYER - TIERS 1 & 2

Employer Number	Employer Name	Liability (PVB)	Liability (AAL)	Assets (AVA)	Assets (MV)	Unfunded (AAL - AVA)	Unfunded (AAL - MV)	Funded Percent (AVA/AAL)	Funded Percent (MV/AAL)
500	Department of Corrections - Detention	60,330,205	56,268,362	92,677,998	92,067,491	(36,409,636)	(35,799,129)	164.7%	163.6%
501	Dept of Juvenile Corrections - Detention	3,477,785	3,335,885	7,683,841	7,633,224	(4,347,956)	(4,297,339)	230.3%	228.8%
502	Pinal County - Detention	1,289,770	1,184,234	1,987,197	1,974,106	(802,963)	(789,872)	167.8%	166.7%
503	Gila County - Detention	213,769	195,693	490,269	487,039	(294,576)	(291,346)	250.5%	248.9%
504	Graham County - Detention	65,515	58,400	111,102	110,370	(52,702)	(51,970)	190.2%	189.0%
505	Maricopa County - Detention	13,114,397	11,969,428	22,511,348	22,363,056	(10,541,920)	(10,393,628)	188.1%	186.8%
506	City of Avondale - Detention	70,608	64,893	65,076	64,647	(183)	246	100.3%	99.6%
507	La Paz County - Detention	52,772	48,035	30,271	30,071	17,764	17,964	63.0%	62.6%
510	Yuma County - Detention	573,427	506,254	1,559,416	1,549,144	(1,053,162)	(1,042,890)	308.0%	306.0%
515	Pima County - Detention	2,724,135	2,514,315	4,963,149	4,930,455	(2,448,834)	(2,416,140)	197.4%	196.1%
520	Apache County - Detention	44,483	41,776	250,239	248,591	(208,463)	(206,815)	599.0%	595.1%
525	Cochise County - Detention	314,668	288,553	912,119	906,110	(623,566)	(617,557)	316.1%	314.0%
530	Coconino County - Detention	418,216	385,895	618,818	614,742	(232,923)	(228,847)	160.4%	159.3%
535	Mohave County - Detention	231,194	201,120	945,876	939,645	(744,756)	(738,525)	470.3%	467.2%
540	Santa Cruz County - Detention	110,238	106,667	223,175	221,705	(116,508)	(115,038)	209.2%	207.8%
545	Navajo County - Detention	121,950	107,706	534,279	530,759	(426,573)	(423,053)	496.1%	492.8%
550	Yavapai County - Detention	693,266	631,032	1,682,939	1,671,853	(1,051,907)	(1,040,821)	266.7%	264.9%
555	Pinal County - Dispatchers	41,740	38,077	234,201	232,658	(196,124)	(194,581)	615.1%	611.0%
556	Town of Oro Valley - Dispatchers	32,058	30,202	86,045	85,478	(55,843)	(55,276)	284.9%	283.0%
557	Town of Marana - Dispatchers	15,213	13,882	71,153	70,684	(57,271)	(56,802)	512.6%	509.2%
558	Gila County - Dispatchers	19,542	19,146	131,873	131,004	(112,727)	(111,858)	688.8%	684.2%
559	Town of Wickenburg - Dispatchers	0	0	60,049	59,653	(60,049)	(59,653)	100.0%	100.0%
560	Graham County - Dispatchers	21,333	19,204	31,326	31,120	(12,122)	(11,916)	163.1%	162.0%
561	Yavapai County - Dispatchers	53,387	52,270	35,076	34,845	17,194	17,425	67.1%	66.7%
562	City of Somerton - Dispatchers	23,701	21,027	35,952	35,715	(14,925)	(14,688)	171.0%	169.9%
563	Department of Public Safety - Dispatchers	382,325	372,079	217,812	216,377	154,267	155,702	58.5%	58.2%
564	Department of Public Safety - Detention	38,758	30,563	11,012	10,939	19,551	19,624	36.0%	35.8%
575	Administrative Office of the Courts	16,077,489	14,864,278	15,249,189	15,148,737	(384,911)	(284,459)	102.6%	101.9%
	Unallocated	0	0	(1)	3	1	(3)		
	TOTAL	100,551,944	93,368,976	153,410,799	152,400,221	(60,041,823)	(59,031,245)	164.3%	163.2%

APPENDIX E: SUMMARY OF HEALTH CONTRIBUTION BY EMPLOYER - TIERS 1 & 2

Employer Number	Employer Name	ER NC%	UAAL Pmt %	Calculated ER Cont.
500	Department of Corrections - Detention	0.25%	(0.25%)	0.00%
501	Dept of Juvenile Corrections - Detention	0.28%	(0.28%)	0.00%
502	Pinal County - Detention	0.29%	(0.29%)	0.00%
503	Gila County - Detention	0.29%	(0.29%)	0.00%
504	Graham County - Detention	0.27%	(0.27%)	0.00%
505	Maricopa County - Detention	0.23%	(0.23%)	0.00%
506	City of Avondale - Detention	0.14%	0.00%	0.14%
507	La Paz County - Detention	0.19%	0.25%	0.44%
510	Yuma County - Detention	0.25%	(0.25%)	0.00%
515	Pima County - Detention	0.24%	(0.24%)	0.00%
520	Apache County - Detention	0.17%	(0.17%)	0.00%
525	Cochise County - Detention	0.28%	(0.28%)	0.00%
530	Coconino County - Detention	0.19%	(0.19%)	0.00%
535	Mohave County - Detention	0.21%	(0.21%)	0.00%
540	Santa Cruz County - Detention	0.29%	(0.29%)	0.00%
545	Navajo County - Detention	0.25%	(0.25%)	0.00%
550	Yavapai County - Detention	0.20%	(0.20%)	0.00%
555	Pinal County - Dispatchers	0.31%	(0.31%)	0.00%
556	Town of Oro Valley - Dispatchers	0.21%	(0.21%)	0.00%
557	Town of Marana - Dispatchers	0.35%	(0.35%)	0.00%
558	Gila County - Dispatchers	0.21%	(0.21%)	0.00%
559	Town of Wickenburg - Dispatchers	0.00%	0.00%	0.00%
560	Graham County - Dispatchers	0.37%	(0.37%)	0.00%
561	Yavapai County - Dispatchers	0.20%	1.93%	2.13%
562	City of Somerton - Dispatchers	0.52%	(0.52%)	0.00%
563	Department of Public Safety - Dispatchers	0.31%	1.92%	2.23%
564	Department of Public Safety - Detention	0.23%	0.24%	0.47%
575	Administrative Office of the Courts	0.24%	0.00%	0.24%
	TOTAL	0.24%	(0.24%)	0.00%