

**ARIZONA PUBLIC SAFETY PERSONNEL
RETIREMENT SYSTEM**

TUBAC FIRE DISTRICT (172)

ACTUARIAL VALUATION
AS OF JUNE 30, 2022

CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING JUNE 30, 2024



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

December 2022

Board of Trustees
Arizona Public Safety Personnel Retirement System
Phoenix, AZ

Re: Actuarial Valuation Report as of June 30, 2022 for Tubac Fire District (172)

Dear Members of the Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the Arizona Public Safety Personnel Retirement System (PSPRS). 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 PSPRS and those designated or approved by the Board. It documents the valuation of the consolidated plan and provides summary information for PSPRS participating employers. This report may be provided to parties other than PSPRS 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 4 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 System 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 PSPRS through June 30, 2022 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.

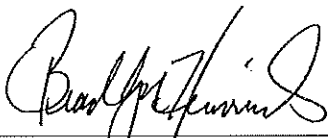
The undersigned are familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All sections of this report are considered an integral part of the actuarial 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 Public Safety Personnel Retirement System, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Arizona Public Safety Personnel Retirement System. 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

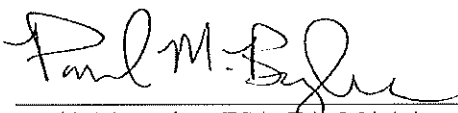
By: 
Paul M. Baugher, FSA, EA, MAAA

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I. SUMMARY OF REPORT

The regular annual actuarial valuation of the Arizona Public Safety Personnel Retirement System for the Tubac Fire District, performed as of June 30, 2022, 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, 2023. This information is contained in the section entitled “Contribution Results.”

1. Key Valuation Results

The funded status as of June 30, 2022 and the employer contribution amounts applicable to the plan/fiscal year ending June 30, 2024 are as follows:

	Tier 1 & Tier 2 Members			Tier 3 Members *		
	Pension	Health	Total	Pension	Health	Total
Employer Contribution Rate	28.76%	0.00%	28.76%	8.69%	0.12%	8.81%
Funded Status	75.0%	223.2%	76.8%	110.5%	212.1%	112.1%

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, 2021):

Valuation Date	Tier 1 & Tier 2 Members			Tier 3 Members *		
	Pension	Health	Total	Pension	Health	Total
June 30, 2021	26.35%	0.00%	26.35%	9.00%	0.12%	9.12%
June 30, 2022	28.76%	0.00%	28.76%	8.69%	0.12%	8.81%

Valuation Date	Tier 1 & Tier 2 Members			Tier 3 Members		
	Pension	Health	Total	Pension	Health	Total
June 30, 2021	72.1%	222.0%	73.9%	107.3%	210.0%	108.9%
June 30, 2022	75.0%	223.2%	76.8%	110.5%	212.1%	112.1%

* 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 System below:

Contribution Rate

	Tier 1 & Tier 2		Tier 3 Members	
	Pension	Health	Pension	Health
Contribution Rate Last Valuation	26.35%	0.00%	9.00%	0.12%
Asset Experience	0.08%	0.00%	(0.03%)	0.00%
Payroll Base	1.79%	(0.07%)	(0.11%)	(0.03%)
Liability Experience	(3.20%)	0.00%	(0.57%)	(0.01%)
Additional Contribution	0.00%	0.00%	0.00%	0.00%
Assumption/Method Change	1.68%	0.02%	(0.13%)	0.00%
Other	<u>2.06%</u>	<u>0.05%</u>	<u>0.53%</u>	<u>0.04%</u>
Contribution Rate This Valuation	28.76%	0.00%	8.69%	0.12%

Funded Status

	Tier 1 & Tier 2		Tier 3 Members	
	Pension	Health	Pension	Health
Funded Status Last Valuation	72.1%	222.0%	107.3%	210.0%
Asset Experience	(0.1%)	(0.3%)	0.6%	2.3%
Liability Experience	3.9%	23.0%	9.9%	16.4%
Additional Contribution	0.0%	0.0%	0.0%	0.0%
Assumption/Method Change	(1.3%)	(3.4%)	2.3%	(6.7%)
Other	<u>0.4%</u>	<u>(18.1%)</u>	<u>(9.6%)</u>	<u>(9.9%)</u>
Funded Status This Valuation	75.0%	223.2%	110.5%	212.1%

Assets 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, 2022 was (4.2%) for Tiers 1 and 2 and (4.6%) for Tier 3. On a smoothed, actuarial value of assets basis, however, the average return was 7.1% for Tiers 1 and 2 and 7.7% for Tier 3. These returns nearly met the 2021 assumed earnings rate for Tiers 1 and 2 of 7.3% and exceeded the 2021 assumed earnings rate for Tier 3 of 7.0%.

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 salary increases that were higher than expected.

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

Assumption / Method Change – The Board adopted the assumption recommendations provided in the 2022 experience study report, dated April 21, 2022, which updated the salary, inflation, and demographic assumptions. The Board also reduced the interest rate for Tier 1 and 2 members from 7.30% to 7.20% and continued the decrease in the payroll growth assumption from 3.00% to 2.50%.

Other – This is the combination of all other factors that could impact liabilities year-over-year, with the primary sources being changes in benefits for continuing inactive. 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 significant loss realized this year will, in the absence of other gains, put upward pressure on the contribution rate next year.

If the June 30, 2022 pension valuation results were based on the market value of assets instead of the actuarial value of assets, the pension funded percentage for Tiers 1 and 2 would be 73.0% (instead of 75.0%) and the pension employer contribution requirement would be 29.98% of payroll (instead of 28.76%).

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, 2022		June 30, 2021	
Applicable to Fiscal Year Ending	2024		2023	
	Rate	Dollar	Rate	Dollar
Pension				
Normal Cost				
Total Normal Cost	22.72%	\$ 258,829	21.17%	\$ 297,779
Employee Cost	<u>(7.65%)</u>	<u>(87,150)</u>	<u>(7.65%)</u>	<u>(107,606)</u>
Employer (Net) Normal Cost	15.07%	171,679	13.52%	190,173
Amortization of Unfunded Liability	<u>13.69%</u>	<u>155,958</u>	<u>12.83%</u>	<u>180,468</u>
Total Employer Cost (Pension)	28.76%	327,637	26.35%	370,641
Health				
Normal Cost	0.47%	5,354	0.50%	7,033
Amortization of Unfunded Liability	<u>(0.47%)</u>	<u>(5,354)</u>	<u>(0.50%)</u>	<u>(7,033)</u>
Total Employer Cost (Health)	0.00%	0	0.00%	0
Total Employer Cost (Pension + Health)	28.76%	327,637	26.35%	370,641
Total Minimum Contribution Requirement (if applicable)	8.00%		8.00%	
Alternate Contribution Rate (ACR) *	13.69%		12.83%	
Underlying Payroll (as of valuation date)		1,111,426		1,365,640

* The Alternate Contribution Rate is the sum of the positive amortization rates for Tiers 1 & 2 Pension and Health (subject to an 8% 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 8% of payroll (5% of payroll if the actual employer contribution is less than 5% for the 2006/2007 Fiscal Year) and are based on the current amortization schedule approved by the Board of Trustees for your individual plan (see "Actuarial Assumptions and Methods").

Development of Employer Contributions – Tier 3 Members

Valuation Date	June 30, 2022	June 30, 2021
Applicable to Fiscal Year Ending	2024	2023

Defined Benefit (DB) Retirement Plan

	Rate	Dollar	Rate	Dollar
Pension				
Total Normal Cost	17.37%	\$ 77,701	17.99%	\$ 63,046
Amortization of Unfunded Liability	<u>0.00%</u>	<u>0</u>	<u>0.00%</u>	<u>0</u>
Total Pension Cost	17.37%	77,701	17.99%	63,046
Employee (EE) Pension Cost	8.69%	38,851	9.00%	31,523
Employer (ER) Pension Cost	8.69%	38,851	9.00%	31,523
Health				
Total Normal Cost	0.24%	1,074	0.24%	841
Amortization of Unfunded Liability	<u>0.00%</u>	<u>0</u>	<u>0.00%</u>	<u>0</u>
Total Health Cost	0.24%	1,074	0.24%	841
Employee (EE) Health Cost	0.12%	537	0.12%	421
Employer (ER) Health Cost	0.12%	537	0.12%	421
Total				
Total Calculated Tier 3 Required EE/ER Individual Cost	8.81%	39,388	9.12%	31,944
Board Approved Tier 3 Required EE/ER Individual Cost ¹	9.56%	42,765	9.94%	34,835
ER Legacy Cost of Tiers 1 & 2 Amort of Unfunded Liabilities ²	13.69%	61,240	12.83%	44,962
Total Calculated Tier 3 Required ER Defined Benefit Cost	22.50%	100,628	21.95%	76,906
Total Board Approved Tier 3 Required ER Defined Benefit Cost	23.25%	104,004	22.77%	79,797
Underlying Payroll (as of valuation date)		436,420		340,241

¹ The "Board Approved" cost was reset with the June 30, 2022 valuation to be the lesser of 1) the calculated rate plus 0.75%, or 2) the prior Board approved rate. Going forward, the funding policy will reflect the approach in setting the costs and will be reviewed annually.

² Pursuant to ARS § 38-843(B), 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, 2022	June 30, 2021
Applicable to Fiscal Year Ending	2024	2023

Defined Contribution (DC) Retirement Plan

	Rate	Dollar	Rate	Dollar
Tier 2 & 3 DB / Non-Social Security				
Employee Cost	3.00%		3.00%	
Employer Cost ¹	3.00%		3.00%	
Tier 3 DC Only				
Employee Cost	9.00%	\$ 0	9.00%	\$ 0
Employee Health Subsidy Program Cost	0.17%	0	0.19%	0
Employee Disability Program Cost	<u>1.43%</u>	<u>0</u>	<u>1.66%</u>	<u>0</u>
Total Employee Cost	10.60%	0	10.85%	0
Employer Cost	9.00%	0	9.00%	0
Employer Health Subsidy Program Cost	0.17%	0	0.19%	0
Employer Disability Program Cost	<u>1.43%</u>	<u>0</u>	<u>1.66%</u>	<u>0</u>
Total Employer Cost (before Legacy)	10.60%	0	10.85%	0
ER Legacy Cost of Tiers 1 & 2 Amort of Unfunded Liabilities ²	13.69%	0	12.83%	0
Total Employer Cost	24.29%	0	23.68%	0
Underlying Payroll (as of valuation date)		0		0

¹ Employer rate is 4% for Tier 2 members for a period of time depending on the individual's membership date.

² Pursuant to ARS § 38-843(B), 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.

Contribution Rate Summary

	Tier 1		Tier 2		Tier 3		
	7/1/1968	7/20/2011	1/1/2012		7/1/2017		
Membership Date On or After							
Participates in Social Security	N/A	N/A	Yes	No	Yes	No	N/A
Available Retirement Plan ¹	DB Only	DB Only	DB Only	Hybrid	DB Only	Hybrid	DC Only
Employee Contribution Rate							
PSPRS DB Rate	7.65%	11.65%	11.65%	11.65%	9.56%	9.56%	
PSPRS DC Rate				3.00%		3.00%	9.00%
Employer Health Subsidy Program Cost							0.17%
PSPDCRP Disability Program Rate							1.43%
Total EE Contribution Rate	7.65%	11.65%	11.65%	14.65%	9.56%	12.56%	10.60%
Employer Contribution Rate							
PSPRS DB Normal Cost	15.54%	15.54%	15.54%	15.54%	9.56%	9.56%	
PSPRS DB Tier 1 & 2 Legacy Cost ²	13.22%	13.22%	13.22%	13.22%	13.69%	13.69%	13.69%
PSPRS DC Rate ³				4.00%		3.00%	9.00%
Employer Health Subsidy Program Cost							0.17%
PSPDCRP Disability Program Rate							1.43%
Total ER Contribution Rate	28.76%	28.76%	28.76%	32.76%	23.25%	26.25%	24.29%

¹ Employers that pay into Social Security on behalf of their members do not participate in the Hybrid Plan.

² Per statute (ARS § 38-843(B)), any positive unfunded liability for Tiers 1 and 2 is to be applied to all Tier 3 (DB and DC) payrolls.

³ The 4.00% employer match for Tier 2 Hybrid members is for a short period of time depending on the membership date of the employee at which point the rate will change to 3.00% (ARS § 38-868(C)).

Exhibit summarizes employee and employer contributions based on Statute and the results of June 30, 2022 actuarial valuation. Pension and health components are combined, where applicable.

Impact of Additional Contributions

	Additional Contribution (000s)										
	\$0	\$100	\$200	\$300	\$400	\$500	\$600	\$700	\$800	\$900	\$1,000
Impact On											
Funded Status - June 30, 2022	75.0%	75.9%	76.7%	77.6%	78.5%	79.3%	80.2%	81.0%	81.9%	82.8%	83.6%
FYE 2024 Contribution Rate	28.76%	28.25%	27.73%	27.22%	26.71%	26.19%	25.68%	25.16%	24.65%	24.14%	23.62%

Table shows the hypothetical change in the funded status and contribution rate from the June 30, 2022 actuarial valuation results for Tiers 1 & 2 if an additional contribution of the amount shown had been made to the Fund on June 30, 2022. This illustration can help estimate the impact of contributing additional monies to the fund in the future.

Historical Summary of Employer Rates

Valuation Date June 30	Fiscal Year Ending June 30	Pension			Health		
		Normal Cost	Unfunded Amortization	Total	Normal Cost	Unfunded Amortization	Total
TIERS 1 & 2	2018	14.60%	9.99%	24.59%	0.45%	(0.42%)	0.03%
	2019	17.14%	10.19%	27.33%	0.64%	(0.64%)	0.00%
	2020	15.10%	11.06%	26.16%	0.54%	(0.54%)	0.00%
	2021	13.52%	12.83%	26.35%	0.50%	(0.50%)	0.00%
	2022	15.07%	13.69%	28.76%	0.47%	(0.47%)	0.00%
TIER 3 ¹	2020	9.68%	0.00%	9.68%	0.26%	0.00%	0.26%
	2021	9.68%	0.00%	9.68%	0.26%	0.00%	0.26%
	2022	9.68%	0.00%	9.68%	0.26%	0.00%	0.26%
	2023	9.68%	0.00%	9.68%	0.26%	0.00%	0.26%
	2022 ²	8.69%	0.00%	8.69%	0.12%	0.00%	0.12%
2022	9.30%	0.00%	9.30%	0.26%	0.00%	0.26%	

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, 2022	June 30, 2021
Pension		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	\$ 5,427,700	\$ 5,265,091
DROP Members	2,075,030	1,109,230
Vested Members	276,821	89,739
Active Members	<u>5,623,518</u>	<u>6,936,385</u>
Total Actuarial Present Value of Benefits	13,403,069	13,400,445
Actuarial Accrued Liability (AAL)		
All Inactive Members	7,779,551	6,464,060
Active Members	<u>3,833,672</u>	<u>4,793,045</u>
Total Actuarial Accrued Liability	11,613,223	11,257,105
Actuarial Value of Assets (AVA)	8,711,005	8,112,932
Unfunded Actuarial Accrued Liability	2,902,218	3,144,173
PVB Funded Ratio (AVA / PVB)	65.0%	60.5%
AAL Funded Ratio (AVA / AAL)	75.0%	72.1%
Health		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	\$ 0	\$ 0
DROP Members	40,405	16,042
Active Members	<u>145,225</u>	<u>173,445</u>
Total Present Value of Benefits	185,630	189,487
Actuarial Accrued Liability (AAL)		
All Inactive Members	40,405	16,042
Active Members	<u>105,382</u>	<u>120,973</u>
Total Actuarial Accrued Liability	145,787	137,015
Actuarial Value of Assets (AVA)	325,425	304,111
Unfunded Actuarial Accrued Liability	(179,638)	(167,096)
PVB Funded Ratio (AVA / PVB)	175.3%	160.5%
AAL Funded Ratio (AVA / AAL)	223.2%	222.0%

Health liabilities were increased by \$5,165 under the lateral transfer methodology. Pension liabilities were not impacted.

Liabilities and Funded Ratios by Benefit - Tier 3

	June 30, 2022	June 30, 2021
Pension		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	\$ 944,111	\$ 440,356
Vested Members	3,654,003	1,850,254
Active Members	<u>403,144,180</u>	<u>288,612,448</u>
Total Actuarial Present Value of Benefits	407,742,294	290,903,058
Actuarial Accrued Liability (AAL)		
All Inactive Members	4,598,114	2,290,610
Active Members	<u>64,341,090</u>	<u>40,442,927</u>
Total Actuarial Accrued Liability	68,939,204	42,733,537
Actuarial Value of Assets (AVA)	76,171,857	45,863,401
Unfunded Actuarial Accrued Liability	(7,232,653)	(3,129,864)
PVB Funded Ratio (AVA / PVB)	18.7%	15.8%
AAL Funded Ratio (AVA / AAL)	110.5%	107.3%
Health		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	0	0
Active Members	<u>5,807,514</u>	<u>3,998,992</u>
Total Present Value of Benefits	5,807,514	3,998,992
Actuarial Accrued Liability (AAL)		
All Inactive Members	0	0
Active Members	<u>1,075,733</u>	<u>680,877</u>
Total Actuarial Accrued Liability	1,075,733	680,877
Actuarial Value of Assets (AVA)	2,281,928	1,429,806
Unfunded Actuarial Accrued Liability	(1,206,195)	(748,929)
PVB Funded Ratio (AVA / PVB)	39.3%	35.8%
AAL Funded Ratio (AVA / AAL)	212.1%	210.0%

The liabilities shown on this page are the liabilities for all Tier 3 members grouped together in the Risk Sharing group. These liabilities are NOT the liabilities solely for Tubac Fire District Tier 3 members.

Derivation of Experience (Gain)/Loss

	Tiers 1 & 2		Tier 3	
	Pension	Health	Pension	Health
(1) Unfunded Actuarial Accrued Liability as of June 30, 2021	3,144,173	(167,096)	(3,129,864)	(748,929)
(2) Normal Cost Developed in Last Valuation	190,173	7,033	10,742,365	143,232
(3) Actual Contributions	346,743	0	13,287,994	708,578
(4) Expected Interest On (1), (2), and (3)	230,974	(11,685)	79,243	(69,623)
(5) Expected Unfunded Actuarial Accrued Liability as of June 30, 2022 (1)+(2)-(3)+(4)	3,218,577	(171,748)	(5,596,250)	(1,383,898)
(6) Changes to UAAL Due to Assumptions, Methods and Benefits	194,107	2,169	(1,466,606)	33,112
(7) Change to UAAL Due to Actuarial (Gain)/Loss	<u>(510,466)</u>	<u>(10,059)</u>	<u>(169,797)</u>	<u>144,591</u>
(8) Unfunded Actuarial Accrued Liability as of June 30, 2022	2,902,218	(179,638)	(7,232,653)	(1,206,195)

Amortization of Unfunded Liabilities - Tiers 1 & 2

	Date Established	Outstanding Balance ¹	Years Remaining	Amortization Rate
Pension	06/30/2019	2,620,208	25	11.12%
	06/30/2021	715,571	25	3.77%
	06/30/2022	<u>(228,427)</u>	25	<u>(1.20%)</u>
	Total	3,107,352		13.69%
Health	06/30/2019	0	10	0.00%
	06/30/2021	0	10	0.00%
	06/30/2022	<u>(139,795)</u>	10	<u>(1.21%)</u>
	Total	(139,795)		(1.21%)

Amortization of Unfunded Liabilities - Tier 3

	Date Established	Outstanding Balance	Years Remaining	Amortization Rate ²
Pension	06/30/2018	133,264	6	0.02%
	06/30/2019	(1,174,488)	7	(0.12%)
	06/30/2020	783,926	8	0.07%
	06/30/2021	(2,629,391)	9	(0.23%)
	06/30/2022	<u>(4,345,964)</u>	10	<u>(0.35%)</u>
	Total	(7,232,653)		0.00%
Health	06/30/2018	(2,826)	6	0.00%
	06/30/2019	(107,381)	7	(0.01%)
	06/30/2020	(199,078)	8	(0.02%)
	06/30/2021	(379,902)	9	(0.03%)
	06/30/2022	<u>(517,008)</u>	10	<u>(0.04%)</u>
	Total	(1,206,195)		0.00%

¹ By Statute, any unfunded liability is adjusted to remove any "maintenance of effort" balance included in the assets. The current balance is \$205,134.

² By Statute, negative total amortization rates are not subtracted in Tier 3 rate calculations.

IV. ASSET SUPPORT

Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2022 Market Value Basis

	Tiers 1 & 2		Tier 3	
	Pension	Health	Pension	Health
Additions				
Contributions				
Member Contributions	\$ 131,683,526	\$ 0	\$ 29,063,146	\$ 0
Employer Contributions	3,012,703,558	0	29,064,040	0
Health Insurance Contributions	<u>0</u>	<u>3,802,966</u>	<u>0</u>	<u>1,407,709</u>
Total Contributions	3,144,387,084	3,802,966	58,127,186	1,407,709
Investment Income				
Net Increase in Fair Value	(701,182,251)	(21,695,499)	(8,741,820)	(280,480)
Interest and Dividends	126,401,305	3,911,022	1,575,879	50,562
Other Income	87,059,416	2,683,297	1,085,391	34,690
Less Investment Expenses	<u>(22,862,270)</u>	<u>(565,977)</u>	<u>(285,030)</u>	<u>(7,317)</u>
Net Investment Income	(510,583,800)	(15,667,157)	(6,365,580)	(202,545)
Non-investment Income	986,277	0	12,296	0
Transfers In	1,279,046	0	30,523	0
Total Additions	2,636,068,607	(11,864,191)	51,804,425	1,205,164
Deductions				
Distributions to Members				
Benefit Payments	1,014,242,856	0	151,291	0
Health Insurance Subsidy	0	17,298,612	0	0
Refund of Contributions	<u>13,520,140</u>	<u>0</u>	<u>1,255,336</u>	<u>0</u>
Total Distributions	1,027,762,996	17,298,612	1,406,627	0
Administrative Expenses	9,180,607	278,897	114,460	3,606
Transfers Out	780,862	0	0	0
Other	0	0	0	0
Total Deductions	1,037,724,465	17,577,509	1,521,087	3,606
Net Increase / (Decrease)	1,598,344,142	(29,441,700)	50,283,338	1,201,558
Net Position Held in Trust				
Prior Valuation	11,444,452,554	403,467,753	112,339,143	3,633,858
Beginning of the Year Adjustment	0	0	0	0
End of the Year	13,042,796,696	374,026,053	162,622,481	4,835,416

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

A. Investment Income	
A1. Actual Investment Income	\$ (519,764,407)
A2. Expected Amount for Immediate Recognition	911,394,336
A3. Amount Subject to Amortization	(1,431,158,743)

	Year Ended June 30						
	2022	2023	2024	2025	2026	2027	2028
B. Amortization Schedule							
2022 Experience (A3 / 7)	(204,451,249)	(204,451,249)	(204,451,249)	(204,451,249)	(204,451,249)	(204,451,249)	(204,451,249)
2021 Experience	238,978,744	238,978,744	238,978,744	238,978,744	238,978,744	238,978,744	238,978,745
2020 Experience	(68,882,158)	(68,882,158)	(68,882,158)	(68,882,158)	(68,882,158)	(68,882,160)	
2019 Experience	(22,859,275)	(22,859,275)	(22,859,275)	(22,859,275)	(22,859,275)		
2018 Experience	(6,266,349)	(6,266,349)	(6,266,351)				
2017 Experience	33,380,149	33,380,148					
2016 Experience	(64,250,889)						
Total Amortization	(94,351,027)	(30,100,139)	(63,480,289)	(57,213,938)	(34,354,665)	34,527,496	(204,451,249)

	Total	
	Total	Employer
C. Actuarial Value of Assets		
C1. Actuarial Value of Assets, June 30, 2021	10,462,717,622	
C2. Non-investment Net Cash Flow	2,118,108,549	
C3. Preliminary Actuarial Value of Assets, June 30, 2022 (A2 + B + C1 + C2)	13,397,869,480	
C4. Market Value of Assets, June 30, 2022	13,042,796,696	8,480,144
C5. Final Actuarial Value of Assets, June 30, 2022 (C3 Within 20% Corridor of C4)	13,397,869,480	8,711,005

D. Rates of Return	
D1. Market Value Rate of Return	(4.2%)
D2. Actuarial Value Rate of Return	7.1%

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

A. Investment Income	
A1. Actual Investment Income	\$ (15,946,054)
A2. Expected Amount for Immediate Recognition	28,969,231
A3. Amount Subject to Amortization	(44,915,285)

B. Amortization Schedule	Year Ended June 30				
	2022	2023	2024	2025	2026
2022 Experience (A3 / 7)	(6,416,469)	(6,416,469)	(6,416,469)	(6,416,469)	(6,416,469)
2021 Experience	9,257,478	9,257,478	9,257,478	9,257,478	9,257,478
2020 Experience	(2,898,713)	(2,898,713)	(2,898,713)	(2,898,713)	(2,898,716)
2019 Experience	(1,075,569)	(1,075,569)	(1,075,569)	(1,075,572)	
2018 Experience	(304,653)	(304,653)	(304,656)		
2017 Experience	1,532,136	1,532,136			
2016 Experience	(3,220,881)				
Total Amortization	(3,126,671)	94,210	(1,437,929)	(1,133,276)	(57,707)
					2,841,012
					(6,416,471)

C. Actuarial Value of Assets	Total	
	Total	Employer
C1. Actuarial Value of Assets, June 30, 2021	367,789,300	
C2. Non-investment Net Cash Flow	(13,495,646)	
C3. Preliminary Actuarial Value of Assets, June 30, 2022 (A2 + B + C1 + C2)	380,136,214	
C4. Market Value of Assets, June 30, 2022	374,026,053	320,194
C5. Final Actuarial Value of Assets, June 30, 2022 (C3 Within 20% Corridor of C4)	380,136,214	325,425

D. Rates of Return	
D1. Market Value Rate of Return	(4.0%)
D2. Actuarial Value Rate of Return	7.2%

Development of Pension Actuarial Value of Assets - Tiers 3

A. Investment Income	
A1. Actual Investment Income	\$ (6,480,040)
A2. Expected Amount for Immediate Recognition	9,816,857
A3. Amount Subject to Amortization	(16,296,897)

B. Amortization Schedule	Year Ended June 30		
	2022	2023	2024
2022 Experience (A3 / 5)	(3,259,379)	(3,259,379)	(3,259,379)
2021 Experience	3,551,936	3,551,936	3,551,936
2020 Experience	(351,296)	(351,296)	(351,294)
2019 Experience	44,435	44,437	
2018 Experience	(208)		
Total Amortization	(14,512)	(14,302)	(58,737)
			292,559
			(3,259,381)

C. Actuarial Value of Assets	Total	
	Employer	Employer
C1. Actuarial Value of Assets, June 30, 2021	99,096,619	
C2. Non-investment Net Cash Flow	56,763,378	
C3. Preliminary Actuarial Value of Assets, June 30, 2022 (A2 + B + C1 + C2)	165,662,342	
C4. Market Value of Assets, June 30, 2022	162,622,481	74,774,123
C5. Final Actuarial Value of Assets, June 30, 2022 (C3 Within 20% Corridor of C4)	165,662,342	76,171,857

D. Rates of Return	
D1. Market Value Rate of Return	(4.6%)
D2. Actuarial Value Rate of Return	7.7%

Development of Health Actuarial Value of Assets - Tiers 3

A. Investment Income	
A1. Actual Investment Income	\$ (206,151)
A2. Expected Amount for Immediate Recognition	302,807
A3. Amount Subject to Amortization	(508,958)

B. Amortization Schedule	Year Ended June 30			
	2022	2023	2024	2025
2022 Experience (A3 / 5)	(101,792)	(101,792)	(101,792)	(101,792)
2021 Experience	128,963	128,963	128,963	128,961
2020 Experience	(10,555)	(10,555)	(10,557)	
2019 Experience	1,507	1,508		
2018 Experience	(165)			
Total Amortization	17,958	18,124	16,614	27,169
				(101,790)

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2021	3,146,825	
C2. Non-investment Net Cash Flow	1,407,709	
C3. Preliminary Actuarial Value of Assets, June 30, 2022 (A2 + B + C1 + C2)	4,875,299	
C4. Market Value of Assets, June 30, 2022	4,835,416	2,263,260
C5. Final Actuarial Value of Assets, June 30, 2022 (C3 Within 20% Corridor of C4)	4,875,299	2,281,928

D. Rates of Return	
D1. Market Value Rate of Return	(4.8%)
D2. Actuarial Value Rate of Return	8.3%

V. MEMBER STATISTICS

Valuation Data Summary

	June 30, 2022		June 30, 2021	
	Tiers 1 & 2	Tier 3	Tiers 1 & 2	Tier 3
Actives				
Number	12	7	16	6
Average Current Age	43.1	31.6	44.3	31.1
Average Age at Employment	29.6	29.8	30.9	28.8
Average Past Service	13.5	1.8	13.4	2.3
Average Annual Salary	\$66,948	\$58,744	\$67,345	\$53,649
Actives (transferred)				
Number	3	0	3	0
Average Current Age	48.3	N/A	45.0	N/A
Average Age at Employment	35.2	N/A	32.9	N/A
Average Past Service	13.1	N/A	12.1	N/A
Average Annual Salary	\$86,243	N/A	\$77,209	N/A
Retirees				
Number	7	0	7	0
Average Current Age	60.1	N/A	59.1	N/A
Average Annual Benefit	\$37,966	N/A	\$37,222	N/A
Drop Retirees				
Number	3	N/A	1	N/A
Average Current Age	60.2	N/A	56.5	N/A
Average Annual Benefit	\$42,185	N/A	\$64,346	N/A
Beneficiaries				
Number	0	0	0	0
Average Current Age	N/A	N/A	N/A	N/A
Average Annual Benefit	N/A	N/A	N/A	N/A
Disability Retirees				
Number	3	0	3	0
Average Current Age	57.2	N/A	56.2	N/A
Average Annual Benefit	\$33,615	N/A	\$32,956	N/A
Inactive / Vested				
Number	2	1	1	0
Average Current Age	50.4	41.0	57.8	N/A
Average Accumulated Contributions	\$52,958	\$20,448	\$41,415	N/A
Total Number	30	8	31	6
Former Members (transferred)	3	1	2	0

Active Counts and Pay Summary - Tiers 1 & 2

Age	Past Service						Total Count	Total Pay	Average Pay
	0-4	5-9	10-14	15-19	20-24	25-29			
<20	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0
30 - 34	1	1	1	0	0	0	3	179,621	59,874
35 - 39	0	1	1	1	0	0	3	188,212	62,737
40 - 44	0	0	1	3	0	0	4	288,454	72,114
45 - 49	0	0	0	1	0	0	1	71,243	71,243
50 - 54	0	0	1	0	0	0	1	63,395	63,395
55 - 59	0	0	0	1	0	0	1	66,857	66,857
60 - 64	0	0	1	1	0	0	2	204,329	102,165
65+	0	0	0	0	0	0	0	0	0
Total	1	2	5	7	0	0	15	1,062,111	70,807

Active Counts and Pay Summary - Tier 3

Age	Past Service						Total Count	Total Pay	Average Pay
	0-4	5-9	10-14	15-19	20-24	25-29			
<20	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0
25 - 29	3	0	0	0	0	0	3	203,924	67,975
30 - 34	4	0	0	0	0	0	4	207,286	51,822
35 - 39	0	0	0	0	0	0	0	0	0
40 - 44	0	0	0	0	0	0	0	0	0
45 - 49	0	0	0	0	0	0	0	0	0
50 - 54	0	0	0	0	0	0	0	0	0
55 - 59	0	0	0	0	0	0	0	0	0
60 - 64	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	0	0
Total	7	0	0	0	0	0	7	411,210	58,744

In-Payment Counts and Benefit Summary – All Tiers

Age	Count	Average Annual Benefit
< 40	0	0
40 - 44	0	0
45 - 49	1	38,056
50 - 54	3	34,554
55 - 59	1	34,037
60 - 64	2	32,429
65 - 69	2	46,330
70 - 74	1	33,335
75 - 79	0	0
80 - 84	0	0
85 - 89	0	0
90 - 94	0	0
95 - 99	0	0
100+	0	0
Total	10	36,661

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