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**TUCSON AIRPORT AUTHORITY | Finance and Risk Management Council**  
**Monday, August 19, 2024 | 3:00 p.m. | [Remote Only](#)**

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Pursuant to [A.R.S. § 38-431.02](#), notice is hereby given to the members of the Tucson Airport Authority (TAA) and to the public that the **Finance and Risk Management Council** will hold a meeting open to the public on **Monday, August 19, 2024, beginning at 3:00 p.m.** Council members and the public may attend remotely via the Microsoft Teams online meeting platform.

Members of the public interested in observing the proceedings may do so through Microsoft Teams. Click [HERE](#) to be taken to the registration form. Upon registering, you will receive an email confirmation containing the hyperlink, telephone number, and access code to join the meeting online or by phone.

The agenda for the meeting is as follows:

**1. CALL TO ORDER | ROLL CALL**

- |   |   |                                     |
|---|---|-------------------------------------|
| <input type="checkbox"/> Tim Overton, Chair | <input type="checkbox"/> Omar Mireles, Vice Chair | <input type="checkbox"/> Rob Draper |
| <input type="checkbox"/> Ricardo Platt      | <input type="checkbox"/> Tony Penn                | <input type="checkbox"/> Angela Gee |
| <input type="checkbox"/> Lydia Aranda       |   |                                     |

**2. APPROVAL OF MINUTES**

Approve the minutes of the Finance and Risk Management Council meeting held on October 9, 2023.

**3. PRESIDENT/CEO REPORT**

State of the Industry | Update

**4. PRESENTATION/DISCUSSION**

**a. Tucson Airport Authority Operating Budget for FY 2025**

The Council will receive a presentation regarding the Tucson Airport Authority's proposed operating budget for the fiscal year beginning on October 1, 2024, and ending on September 30, 2025.

**b. Tucson Airport Authority PSPRS Funding Policy for FY 2025**

The Council will receive a presentation regarding the Tucson Airport Authority's proposed Public Safety Personnel Retirement System (PSPRS) Pension Funding Policy for the fiscal year beginning on October 1, 2024, and ending on September 30, 2025.

**5. ACTION ITEMS**

**a. Tucson Airport Authority Operating Budget for FY 2025**

The Council will consider and may vote on whether to recommend to the Board of Directors that it approve as presented the Tucson Airport Authority's proposed operating budget for the fiscal year beginning on October 1, 2024, and ending on September 30, 2025.

**b. Tucson Airport Authority PSPRS Funding Policy for FY 2025**

The Council will consider and may vote on whether to recommend to the Board of Directors that it approve as presented the Tucson Airport Authority's proposed Public Safety Personnel Retirement System (PSPRS) Funding Policy for the fiscal year beginning on October 1, 2024, and ending on September 30, 2025.

**6. ADJOURN**

**TUCSON AIRPORT AUTHORITY | Finance and Risk Management Council  
Monday, October 9, 2023 | 3:00 p.m. | Remote Only**

**THIS ADVISORY COUNCIL MEETING WAS HELD VIRTUALLY, WITH COUNCIL MEMBERS ATTENDING VIA MICROSOFT TEAMS OR TELEPHONICALLY. MEMBERS OF THE PUBLIC WHO COMPLETED A REGISTRATION FORM RECEIVED A LINK TO VIEW THE MEETING VIA MICROSOFT TEAMS OR TO LISTEN TELEPHONICALLY.**

**1. CALL TO ORDER | ROLL CALL**

Chair Overton called the meeting to order at 3:15 p.m.

**Council Members Present:** Chair Tim Overton, Council Member Mike Hannley, Council Member Rob Draper, and Council Member Angela Gee

*\*Council Member Hannley attended the meeting via telephone.*

**Council Members Absent:** Vice Chair Omar Mireles, Council Member Ricardo Platt, and Council Member Tony Penn

**Staff Present:** President/CEO Danette Bewley, Executive Vice President/Chief Operating Officer Bruce Goetz, Vice President/General Counsel Christopher Schmaltz, Vice President/Chief Financial Officer Kim Allison, Deputy General Counsel Kim Outlaw Ryan, and TAA Clerk Byron Jones

**2. APPROVAL OF MINUTES**

**Motion by Council Member Hannley, seconded by Council Member Draper, to approve the minutes of the Finance and Risk Management Council meeting held on August 22, 2023. The motion carried by the following vote:**

**Ayes 4 Chair Overton, Council Member Hannley, Council Member Draper, and Council Member Gee**

**Nays 0**

**3. PRESIDENT/CEO REPORT**

**a. State of the Industry | Update**

President/CEO Danette Bewley reported that the United States Congress continues to work towards approving a final budget. Included in this year's appropriations are renewal of the Federal Aviation Administration (FAA) Reauthorization Act and continued funding of the Transportation Security

Administration (TSA), both of which are essential elements in the aviation system. Tucson International Airport (TUS) is doing well overall.

#### 4. ACTION ITEM

##### **FY 2024 Operating Budget Amendment | TSA Mandate**

Executive Vice President/COO Bruce Goetz and Vice President/Chief Financial Officer Kim Allison presented.

##### Background:

- The Transportation Security Administration (TSA) has, for the past decade, attempted to shift additional responsibilities for security and their associated costs onto airports. The TAA disagrees with these unfunded mandates and believes strongly that the TSA should continue to be responsible for screening of both employees and passengers. However, the TAA must comply with federal security regulations to maintain its certification as an Airport Operator.
- The new regulation requires the TAA to conduct random screenings of security badge holders who access to the airport's sterile area. These security checks can occur at any door and at any time during a 24-hour period. To meet these requirements, the TAA must hire additional police officers and public safety officers. In addition to salary and benefits, there will be costs related to uniforms, boots, and equipment. The TAA will also need to purchase additional vehicles to transport the employees to the various locations.
- The TSA issued a Notice of Informed Compliance on September 6, 2023, which went into effect on September 25, 2023. Due to the timing of the notice, staff was unable to factor these costs into the FY 2024 budget approved by the Board of Directors.
- Airport Operators have until September 25, 2024, to be in full compliance.

##### Fiscal Impact:

- There are no changes to the projected revenues as presented to the Board during the FY 2024 budget presentation. An additional line item will be added to the budget specific to the TSA mandate. To raise the revenue necessary to pay for the additional personnel, the landing fee will increase from \$1.50 to \$2.02 per 1,000 pounds maximum gross weight.
- The TAA discussed the landing fee increase with the Airport and Airline Affairs Committee. The airlines recognized the necessity of increasing the landing fee. The budget amendment was also presented to the TAA's Finance and Risk

Management Council, which voted to recommend to the Board that it approve the budget amendment.

**Motion by Council Member Hannley, seconded by Council Member Draper, to recommend to the Board of Directors that it adopt a resolution approving an amendment to the FY 2024 Operating Budget in the amount of \$1,101,501 to facilitate compliance with the TSA employee screening mandate effective September 25, 2023. The motion carried by the following vote:**

**Ayes 4 Chair Overton, Council Member Draper, Council Member Penn, and Council Member Gee**

**Nays 0**

**5. ADJOURN**

There being no further business to discuss, Chair Overton adjourned the meeting at 3:33 p.m.

**PREPARED BY:**

\_\_\_\_\_  
Byron Jones, TAA Clerk

Date: \_\_\_\_\_



## **FY 2025 TAA Operating Budget**

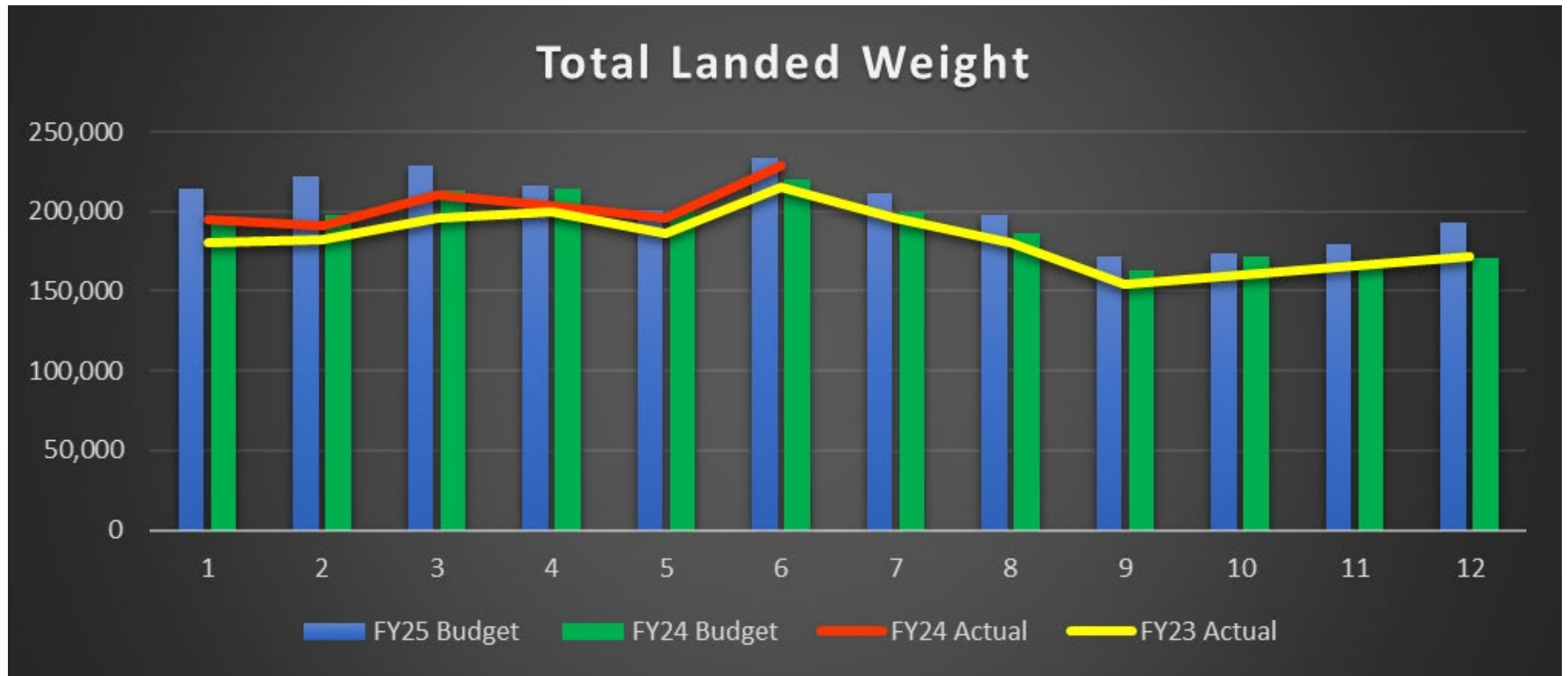
Finance and Risk Management Council Meeting

August 19, 2024



# FY2025 Budget

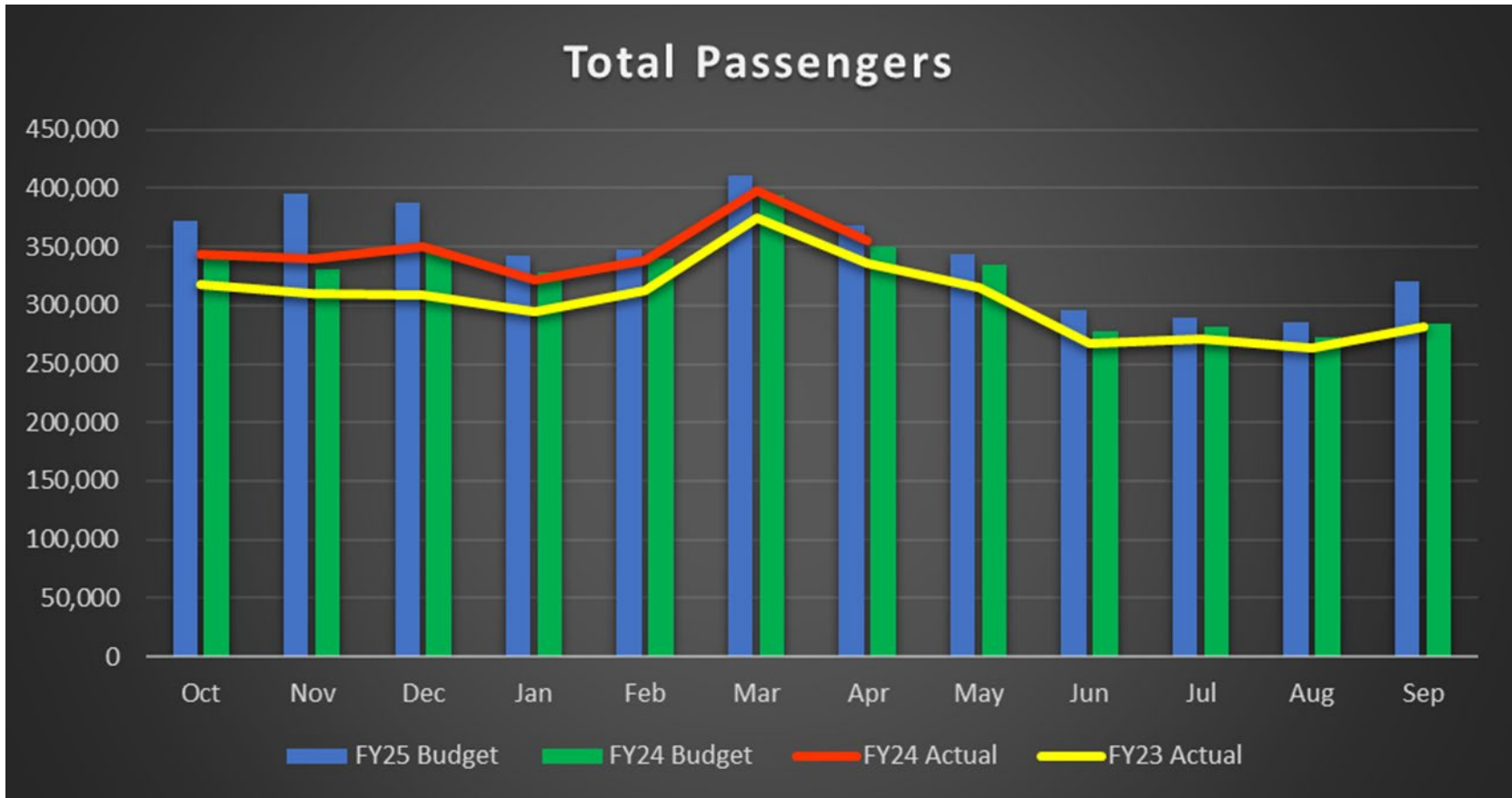
# FY25 Landed Weight Budget



- Forecasted 10.72% increase in total landed weight over FY 2024
- 5.7% increase YTD in actual landed weight year over year Oct-Apr



# FY25 Passenger Budget



- 7.1% increase in forecasted passengers FY24 – FY25
- 8.6% increase YTD in actual passengers year over year Oct-Apr

# YTD 2024 Flight & Passenger Activity

	<u>FY2024</u>	<u>FY2023</u>	<u>FY2022</u>
<u>Nine Months Year-To-Date</u>			
Total Passengers	3,052,748	2,836,550	2,558,711
Average Load Factor	88.5%	85.2%	86.5%
Average Daily Seat Capacity	6,593	6,248	5,496
Average Seat Count per Departure	125.5	140.1	127.6

# FY25 Budget Rate Trend Proposal

**Tucson Airport Authority  
Terminal Rate Trend - FY2025 Proposal**

Space/Charge Type	Fee Basis	FY 2024	FY2025 Proposed
<i>Rates effective October 1,</i>		<b>2023</b>	<b>2024</b>
Ticket counter, kiosk, phone bank	per sq/ft per year	\$ 92.01	\$ 100.29
Airline ticket office (ATO)	per sq/ft per year	\$ 92.01	\$ 100.29
Baggage makeup	per sq/ft per year	\$ 30.66	\$ 33.42
Baggage storage	per sq/ft per year	\$ 92.01	\$ 100.29
Operations area	per sq/ft per year	\$ 78.18	\$ 85.22
Baggage claim	per sq/ft per year	\$ 87.26	\$ 95.11
TSA EDS Bag Screening Pods	per sq/ft per year	\$ 55.22	\$ 60.18
Holdroom per gate	per gate per year	\$ 134,167.77	\$ 146,242.87
Aircraft parking position at leased gate	per position per year	\$ 9,625.68	\$ 10,491.99

TAA-owned jet bridge at leased gate/2	per bridge per month	\$ 4,316.76	\$ 4,705.27
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# FY 2025 Landing Fee Requirement

Description	2025 Budget	2024 Forecast	2024 Budget	2023 Actual - Unaudited	2025 Budget vs 2024 Budget Dollar Incr/(Decr)	% Inc (% Dec)
Net Operating Income	\$ 5,135,202	\$ 10,935,281	\$ 2,451,659	\$ 7,919,283	\$ 2,683,543	24.5%
<b>Debt Service</b>						
Airport Revenue Bonds	\$ 3,998,174	\$ 3,996,652	\$ 3,996,652	\$ 3,996,806	\$ 1,522	0.0%
PFC Payment	(3,998,174)	(3,996,652)	(3,996,652)	(3,996,806)	(1,522)	0.0%
Special Reserve Advances	2,900,510	4,013,059	4,013,059	3,728,357	(1,112,549)	-27.7%
Insurance Reserve Advances	956,829	956,829	956,829	956,829	-	0.0%
<b>Total Debt Service</b>	<b>\$ 3,857,339</b>	<b>\$ 4,969,888</b>	<b>\$ 4,969,888</b>	<b>\$ 4,685,186</b>	<b>\$ (1,112,549)</b>	<b>-22.4%</b>
<b>Fund Transfers</b>						
Operations & Maintenance Reserve	1,675,825	1,096,829	3,215,192	(4,017)	\$ (1,539,368)	-47.9%
Capital Improvement Fund	1,654,808	1,576,007	1,576,007	1,500,959	78,801	5.0%
Special Reserve Fund - Industrial Revenue 52%	1,867,320	1,769,560	1,753,553	1,711,387	113,767	6.5%
Maintenance Reserve Fund	1,500,000	500,000	500,000	-	1,000,000	200.0%
Common Area Major Maintenance Funds	143,670	143,670	144,899	143,670	(1,229)	-0.8%
Airfield Safety Enhancement Project (ASE)	(29,549,144)	(29,237,344)	(40,165,058)	(65,953)	10,615,914	-26.4%
<b>Total Fund Transfers</b>	<b>\$ (22,707,522)</b>	<b>\$ (24,151,277)</b>	<b>\$ (32,975,407)</b>	<b>\$ 3,286,047</b>	<b>\$ 10,267,885</b>	<b>-31.1%</b>

# FY 2025 Landing Fee

Description	2025 Budget	2024 Forecast	2024 Budget	2023 Actual - Unaudited	2025 Budget vs 2024 Budget Dollar Incr/(Decr)	% Inc (% Dec)
Capital Requirements						
Capital Improvement Projects (CIP)	28,246,269	33,654,907	33,654,907	7,917,408	\$ (5,408,638)	-16.1%
Capital Outlay	3,777,000	1,706,591	1,706,591	140,975	2,070,409	121.3%
Capitalized Major Maintenance	927,634	996,004	996,004	1,009,366	(68,370)	-6.9%
Special Funding Sources						
Capital Improvement Fund	(1,654,808)	(1,576,007)	(1,576,007)	(1,500,959)	(78,801)	5.0%
Special Reserve Fund uses	-	-	-	(4,326,766)	-	
Maintenance Reserve Fund	-	-	-	(769,394)	-	
<b>Total Capital Requirements</b>	<b>\$ 31,296,095</b>	<b>\$ 34,781,495</b>	<b>\$ 34,781,495</b>	<b>\$ 2,470,630</b>	<b>\$ (3,485,400)</b>	<b>-10.0%</b>
Signatory Landing Fee Requirement	\$ 7,310,711	\$ 4,664,825	\$ 4,324,317	\$ 2,522,579	2,645,886	61.2%
Landed Weight Signatory Airlines	2,442,078	2,313,081	2,142,102	2,198,422	128,997	6.0%
<b>Landing Fee per 1,000 lbs</b>	<b>\$2.99</b>	<b>\$2.02</b>	<b>\$2.02</b>	<b>\$1.15</b>	<b>\$0.97</b>	<b>48%</b>

# FY 2025 Funding Highlights

- \$31.6 million in Capital Requirements (CIP, CO, MM)
- \$30 million of funds from ASE Fund (Formerly Airline Reserve Fund and Federal Rescue Fund)
- No new debt service in FY25

Federal Rescue Funds Status	
Total Awards	\$ 44,500,000
<u>Applied to Balance System:</u>	
FY2020	(2,331,682)
FY2021	(4,186,826)
FY2022	(428,674)
FY2023 (Unaudited)	(65,953)
FY24 forecast	(29,237,344)
<b>Remaining Balance Transferred to ASE fund</b>	<b>\$ 8,249,521</b>

# FY 2025 Budget

Questions?

# THANK YOU





**Date:** August 19, 2024

**To:** Finance and Risk Management Council  
**From:** Kim Allison, Vice President of Finance / CFO  
**Re:** FY 2025 Tucson Airport Authority Operating Budget

**Purpose:**

Attached for your review is the FY 2025 Tucson Airport Authority (TAA) Operating Budget. The document entitled, "Statement of Airport System Requirements" (Exhibit A) presents a comparative analysis of major revenue and expense categories for the FY 2025 budget, the current fiscal year forecast and approved budget (FY 2024).

**Activity FY 2024 Forecast vs FY 2024 Budget:**

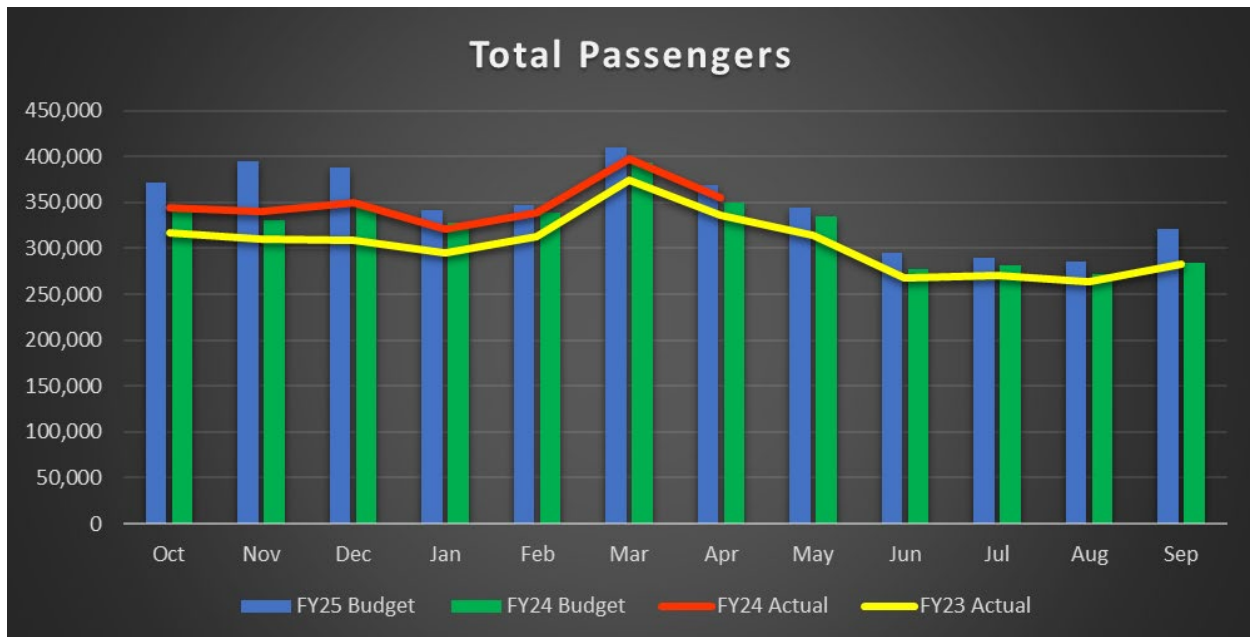
Overall, the fiscal year results have tracked favorably to the annual budget. Year-to-date through June 2024, enplaned passenger activity has slightly exceeded budget by 0.2%. The overall passenger volume expectation for FY 2024 was approximately 106% of FY 2023 levels. The current year-to-date volume is just over 135% of FY 2023 levels.

**FY 2025 Budget Volume Assumptions:**

Volume assumptions drive critical components of airport revenue planning, including Concessions and Landing Fees. Significant changes in volume have the potential to affect operating expenses as well. Overall, TAA's operating costs are largely fixed. The most significant cost drivers are FAA Part 139 requirements and the specific infrastructure and resources managed and maintained, which do not significantly change year-to-year. For FY 2025, budgeted landed weight volume for signatory airlines is expected to increase by 7.1% over the budgeted volume for FY 2024. Accordingly, this is expected to be a driver in increasing TAA's Operating Revenue for the year.

FY 2025, passenger activity is budgeted to increase 7.1% compared to the FY 2024 budget, with 4.2 million total expected passengers at TUS. Load factors are expected to remain relatively high.

Landed weight is highly correlated with passenger volume. With the expectation of elevated load factors, the budgeted landed weight for FY 2025 is 6.1% higher than the FY 2024 budget.



**Debt Service:**

There will be no new airport system debt service for FY 2025. This is due to utilizing remaining Federal Rescue Funds of \$8.2 million, the expected balance after applying projected \$29 million to fund the Airfield Safety Enhancement Project in FY 2024. See the Appendix section for additional details on current outstanding airport system debt service.

**Fund Transfers:**

All fund transfers are budgeted and executed in accordance with the terms of the Airport Use Agreement (AUA).

- The Operations and Maintenance Reserve Fund is required to be maintained at a balance of 25% of budgeted operating expenses. The \$1.7M transfer is required to maintain this balance.
- The transfer to the Capital Improvement Fund is budgeted to increase 5.0% in FY 2025, as prescribed by the AUA.
- Transfers to the Special Reserve Fund are expected to be \$1.8 million, which largely represents 52% of anticipated net operating income of the industrial area.
- A planned transfer of \$1.5M to the Maintenance Reserve fund for unplanned maintenance expenditures. This is the maximum annual amount allowed by the AUA.
- Common area maintenance transfers are flat.
- Remaining prior collections of the CARES, CRRSAA, and ARPA grants of \$8.2 million will be used to fund capital program expenses in FY 2025.
- The remaining balance of \$21.7M from the Airline Reserve Fund is used to fund the Airfield Safety Enhancement Project.

**Total Capital Requirements:**

Total capital requirements are budgeted to increase by \$3.4 million compared to FY 2024 budget. Attached are three separate exhibits detailing budgeted project information for FY 2025 Major Maintenance (Exhibit B), Capital Outlay (Exhibit C), and the Capital Improvement Program (CIP) (Exhibit D).

**Funding of Capital Requirements**

TAA will be continuing work on the Airfield Safety Enhancement Project (ASE) in FY 2025. TAA plans to apply \$29.8M of funds previously designated for ASE to fund this project in FY 2025. Those funds were previously remaining Airline Reserve Funds and Federal Rescue Funds.

TAA is in the favorable position of having cash on hand to fund the local portion of planned ASE project phases in FY 2025 and other capital project priorities at TUS, while it continues to aggressively seek grant funding from federal and state sources. TAA has identified \$8.2 million of expected remaining receipts from the CARES, CRRSAA, and ARPA grants and \$21.6 million of Airline Reserve Funds for use in funding the capital program for FY 2025. (TAA is reserving \$29.2 million of CARES, CRRSAA, and ARPA grant collections to cover the forecasted shortfall of the airport system in FY 2024.) TAA recommends this fiscally responsible approach, as it avoids adding debt financing to the airport system during this time of elevated interest rates.

**Net Results and Summary:**

All budgeted items result in a signatory landing fee requirement of \$7.3 million. When divided by the budgeted signatory landed weight, the calculated landing fee is \$2.99 per thousand-pound unit, as required by the AUA amendment and extension.

The ASE program will continue to require significant investment by TAA through its completion. TAA plans to use the remaining balance of the Airline Reserve Fund and any remaining CARES, CRRSAA, and ARPA collections remaining after the airport system is balanced for FY 2024 for the capital program in FY 2025. The fund balances above do not include the \$31M allocation from the Bipartisan Infrastructure Law (BIL), as TAA also plans to apply all BIL proceeds directly to the ongoing Airfield Safety Enhancement (ASE) project. The increase in landing fee for FY 2025 will allow the TAA to preserve airport system funds for future phases of the ASE program. Additionally, it will require the non-signatory and cargo operators to contribute more into the airport system.

**Additional Information:**

Included with your agenda packet are updated summaries of the rates and charges that will become effective October 1, 2024. The information provided includes terminal rentals, general rental rates and charges and baggage claim allocations for the next fiscal year. The referenced rates will also be communicated to each airline's local station manager and accounts payable contact person.

In addition, on August 14, 2024, the TAA met with the Airline and Airport Affairs Committee (AAAC), a group of designated representatives from each airline (corporate executives). Members of the AAAC indicated no issue with the TAA's proposed FY2025 Budget. Staff will be available at the August 19, 2024 meeting to discuss the budget and to answer any questions you may have.

**Recommendation:**

The Finance and Risk Management Council recommend that the President/CEO or her designee present the FY2025 Budget to the Board of Directors on September 4, 2024 for approval.

**Attachments:**

1. Appendix A – FY2025 Interfund Loans Summary
2. Exhibit A – Statement of Airport System Requirements FY2025
3. Exhibit B – FY2025 Major Maintenance Program
4. Exhibit C – FY2025 Capital Outlay Program
5. Exhibit D – FY2025 Capital Improvement Program
6. Majority-in-Interest (Landed Weights Summary) – July 2023 through June 2024
7. Signatory Airline Majority-in-Interest Voting Ballot – FY2025 Budget Items
8. TUS General Rates and Charges (Effective October 1, 2024)
9. Monthly Baggage Claim Area Rental Charges – October 2024 through September 2025

**Appendix A**

The tables below provide details of the interfund loans included in the budget assumption for FY 2025.

<b>Special Reserve Fund Loans</b>	<b>Principal Payments</b>	<b>Interest Payments</b>	<b>Total Payments</b>
Jet Bridge B6	\$20,513	52,618	\$73,131
ARDCO Hangar	\$19,941	\$19,190	\$39,131
HIDTA Hangar	38,616	38,771	77,387
Jet Bridges	106,766	85,996	192,762
Public Safety Personnel Retirement System	1,478,186	581,876	2,060,062
Series 2018 Refunding	269,199	68,941	338,140
Universal Hangar	46,050	29,286	75,336
Velocity Ryan Apron Improvement	40,936	3,625	44,561
<b>Total Budgeted Special Reserve Fund Interfund Loan Payment FY 2025</b>	<b>\$2,020,207</b>	<b>\$880,303</b>	<b>\$2,900,510</b>

<b>Insurance Reserve Fund Loans</b>	<b>Principal Payments</b>	<b>Interest Payments</b>	<b>Total Payments</b>
QTA Expansion	\$52,844	\$14,023	\$66,867
RAC & Garage	709,239	180,723	889,962
<b>Total</b>	<b>\$762,083</b>	<b>\$194,746</b>	<b>\$956,829</b>
<b>Total Budgeted Insurance Reserve Fund Interfund Loan Payment FY 2025</b>			<b>\$956,829</b>

EXHIBIT A

**TUCSON AIRPORT AUTHORITY**  
**AIRPORT SYSTEM RESIDUAL LANDING FEE CALCULATION**  
**FY2025 Budget**

Description	2025 Budget	2024 Forecast	2024 Budget	2023 Actual - Unaudited	2025 Budget vs 2024 Budget Dollar Incr/(Decr)	% Inc (% Dec)
<b>Operating Revenue</b>						
Revenue from Signatory Airlines (excluding landing fees and fuel sales)	\$ 10,764,416	\$ 10,552,000	\$ 9,671,803	\$ 8,510,040	\$ 1,092,613	11.3%
Fees and Rental Revenue	11,601,807	10,945,101	10,511,128	9,606,387	1,090,679	10.4%
Concession Revenue	25,105,911	25,105,911	22,390,019	21,883,906	2,715,892	12.1%
Fuel Sales (net of cost of sales)	32,000	32,000	26,136	31,333	5,864	22.4%
Other System Revenue	3,963,269	3,963,269	4,035,087	4,238,974	(71,818)	-1.8%
<b>Operating Revenue Total</b>	<b>A</b> \$ 51,467,403	\$ 50,598,281	\$ 46,634,173	\$ 44,270,641	\$ 4,833,230	10.4%
<b>Non-Operating Revenue</b>						
Interest Revenue	<b>B</b> 2,175,000	2,175,000	526,646	1,099,325	1,648,354	313.0%
<b>Total Revenue</b>	<b>C=A+B</b> \$ 53,642,403	\$ 52,773,281	\$ 47,160,819	\$ 45,369,966	\$ 6,481,584	13.7%
<b>Less: Operating Expenses</b>						
Personnel Expenses	\$ 30,835,930	\$ 27,666,000	\$ 27,666,000	\$ 24,751,170	\$ 3,169,930	11.5%
Contractual/Purchased Services	12,347,139	9,911,000	10,839,818	8,956,126	1,507,321	13.9%
Materials/Supplies	3,421,053	2,738,000	4,389,633	2,195,186	(968,580)	-22.1%
Other Operating Expenses	1,903,079	1,523,000	1,813,709	1,548,201	89,370	4.9%
<b>Total Operating Expenses</b>	<b>D</b> \$ 48,507,201	\$ 41,838,000	\$ 44,709,160	\$ 37,450,683	\$ 3,798,041	8.5%
<b>Net Operating Income</b>	\$ 5,135,202	\$ 10,935,281	\$ 2,451,659	\$ 7,919,283	\$ 2,683,543	24.5%
<b>Debt Service</b>						
Airport Revenue Bonds	\$ 3,998,174	\$ 3,996,652	\$ 3,996,652	\$ 3,996,806	\$ 1,522	0.0%
PFC Payment	(3,998,174)	(3,996,652)	(3,996,652)	(3,996,806)	(1,522)	0.0%
Special Reserve Advances	2,900,510	4,013,059	4,013,059	3,728,357	(1,112,549)	-27.7%
Insurance Reserve Advances	956,829	956,829	956,829	956,829	-	0.0%
<b>Total Debt Service</b>	\$ 3,857,339	\$ 4,969,888	\$ 4,969,888	\$ 4,685,186	\$ (1,112,549)	-22.4%
<b>Fund Transfers</b>						
Operations & Maintenance Reserve	1,675,825	1,096,829	3,215,192	(4,017)	\$ (1,539,368)	-47.9%
Capital Improvement Fund	1,654,808	1,576,007	1,576,007	1,500,959	78,801	5.0%
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Common Area Major Maintenance Funds	143,670	143,670	144,899	143,670	(1,229)	-0.8%
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<b>Total Fund Transfers</b>	\$ (22,707,522)	\$ (24,151,277)	\$ (32,975,407)	\$ 3,286,047	\$ 10,267,885	-31.1%
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Capitalized Major Maintenance	927,634	996,004	996,004	1,009,366	(68,370)	-6.9%
<b>Special Funding Sources</b>						
Capital Improvement Fund	(1,654,808)	(1,576,007)	(1,576,007)	(1,500,959)	(78,801)	5.0%
Special Reserve Fund uses	-	-	-	(4,326,766)	-	-
Maintenance Reserve Fund	-	-	-	(769,394)	-	-
<b>Total Capital Requirements</b>	\$ 31,296,095	\$ 34,781,495	\$ 34,781,495	\$ 2,470,630	\$ (3,485,400)	-10.0%
<b>Signatory Landing Fee Requirement</b>	\$ 7,310,711	\$ 4,664,825	\$ 4,324,317	\$ 2,522,579	2,645,886	61.2%
Landed Weight Signatory Airlines	2,442,078	2,313,081	2,142,102	2,198,422	128,997	6.0%
<b>Landing Fee per 1,000 lbs</b>	<b>\$2.99</b>	<b>\$2.02</b>	<b>\$2.02</b>	<b>\$1.15</b>	<b>\$0.97</b>	<b>48%</b>

EXHIBIT B

**FY 2025 Proposed Budget**

**Program: (MM) Major Maintenance**

<b>Initiative ID</b>	<b>Initiative</b>	<b>Total</b>
20223578	Repair and coat roofs on TAA hangars at RYN	\$ 225,000
10220409	Upgrade controls for wash rack and triturator	42,634
10223570	B230 mechanical overhaul energy conservation	375,000
10224615	Reno Glass	40,000
10224619	Phase II door wraps	35,000
20224616	RYN Landscaping	80,000
10223586	Fire Department Laundry Room Drain Repairs design	30,000
10224617	Terminal Electrical Study for PC Air and Seat Power	100,000
	<b>TOTAL</b>	<b><u>\$ 927,634</u></b>

EXHIBIT C

**FY 2025 Proposed Budget**

**Program: (CO) Capital Outlay**

<b>Initiative ID</b>	<b>Initiative</b>	<b>Total</b>
10324600	New Equinox for PMO	39,000
10323535	Fire Department Paging System	50,000
10323565	Technology Lifecycle Mgmt Program - Network Switches	52,000
10323573	Replace Air Conditioners on Aergo Building	60,000
10395002	FY25 Art Acquisition	75,000
10323522	Replace TAA 513 K9 Vehicle	75,000
10323576	Convert Pole Lighting on Aeropark to LED	83,000
10323591	Replace SCBA's at Fire Department (\$10,400 ea)	125,000
10323540	Private Wireless Phase 2	143,000
10323596	Phase I Interior Terminal Signage	350,000
10324610	Seat Back Power Chargers	150,000
10324611	Blast Fence for Cargo Ramp	400,000
10324612	Seat Coverings for Terminal	500,000
10324614	Add PC Air units to Common Use Gates	825,000
10324597	Terminal Carpet	850,000
	<b>TOTAL</b>	<b>\$ 3,777,000</b>



EXHIBIT D

**TUCSON AIRPORT AUTHORITY**  
**Tucson International Airport (TUS) / Ryan Airfield (RYN)**

**FISCAL YEAR 2025 CAPITAL IMPROVEMENT PROGRAM**

<u>TUS AIP Projects:</u>		<u>Total</u>	<u>Federal</u>	<u>State</u>	<u>PFC/OTA</u>	<u>TAA</u>	<u>See Note</u>
10119102	ASE Program	\$ 90,000,000	\$ 63,151,231	\$ 3,100,000		\$ 23,748,769	*
	Checked Baggage Inspection System	\$ 750,000	\$ -	\$ -	\$ 750,000		
<b>TUS AIP Total:</b>		<b>\$ 90,750,000</b>	<b>\$ 63,151,231</b>	<b>\$ 3,100,000</b>	<b>\$ 750,000</b>	<b>\$ 23,748,769</b>	
<u>TUS ADOT Projects:</u>		<u>Total</u>	<u>Federal</u>	<u>State</u>		<u>TAA</u>	
		\$ -					
<b>TUS ADOT Total:</b>		<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>		<b>\$ -</b>	
<u>RYN AIP Grant Projects:</u>		<u>Total</u>	<u>Federal</u>	<u>State</u>		<u>TAA</u>	
	Runway 6L-24R Emergency Repairs	\$ 250,000	\$ 237,500	\$ 6,250		\$ 6,250	
	Runway 15-33 Reconstruction Taxiway B Hotspot Correction Design	\$ 850,000	\$ 807,500	\$ 21,250		\$ 21,250	
<b>RYN AIP Total:</b>		<b>\$ 1,100,000</b>	<b>\$ 1,045,000</b>	<b>\$ 27,500</b>		<b>\$ 27,500</b>	
<u>RYN ADOT Grant Projects:</u>		<u>Total</u>	<u>Federal</u>	<u>State</u>		<u>TAA</u>	
		\$ -					
<b>RYN ADOT Total:</b>		<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>		<b>\$ -</b>	
<b>Grant Total:</b>		<b>\$ 91,850,000</b>	<b>\$ 64,196,231</b>	<b>\$ 3,127,500</b>		<b>\$ 23,776,269</b>	
<u>TAA Funded Projects:</u>		<u>Total</u>	<u>Federal</u>	<u>State</u>		<u>TAA</u>	
10120385	Terminal Roadway Rehab (sidewalk, landscaping additional budget)	\$ 500,000	\$ -	\$ -		\$ 500,000	
10123546	CBIS Inline Bag System PM/CM (additional budget)	\$ 100,000	\$ -	\$ -		\$ 100,000	
10123546	CBIS Inline Bag System Design (additional budget)	\$ 1,000,000	\$ -	\$ -		\$ 1,000,000	
10213570	Outbound BHS Project (additional budget)	\$ 1,500,000	\$ -	\$ -		\$ 1,500,000	
20124620	RYN 6L-24R Prelim Design 30%	\$ 500,000	\$ -	\$ -		\$ 500,000	
10219213	Rehab Park Ave (Teton to PCC) (additional budget)	\$ 870,000	\$ -	\$ -		\$ 870,000	
<b>TAA Total:</b>		<b>\$ 4,470,000</b>	<b>\$ -</b>	<b>\$ -</b>		<b>\$ 4,470,000</b>	
<b>TOTAL TAA FUNDS NEEDED:</b>						<b>\$ 28,246,269</b>	

**Note:**

\* Project does not require Majority-In-Interest (MII) approval pursuant to the threshold limit of Section 6.1 or is covered under an exception listed under section 6.3 of the Airline Use Agreement.

# MAJORITY-IN-INTEREST

## LANDED WEIGHTS SUMMARY

**Jul 2023 - Jun 2024**  
**(Based on 12 Month Period)**

<b>AIRLINE</b>	<b>Landed Weight</b>	<b>% of Total</b>	<b>Ranking</b>
<b>American</b>	<b>758,298,000</b>	<b>36.13%</b>	<b>1</b>
<b>Southwest</b>	<b>559,627,000</b>	<b>26.66%</b>	<b>2</b>
<b>Delta</b>	<b>348,705,000</b>	<b>16.61%</b>	<b>3</b>
<b>United</b>	<b>302,531,000</b>	<b>14.41%</b>	<b>4</b>
<b>Alaska</b>	<b>129,981,000</b>	<b>6.19%</b>	<b>5</b>
<b>TOTAL</b>	<b>2,099,142,000</b>	<b>100.00%</b>	

***"Majority-In-Interest" is defined in the "Airport Use Agreement" as follows:***

***It shall mean a numerical majority of Signatory Airlines, which numerical majority shall have landed more than 50% of the Total Landed Weight at the Airport in the latest 12 months for which such data is available and which months were not affected by schedule reductions resulting from labor disputes.***

Signatory Airline Majority-In-Interest (MII)  
 Voting Ballot  
 FY 2025 Budget Items

Project Name	Cost	Yes	No
1. Terminal Carpet (10324597)	\$850,000		
2. Add PC Air Units to Common Use Gates (10324614)	\$825,000		
3. Seat Coverings for Terminal (10324612)	\$500,000		
4. Terminal Roadway Rehab (10120385)	\$500,000		
5. CBIS Inline Bag System Design Additional Budget (10123546)	\$1,100,000		
6. RYN 6L-24R Prelim Design 30% (20124620)	\$500,000		
7. Rehab Park Ave Additional Construction Budget(10219213)	\$870,000		
8. Outbound BHS Project Additional Budget (10213570)	\$1,500,000		

Airline \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

**Tucson International Airport  
General Rates & Charges  
FY 2025 Rates Effective October 1, 2024**

Space/Charge Type	Signatory Rates Effective 11/01/2023	Signatory Rates Effective 10/1/2024	Non-Signatory Rates Effective 10/1/2024	Fee Basis
Landing fee	\$2.02	\$2.99	\$3.74	per 1,000 lbs
Ticket counter, kiosk, phone bank	\$92.01	\$100.29	\$125.36	per sq/ft per year
Airline ticket office (ATO)	\$92.01	\$100.29	\$125.36	per sq/ft per year
Baggage makeup	\$30.66	\$33.42	\$41.78	per sq/ft per year
Baggage storage	\$92.01	\$100.29	\$125.36	per sq/ft per year
Operations area	\$78.18	\$85.22	\$106.53	per sq/ft per year
Baggage claim	\$87.26	\$95.11	N/A	per sq/ft per year
TSA EDS Bag Screening Pods/1	\$55.22	\$60.18	N/A	per sq/ft per year
Holdroom per gate/2	\$134,167.77	\$146,242.87	\$182,803.59	per gate per year
Custodial - exclusive space	\$29.89	\$32.58	N/A	per hour
Custodial - exclusive space with supplies	\$32.28	\$35.18	N/A	per hour
TAA-owned jet bridge at leased gate/2	\$4,316.76	\$4,705.27	\$5,881.59	per bridge per month
Aircraft parking position at leased gate/2	\$9,625.68	\$10,491.99	\$13,114.99	per position per year
Ramp scrubber at leased gate/2	\$2,514.52	\$2,740.83	\$3,426.03	per position per year
Terminal Operations Charge/3	N/A	N/A	\$2.41	per enplaned passenger
Non-leased ticket counter use fee	N/A	N/A	\$22.51	per turn per position
Non-leased bag makeup belt use fee	N/A	N/A	\$84.63	per turn
FIS facility fee - international flights	\$1.00	\$1.00	\$1.00	per deplaned passenger
Aircraft parking fees (in non-leased area):				
Remote apron RON	\$80.21	\$87.43	\$109.29	per day, max 10 days/month
Common Use Gates				
Apron and support systems	\$14.08	\$15.34	\$19.18	per turn
Bridge only	\$54.40	\$59.30	\$74.12	per turn
Apron, bridge and support systems	\$68.48	\$74.64	\$93.31	per turn
Holdroom and apron	\$151.02	\$164.61	\$205.76	per turn
Holdroom, apron, support systems	\$154.98	\$168.93	\$211.17	per turn
Holdroom, apron, support systems, bridge	\$209.39	\$228.23	\$285.29	per turn
Prorata security/6	\$189,525.44	\$189,525.44	N/A	per month
Main bag claim common use - Signatory Airlines/7	\$335,841.93	\$366,054.61	N/A	per month
Main bag claim common use - Non-Signatory	N/A	N/A	2.73	per enplaned passenger
Triturator	\$6.13	\$6.68	\$6.68	per key turn
Wash rack	\$3.67	\$4.00	\$4.00	per key turn

- 1 - 8,016 square feet - this charge is included in the prorata security fee
- 2 - For airlines qualifying as low volume carriers and electing to lease one-half of a gate, this rate is reduced by half.
- 3 - Applies only to non-signatory airlines using the main terminal (A and B gates).
- 4 - Fee applies if parked at common use gate more than 90 minutes (Domestic), 120 minutes (International) after flight arrival.
- 5 - Total monthly charge is prorated based upon each airline's percentage of enplaned passengers for the month.  
Applies to all signatory and non-signatory airlines using A and B gates.
- 6 - 46,185 square feet. Allocated to signatory airlines on a 90/10 common use formula.
- 7 - Calculated based on average signatory airline cost per enplanement using budgeted signatory enplanements, plus 25% non-signatory premium.
- 8 - Qualifying non-signatory cargo airlines pay the signatory landing fee rate.

**Non-Signatory Premium**

**125%** of signatory rates

# TUCSON AIRPORT AUTHORITY

## MONTHLY BAGGAGE CLAIM AREA RENTAL CHARGES OCT 2024 - SEP 2025

BASED ON					
AIRLINE	JUL 2023-JUN 2024 ENPLANEMENTS	Percent of Total	90% of Total	10% of Total	Signatory Total
ALASKA *	123,681	6.2%	\$20,811.96	\$7,509.97	\$ 28,321.92
AMERICAN *	746,426	37.2%	\$125,602.05	\$7,509.97	\$ 133,112.02
DELTA *	333,021	16.6%	\$56,037.87	\$7,509.97	\$ 63,547.83
SOUTHWEST	519,214	25.9%	\$87,368.80	\$7,509.97	\$ 94,878.76
UNITED *	286,013	14.2%	\$48,127.77	\$7,509.97	\$ 55,637.74

TOTAL Jul-Jun	2,008,355	100%	\$ 337,948.44	\$37,549.83	\$ 375,498.27
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Combined Total from 90% and 10% columns

\$	375,498.27
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\*NOTE: Operating Affiliate airline enplanements have been added to the mainline carriers' enplanement totals.

*BAG CLAIM AREA IS BASED ON 46,185 SQ FT MULTIPLIED BY \$97.56 PER SQ FT PER YEAR AT SIGNATORY RATES. ANNUAL CHARGE EQUALS \$4,505,979.24; MONTHLY CHARGE EQUALS \$375,498.27 PRORATED AS FOLLOWS: 10% DIVIDED EQUALLY AMONG USERS AND 90% APPORTIONED AMONG USERS SO THAT EACH PAYS THE PRORATED PERCENTAGE OF ITS ENPLANEMENTS TO THE TOTAL COMPUTED FOR TWELVE MONTHS ENDING THE FIRST OF JULY.*

*NON-SIGNATORY USE OF THE BAG CLAIM WILL BE ASSESSED AT A RATE OF \$2.80 PER ENPLANED PASSENGER, CALCULATED BY DIVIDING THE ANNUAL BAG CLAIM RENT OF \$4,505,979.24 BY THE NUMBER OF BUDGETED ENPLANED SIGNATORY PASSENGERS 2,008,355 TO ARRIVE AT AN AVERAGE SIGNATORY BAG CLAIM COST OF \$2.24. THE NON-SIGNATORY PERMIUM OF 25% IS APPLIED TO THIS RATE TO ARRIVE AT \$2.80.*

**Date:** August 19, 2024

**To:** Finance and Risk Management Council  
**From:** Kim Allison, Vice President of Finance / CFO  
**Re:** PSPRS Pension System Funding Policy FY 2025

**Background:**

Arizona Revised Statute (A.R.S.) § 38-863.01 requires that the governing body of an employer participating in the Arizona Public Safety Personnel Retirement System (PSPRS) adopt a pension funding policy for employees hired before July 1, 2017. The policy is to include:

- Objectives to address the maintenance of the stability of contributions
- How and when funding requirements will be met
- A funded ratio target and a timeline to reach the target

The policy must also include a formal acceptance of the pension assets and liabilities based on published PSPRS actuarial reports.

The TAA PSPRS Pending Funding Policy for FY 2025 (Exhibit A of the attached draft resolution) is the legally required TAA policy which was prepared with the intent of satisfying the requirements established by A.R.S. § 38-863.01 in both letter and spirit.

The policy broadly describes the nature and function of the two TAA PSPRS pension plans, formalizes the commitment to required bi-weekly funding of required pension contributions, accepts the pension assets and liabilities as presented in recent annual reports provided by PSPRS and declares TAA's goal of maintaining a 100% funded ratio.

**Recommendation:**

The TAA staff recommends that the Finance and Risk Management Council recommend to the Board of Directors that it approve as presented the PSPRS Pension Funding Policy for FY 2025.

**Attachments:**

1. Draft Board Resolution
2. Exhibit A – Policy No. 2024-XX – PSPRS Funding Policy for FY 2025
3. Copy of Arizona Revised Statutes § 38-863.01
4. TAA Fire Department (124) Actuarial Valuation as of June 30, 2023
5. TAA Police Department (125) Actuarial Valuation as of June 30, 2023

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE TUCSON AIRPORT AUTHORITY, INC., ADOPTING THE TAA POLICY ON FUNDING PENSION OBLIGATIONS UNDER THE ARIZONA PUBLIC SAFETY PERSONNEL RETIREMENT SYSTEM FOR FY 2025.**

**WHEREAS** Arizona Revised Statute (A.R.S.) § 38-863.01 mandates that each governing body shall annually adopt a pension funding policy for the Public Safety Personnel Retirement System (PSPRS) for employees hired before July 1, 2017; and

**WHEREAS** the Finance and Risk Management Council considered the staff-proposed policy for FY 2025 during its meeting on August 19, 2024, and by \_\_ to \_\_ voted to recommend to the Board of Directors that it \_\_\_\_\_ the policy as presented; and

**WHEREAS** the Board of Directors accepts the staff recommendations as detailed in the Board Memorandum and *TAA Policy No. 2024-XX – Public Safety Personnel Retirement System Pension Funding Policy for FY 2025*.

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE TUCSON AIRPORT AUTHORITY, INC., AS FOLLOWS:**

The Board of Directors hereby adopts *TAA Policy No. 2024-XX – Public Safety Personnel Retirement System Pension Funding Policy for FY2025*, attached hereto as Exhibit A and incorporated by reference herein, authorizes the President/CEO or her designee[s] to execute the policy, to transmit the policy to the Public Safety Personnel Retirement System, and to take any further actions necessary to comply with A.R.S. § 38-863.01.

**PASSED AND ADOPTED** by the Board of Directors of the Tucson Airport Authority, Inc., this fourth day of September, 2024.

\_\_\_\_\_  
Keri Silvyn, Chair of the Board

ATTEST:

APPROVED AS TO FORM:

\_\_\_\_\_  
Phil Swaim, Secretary

\_\_\_\_\_  
Christopher Schmaltz, Executive Vice  
President and General Counsel

**Public Safety Personnel Retirement  
 System Funding Policy for FY 2025**

Policy No.	2024-XX
Effective Date	09/04/2024
Authorized By	D. Bewley
Supersedes Policy No.	N/A

**Objective:**

This policy is a statement of the objectives of the Tucson Airport Authority (TAA) regarding the funding of the public safety pension in which it participates for public safety employees participating in the Public Safety Personnel Retirement System (PSPRS) hired before July 1, 2017. It represents a commitment to our participating PSPRS employees and was specifically prepared to ensure TAA’s compliance with A.R.S § 38-863.01.

**Scope:**

This policy will be submitted to PSPRS upon authorization to comply with A.R.S. § 38-863.01. Additionally, in accordance with A.R.S. § 38-863.01, TAA is required to make this policy available on the company website. The aspects of this policy that relate to payroll withholdings and payment of contributions into the PSPRS programs applies to the Finance department and the bi-weekly payroll process.

**Definitions/Terminology:**

The below terms are used throughout this policy:

**Unfunded Actuarial Accrued Liability (UAAL)** – This represents the calculated difference between trust assets and the estimated future cost of pensions earned by employees. UAAL arises when actual results in the pension program differ from the assumptions used in previous actuarial valuations.

**Annual Required Contribution (ARC)** – This represents the annual amount that TAA is required to pay into the pension funds. This amount is a percentage of current payroll expense. The percentage is determined by PSPRS through actuarial valuations. It is comprised of two primary components: normal pension cost – estimated cost of pension benefits earned by participating employees in the current plan year; and amortization of UAAL.

**Procedure:**

Employees of the TAA participate in PSPRS if they are employed in either police or firefighting capacities and meet the minimum work qualifications. The PSPRS administers an agent multiple-employer defined benefit pension plan. PSPRS acts as a common investment and administrative agent which issues, on an annual basis, financial reports detailing pension plan assets, liabilities, pertinent funding information and actuarial assumptions. Under this structure, PSPRS comingles investment resources of all participating agencies and serves as the statewide uniform distributor



of benefits. However, each participating agency is treated as an individual trust fund, with separately identifiable assets and liabilities. There are two separate participating agencies within TAA: Tucson Airport Authority Police Department (TAAPD), and Tucson Airport Authority Fire Department (TAAFD).

**Stability and Frequency of Contributions:**

Upon completion of the bi-weekly payroll process, TAA shall remit to the PSPRS all required pension contributions for participating employees as defined by the PSPRS. In general, the required contributions are derived by applying the required percentage contribution rate (published by PSPRS annually) to each employee’s pensionable wages (as defined by PSPRS).

**Acceptance of Pension Assets and Liabilities:**

TAA formally accepts the reported share of pension assets and liabilities for both TAAPD and TAAFD as presented in the GASB 68 statements provided by PSPRS.

GASB 68 statements published by PSPRS for the plan year ended June 30, 2023 for TAAPD and TAAFD reflected the following:

	<b>TAAFD</b>	<b>TAAPD</b>	<b>Total</b>
Total Pension Liability	\$ 21,035,885	\$ 24,254,182	\$ 45,290,067
Plan Fiduciary Net Position	18,927,171	23,027,511	41,954,682
Net Pension Liability (Asset)	\$ 2,108,714	\$ 1,226,671	\$ 3,335,385
Funded Ratio*	89.98%	94.94%	92.64%

*\*Plan fiduciary net position as a percent of total pension liability*

TAA’s funded ratio goal is 100% (fully funded) over a period of 15 years. This is consistent with the standard amortization period per the PSPRS’s Actuarial Valuation Report as of June 30, 2023.

**Funded Ratio Target:**

TAA will continue to remit ARC payments on a bi-weekly basis as defined by PSPRS with the goal of maintaining a 100% funded ratio. PSPRS reviews its pension assumptions annually. Accordingly, the ARC and amortization period may be adjusted as a result of these reviews. TAA plans to remit ARC as required by PSPRS to achieve its goal of 100% funding within a 15-year period.

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Authorized by:

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Danette Bewley  
President/CEO

---

Date

DRAFT

38-863.01. Pension funding policies; employers

A. Each governing body of an employer shall annually:

1. Adopt a pension funding policy for the system for employees who were hired before July 1, 2017. The pension funding policy shall include funding objectives that address at least the following:

- (a) How to maintain stability of the governing body's contributions to the system.
- (b) How and when the governing body's funding requirements of the system will be met.
- (c) Defining the governing body's funded ratio target under the system and the timeline for reaching the targeted funded ratio.

2. Formally accept the employer's share of the assets and liabilities under the system based on the system's actuarial valuation report.

B. The governing body shall post the pension funding policy on the governing body's public website and transmit the pension funding policy to the board.

**ARIZONA PUBLIC SAFETY PERSONNEL  
RETIREMENT SYSTEM**

**TUCSON AIRPORT AUTHORITY FIRE DEPT. (124)**

ACTUARIAL VALUATION  
AS OF JUNE 30, 2023

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



**FOSTER & FOSTER**  
ACTUARIES AND CONSULTANTS

December 2023

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

*Re: Actuarial Valuation Report as of June 30, 2023 for Tucson Airport Authority Fire Dept. (124)*

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, 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.

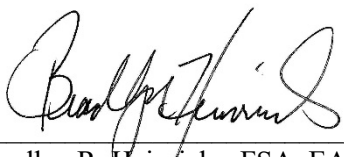
The undersigned are familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All sections of this report are considered an integral part of the actuarial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

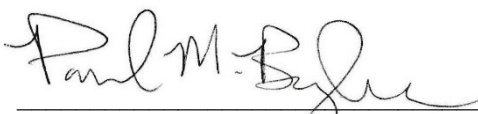
To our knowledge, no associate of Foster & Foster, Inc. working on valuations of the program has any direct financial interest or indirect material interest in the Arizona Public Safety Personnel Retirement System, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the 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 Tucson Airport Authority Fire Dept., 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	32.73%	0.12%	32.85%	8.63%	0.12%	8.75%
Funded Status	90.0%	120.7%	90.4%	107.3%	212.5%	108.9%

## 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

Valuation Date	Tier 1 & Tier 2 Members			Tier 3 Members *		
	Pension	Health	Total	Pension	Health	Total
June 30, 2022	29.35%	0.19%	29.54%	8.69%	0.12%	8.81%
June 30, 2023	32.73%	0.12%	32.85%	8.63%	0.12%	8.75%

### Funded Status

Valuation Date	Tier 1 & Tier 2 Members			Tier 3 Members		
	Pension	Health	Total	Pension	Health	Total
June 30, 2022	91.8%	118.0%	92.2%	110.5%	212.1%	112.1%
June 30, 2023	90.0%	120.7%	90.4%	107.3%	212.5%	108.9%

\* 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	29.35%	0.19%	8.69%	0.12%
Asset Experience	0.43%	0.00%	(0.02%)	0.00%
Payroll Base	(1.10%)	0.02%	0.00%	0.00%
Liability Experience	0.47%	(0.23%)	(0.16%)	0.00%
Additional Contribution	0.00%	0.00%	0.00%	0.00%
Assumption/Method Change	0.06%	0.00%	0.00%	0.00%
Actuarial Audit	1.82%	0.01%	0.33%	0.00%
Other	<u>1.70%</u>	<u>0.13%</u>	<u>(0.21%)</u>	<u>0.00%</u>
Contribution Rate This Valuation	32.73%	0.12%	8.63%	0.12%

	Funded Status			
	Tier 1 & Tier 2		Tier 3 Members	
	Pension	Health	Pension	Health
Funded Status Last Valuation	91.8%	118.0%	110.5%	212.1%
Asset Experience	(0.3%)	0.0%	0.3%	1.1%
Liability Experience	(0.3%)	9.0%	2.5%	7.2%
Additional Contribution	0.0%	0.0%	0.0%	0.0%
Assumption/Method Change	0.0%	0.0%	0.0%	0.0%
Actuarial Audit	(1.0%)	(0.3%)	(1.6%)	(0.7%)
Other	<u>(0.2%)</u>	<u>(6.0%)</u>	<u>(4.4%)</u>	<u>(7.2%)</u>
Funded Status This Valuation	90.0%	120.7%	107.3%	212.5%

**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, 2023 was 7.7% for Tiers 1 and 2 and 9.2% for Tier 3. On a smoothed, actuarial value of assets basis, however, the average return was 6.9% for Tiers 1 and 2 and 7.3% for Tier 3. These returns nearly met the 2022 assumed earnings rate for Tiers 1 and 2 of 7.2% and exceeded the 2022 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 continued the decrease in the payroll growth assumption from 2.50% to 2.00%.

**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.

**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. This also includes the change due to HB2088, which removes the “maintenance of effort” adjustment to the unfunded liability amortization. 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, 2023 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 88.3% (instead of 90.0%) and the pension employer contribution requirement would be 35.24% of payroll (instead of 32.73%).

#### 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
<b>Pension</b>				
Normal Cost				
Total Normal Cost	24.18%	\$ 264,434	23.11%	\$ 229,705
Employee Cost	<u>(7.65%)</u>	<u>(83,661)</u>	<u>(7.65%)</u>	<u>(76,038)</u>
Employer (Net) Normal Cost	16.53%	180,773	15.46%	153,667
Amortization of Unfunded Liability	<u>16.20%</u>	<u>177,164</u>	<u>13.89%</u>	<u>138,061</u>
Total Employer Cost (Pension)	32.73%	357,937	29.35%	291,728
<b>Health</b>				
Normal Cost	0.37%	4,046	0.41%	4,075
Amortization of Unfunded Liability	<u>(0.25%)</u>	<u>(2,734)</u>	<u>(0.22%)</u>	<u>(2,187)</u>
Total Employer Cost (Health)	0.12%	1,312	0.19%	1,888
<b>Total Employer Cost (Pension + Health)</b>	<b>32.85%</b>	<b>359,249</b>	<b>29.54%</b>	<b>293,616</b>
Alternate Contribution Rate (ACR) *	16.20%		13.89%	
Underlying Payroll (as of valuation date)		1,072,163		969,719

\* 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 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, 2023	June 30, 2022
Applicable to Fiscal Year Ending	2025	2024

**Defined Benefit (DB) Retirement Plan**

	Rate	Dollar	Rate	Dollar
<b>Pension</b>				
Total Normal Cost	17.25%	\$ 46,552	17.37%	\$ 40,292
Amortization of Unfunded Liability	<u>0.00%</u>	<u>0</u>	<u>0.00%</u>	<u>0</u>
Total Pension Cost	17.25%	46,552	17.37%	40,292
Employee (EE) Pension Cost	8.63%	23,276	8.69%	20,146
Employer (ER) Pension Cost	8.63%	23,276	8.69%	20,146
<b>Health</b>				
Total Normal Cost	0.23%	621	0.24%	557
Amortization of Unfunded Liability	<u>0.00%</u>	<u>0</u>	<u>0.00%</u>	<u>0</u>
Total Health Cost	0.23%	621	0.24%	557
Employee (EE) Health Cost	0.12%	311	0.12%	279
Employer (ER) Health Cost	0.12%	311	0.12%	279
<b>Total</b>				
Total Calculated Tier 3 Required EE/ER Individual Cost	8.75%	23,587	8.81%	20,425
Funding Policy Tier 3 Required EE/ER Individual Cost <sup>1</sup>	8.89%	23,991	9.56%	22,176
ER Legacy Cost of Tiers 1 & 2 Amort of Unfunded Liabilities <sup>2</sup>	16.20%	43,718	13.89%	32,220
<b>Total Funding Policy Tier 3 Required ER Defined Benefit Cost</b>	<b>25.09%</b>	<b>67,709</b>	<b>23.45%</b>	<b>54,395</b>
Underlying Payroll (as of valuation date)		264,573		226,305

<sup>1</sup> The “Funding Policy” cost was adopted in 2023 and first reflected in the June 30, 2023 valuation.

<sup>2</sup> 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.

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

**Defined Contribution (DC) Retirement Plan**

	Rate	Dollar	Rate	Dollar
<b>Tier 2 &amp; 3 DB / Non-Social Security</b>				
Employee Cost	3.00%		3.00%	
Employer Cost <sup>1</sup>	3.00%		3.00%	
<b>Tier 3 DC Only</b>				
Employee Cost	9.00%	\$ 7,000	9.00%	\$ 7,053
Employee Health Subsidy Program Cost	0.23%	179	0.17%	133
Employee Disability Program Cost	<u>1.50%</u>	<u>1,167</u>	<u>1.43%</u>	<u>1,121</u>
<b>Total Employee Cost</b>	<b>10.73%</b>	<b>8,346</b>	<b>10.60%</b>	<b>8,307</b>
Employer Cost	9.00%	7,000	9.00%	7,053
Employer Health Subsidy Program Cost	0.23%	179	0.17%	133
Employer Disability Program Cost	<u>1.50%</u>	<u>1,167</u>	<u>1.43%</u>	<u>1,121</u>
<b>Total Employer Cost (before Legacy)</b>	<b>10.73%</b>	<b>8,346</b>	<b>10.60%</b>	<b>8,307</b>
ER Legacy Cost of Tiers 1 & 2 Amort of Unfunded Liabilities <sup>2</sup>	16.20%	12,600	13.89%	10,886
<b>Total Employer Cost</b>	<b>26.93%</b>	<b>20,946</b>	<b>24.49%</b>	<b>19,193</b>
Underlying Payroll (as of valuation date)		76,250		76,460

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

<sup>2</sup> 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		
Membership Date On or After	7/1/1968		1/1/2012		7/1/2017		
Participates in Social Security	N/A		Yes	No	Yes	No	N/A
Available Retirement Plan <sup>1</sup>	DB Only	DB Only	Hybrid	DB Only	Hybrid	DC Only	
<b>Employee Contribution Rate</b>							
PSPRS DB Rate	7.65%	7.65%	7.65%	8.89%	8.89%		
PSPRS DC Rate			3.00%		3.00%	9.00%	
Employer Health Subsidy Program Cost						0.23%	
PSPDCRP Disability Program Rate						1.50%	
<b>Total EE Contribution Rate</b>	7.65%	7.65%	10.65%	8.89%	11.89%	10.73%	
<b>Employer Contribution Rate</b>							
PSPRS DB Normal Cost	16.90%	16.90%	16.90%	8.89%	8.89%		
PSPRS DB Tier 1 & 2 Legacy Cost <sup>2</sup>	15.95%	15.95%	15.95%	16.20%	16.20%	16.20%	
PSPRS DC Rate <sup>3</sup>			4.00%		3.00%	9.00%	
Employer Health Subsidy Program Cost						0.23%	
PSPDCRP Disability Program Rate						1.50%	
<b>Total ER Contribution Rate</b>	32.85%	32.85%	36.85%	25.09%	28.09%	26.93%	

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

<sup>2</sup> 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.

<sup>3</sup> 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, 2023 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
<b>Impact On</b>											
Funded Status - June 30, 2023	90.0%	90.5%	90.9%	91.4%	91.9%	92.4%	92.8%	93.3%	93.8%	94.3%	94.7%
FYE 2025 Contribution Rate	32.73%	32.01%	31.29%	30.57%	29.85%	29.13%	28.41%	27.69%	26.97%	26.25%	25.53%

Table shows the hypothetical change in the funded status and contribution rate from the June 30, 2023 actuarial valuation results for Tiers 1 & 2 if an additional contribution of the amount shown had been made to the Fund on June 30, 2023. 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
<b>TIERS 1 &amp; 2</b>	2019	2021	15.74%	79.45%	95.19%	0.48%	(0.48%)	0.00%
	2020	2022	14.60%	86.86%	101.46%	0.44%	(0.44%)	0.00%
	2021	2023	14.10%	12.15%	26.25%	0.45%	(0.43%)	0.02%
	2022	2024	15.46%	13.89%	29.35%	0.41%	(0.22%)	0.19%
	2023	2025	16.53%	16.20%	32.73%	0.37%	(0.25%)	0.12%
<b>TIER 3 <sup>1</sup></b>	2019	2021	9.68%	0.00%	9.68%	0.26%	0.00%	0.26%
	2020	2022	9.68%	0.00%	9.68%	0.26%	0.00%	0.26%
	2021 <sup>2</sup>	2023	9.00%	0.00%	9.00%	0.12%	0.00%	0.12%
	2021	2023	9.68%	0.00%	9.68%	0.26%	0.00%	0.26%
	2022 <sup>2</sup>	2024	8.69%	0.00%	8.69%	0.12%	0.00%	0.12%
	2022	2024	9.30%	0.00%	9.30%	0.26%	0.00%	0.26%
	2023 <sup>2</sup>	2025	8.63%	0.00%	8.63%	0.12%	0.00%	0.12%
2023	2025	8.77%	0.00%	8.77%	0.12%	0.00%	0.12%	

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

<sup>2</sup> 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
<b>Pension</b>		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	\$ 14,707,744	\$ 13,364,101
DROP Members	2,776,853	3,402,437
Vested Members	15,715	15,715
Active Members	<u>5,966,159</u>	<u>5,648,662</u>
Total Actuarial Present Value of Benefits	23,466,471	22,430,915
Actuarial Accrued Liability (AAL)		
All Inactive Members	17,500,312	16,782,253
Active Members	<u>3,535,573</u>	<u>3,756,353</u>
Total Actuarial Accrued Liability	21,035,885	20,538,606
Actuarial Value of Assets (AVA)	18,927,171	18,847,435
Unfunded Actuarial Accrued Liability	2,108,714	1,691,171
PVB Funded Ratio (AVA / PVB)	80.7%	84.0%
AAL Funded Ratio (AVA / AAL)	90.0%	91.8%
<b>Health</b>		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	\$ 177,332	\$ 169,745
DROP Members	54,281	59,090
Active Members	<u>109,945</u>	<u>111,604</u>
Total Present Value of Benefits	341,558	340,439
Actuarial Accrued Liability (AAL)		
All Inactive Members	231,613	228,835
Active Members	<u>73,584</u>	<u>77,721</u>
Total Actuarial Accrued Liability	305,197	306,556
Actuarial Value of Assets (AVA)	368,427	361,646
Unfunded Actuarial Accrued Liability	(63,230)	(55,090)
PVB Funded Ratio (AVA / PVB)	107.9%	106.2%
AAL Funded Ratio (AVA / AAL)	120.7%	118.0%

Health liabilities were increased by \$6,704 under the lateral transfer methodology. Pension liabilities were not impacted.



### Liabilities and Funded Ratios by Benefit - Tier 3

	June 30, 2023	June 30, 2022
<b>Pension</b>		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	\$ 2,783,769	\$ 944,111
Vested Members	6,565,608	3,654,003
Active Members	<u>558,509,014</u>	<u>403,144,180</u>
Total Actuarial Present Value of Benefits	567,858,391	407,742,294
Actuarial Accrued Liability (AAL)		
All Inactive Members	9,349,377	4,598,114
Active Members	<u>101,611,814</u>	<u>64,341,090</u>
Total Actuarial Accrued Liability	110,961,191	68,939,204
Actuarial Value of Assets (AVA)	119,101,476	76,171,857
Unfunded Actuarial Accrued Liability	(8,140,285)	(7,232,653)
PVB Funded Ratio (AVA / PVB)	21.0%	18.7%
AAL Funded Ratio (AVA / AAL)	107.3%	110.5%
<b>Health</b>		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	0	0
Active Members	<u>7,842,159</u>	<u>5,807,514</u>
Total Present Value of Benefits	7,842,159	5,807,514
Actuarial Accrued Liability (AAL)		
All Inactive Members	0	0
Active Members	<u>1,651,466</u>	<u>1,075,733</u>
Total Actuarial Accrued Liability	1,651,466	1,075,733
Actuarial Value of Assets (AVA)	3,508,666	2,281,928
Unfunded Actuarial Accrued Liability	(1,857,200)	(1,206,195)
PVB Funded Ratio (AVA / PVB)	44.7%	39.3%
AAL Funded Ratio (AVA / AAL)	212.5%	212.1%

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 Tucson Airport Authority Fire Dept. 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, 2022	1,691,171	(55,090)	(7,232,653)	(1,206,195)
(2) Normal Cost Developed in Last Valuation	153,667	4,075	14,710,461	203,136
(3) Actual Contributions	317,042	208	18,581,041	1,010,859
(4) Expected Interest On (1), (2), and (3)	121,613	(3,680)	(118,890)	(107,979)
(5) Expected Unfunded Actuarial Accrued Liability as of June 30, 2023 (1)+(2)-(3)+(4)	1,649,409	(54,903)	(11,222,123)	(2,121,897)
(6) Changes to UAAL Due to Assumptions, Methods and Benefits	0	0	0	0
(7) Change to UAAL Due to Actuarial (Gain)/Loss	<u>459,305</u>	<u>(8,327)</u>	<u>3,081,838</u>	<u>264,697</u>
(8) Unfunded Actuarial Accrued Liability as of June 30, 2023	2,108,714	(63,230)	(8,140,285)	(1,857,200)

### Amortization of Unfunded Liabilities - Tiers 1 & 2

	Date Established	Outstanding Balance	Years Remaining	Amortization Rate
<b>Pension</b>	6/30/2019	355,844	13	2.60%
	6/30/2021	1,032,041	13	8.24%
	6/30/2022	227,118	14	1.74%
	6/30/2023	<u>493,711</u>	15	<u>3.62%</u>
	Total	2,108,714		16.20%
<b>Health</b>	6/30/2019	0	10	0.00%
	6/30/2021	0	10	0.00%
	6/30/2022	0	10	0.00%
	6/30/2023	<u>(26,869)</u>	10	<u>(0.25%)</u>
	Total	(26,869)		(0.25%)

### Amortization of Unfunded Liabilities - Tier 3

	Date Established	Outstanding Balance	Years Remaining	Amortization Rate *
<b>Pension</b>	6/30/2018	114,634	5	0.01%
	6/30/2019	(1,038,772)	6	(0.09%)
	6/30/2020	707,518	7	0.05%
	6/30/2021	(2,409,872)	8	(0.17%)
	6/30/2022	(4,031,414)	9	(0.26%)
	6/30/2023	<u>(1,482,379)</u>	10	<u>(0.09%)</u>
	Total	(8,140,285)		0.00%
<b>Health</b>	6/30/2018	(2,431)	5	0.00%
	6/30/2019	(94,973)	6	(0.01%)
	6/30/2020	(179,674)	7	(0.01%)
	6/30/2021	(348,185)	8	(0.02%)
	6/30/2022	(479,588)	9	(0.03%)
	6/30/2023	<u>(752,349)</u>	10	<u>(0.04%)</u>
	Total	(1,857,200)		0.00%

\* 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, 2023 Market Value Basis

	Tiers 1 & 2		Tier 3	
	Pension	Health	Pension	Health
<b>Additions</b>				
Contributions				
Member Contributions	\$ 117,410,792	\$ 0	\$ 40,441,215	\$ 0
Employer Contributions	1,211,172,334	0	40,447,269	0
Health Insurance Contributions	<u>0</u>	<u>3,595,544</u>	<u>0</u>	<u>1,975,775</u>
Total Contributions	1,328,583,126	3,595,544	80,888,484	1,975,775
Investment Income				
Net Increase in Fair Value	723,642,201	19,640,174	13,157,112	371,761
Interest and Dividends	205,449,236	5,576,041	3,735,435	105,547
Other Income	126,441,141	3,435,000	2,298,928	65,020
Less Investment Expenses	<u>(29,675,754)</u>	<u>(668,527)</u>	<u>(539,558)</u>	<u>(12,654)</u>
Net Investment Income	1,025,856,824	27,982,688	18,651,917	529,674
Non-investment Income	32,684	0	594	0
Transfers In	66,736	0	40,465	0
Total Additions	2,354,539,370	31,578,232	99,581,460	2,505,449
<b>Deductions</b>				
Distributions to Members				
Benefit Payments	1,067,901,240	0	382,013	0
Health Insurance Subsidy	0	17,880,074	0	1,800
Refund of Contributions	<u>12,146,940</u>	<u>0</u>	<u>1,476,602</u>	<u>0</u>
Total Distributions	1,080,048,180	17,880,074	1,858,615	1,800
Administrative Expenses	6,611,492	206,872	120,063	3,916
Transfers Out	433,659	0	0	0
Other	0	0	0	0
Total Deductions	1,087,093,331	18,086,946	1,978,678	5,716
<b>Net Increase / (Decrease)</b>	1,267,446,039	13,491,286	97,602,782	2,499,733
<b>Net Position Held in Trust</b>				
Prior Valuation	13,042,796,696	374,026,053	162,622,481	4,835,416
Beginning of the Year Adjustment	0	0	0	0
End of the Year	14,310,242,735	387,517,339	260,225,263	7,335,149

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

### A. Investment Income

A1. Actual Investment Income	\$ 1,019,245,332
A2. Expected Amount for Immediate Recognition	947,861,295
A3. Amount Subject to Amortization	71,384,037

B. Amortization Schedule	Year Ended June 30						
	2023	2024	2025	2026	2027	2028	2029
2023 Experience (A3 / 7)	10,197,720	10,197,720	10,197,720	10,197,720	10,197,720	10,197,720	10,197,717
2022 Experience	(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	238,978,745		
2020 Experience	(68,882,158)	(68,882,158)	(68,882,158)	(68,882,160)			
2019 Experience	(22,859,275)	(22,859,275)	(22,859,275)				
2018 Experience	(6,266,349)	(6,266,351)					
2017 Experience	33,380,148						
<b>Total Amortization</b>	<b>(19,902,419)</b>	<b>(53,282,569)</b>	<b>(47,016,218)</b>	<b>(24,156,945)</b>	<b>44,725,216</b>	<b>(194,253,529)</b>	<b>10,197,717</b>

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	13,397,869,480	
C2. Non-investment Net Cash Flow	248,200,707	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	14,574,029,063	
C4. Market Value of Assets, June 30, 2023	14,310,242,735	18,584,594
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	14,574,029,063	18,927,171

### D. Rates of Return

D1. Market Value Rate of Return	7.7%
D2. Actuarial Value Rate of Return	6.9%

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

### A. Investment Income

A1. Actual Investment Income	\$ 27,775,816
A2. Expected Amount for Immediate Recognition	26,424,570
A3. Amount Subject to Amortization	1,351,246

B. Amortization Schedule	Year Ended June 30						
	2023	2024	2025	2026	2027	2028	2029
2023 Experience (A3 / 7)	193,035	193,035	193,035	193,035	193,035	193,035	193,036
2022 Experience	(6,416,469)	(6,416,469)	(6,416,469)	(6,416,469)	(6,416,469)	(6,416,471)	
2021 Experience	9,257,478	9,257,478	9,257,478	9,257,478	9,257,481		
2020 Experience	(2,898,713)	(2,898,713)	(2,898,713)	(2,898,716)			
2019 Experience	(1,075,569)	(1,075,569)	(1,075,572)				
2018 Experience	(304,653)	(304,656)					
2017 Experience	1,532,136						
<b>Total Amortization</b>	<b>287,245</b>	<b>(1,244,894)</b>	<b>(940,241)</b>	<b>135,328</b>	<b>3,034,047</b>	<b>(6,223,436)</b>	<b>193,036</b>

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	380,136,214	
C2. Non-investment Net Cash Flow	(14,284,530)	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	392,563,499	
C4. Market Value of Assets, June 30, 2023	387,517,339	363,691
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	392,563,499	368,427

### D. Rates of Return

D1. Market Value Rate of Return	7.6%
D2. Actuarial Value Rate of Return	7.2%

### Development of Pension Actuarial Value of Assets - Tiers 3

#### A. Investment Income

A1. Actual Investment Income	\$ 18,531,854
A2. Expected Amount for Immediate Recognition	14,104,250
A3. Amount Subject to Amortization	4,427,604

B. Amortization Schedule	Year Ended June 30				
	2023	2024	2025	2026	2027
2023 Experience (A3 / 5)	885,521	885,521	885,521	885,521	885,520
2022 Experience	(3,259,379)	(3,259,379)	(3,259,379)	(3,259,381)	
2021 Experience	3,551,936	3,551,936	3,551,938		
2020 Experience	(351,296)	(351,294)			
2019 Experience	44,437				
<b>Total Amortization</b>	<b>871,219</b>	<b>826,784</b>	<b>1,178,080</b>	<b>(2,373,860)</b>	<b>885,520</b>

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	165,662,342	
C2. Non-investment Net Cash Flow	79,070,928	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	259,708,739	
C4. Market Value of Assets, June 30, 2023	260,225,263	119,338,352
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	259,708,739	119,101,476

#### D. Rates of Return

D1. Market Value Rate of Return	9.2%
D2. Actuarial Value Rate of Return	7.3%

### Development of Health Actuarial Value of Assets - Tiers 3

#### A. Investment Income

A1. Actual Investment Income	\$ 525,758
A2. Expected Amount for Immediate Recognition	406,400
A3. Amount Subject to Amortization	119,358

B. Amortization Schedule	Year Ended June 30				
	2023	2024	2025	2026	2027
2023 Experience (A3 / 5)	23,872	23,872	23,872	23,872	23,870
2022 Experience	(101,792)	(101,792)	(101,792)	(101,790)	
2021 Experience	128,963	128,963	128,961		
2020 Experience	(10,555)	(10,557)			
2019 Experience	1,508				
<b>Total Amortization</b>	<b>41,996</b>	<b>40,486</b>	<b>51,041</b>	<b>(77,918)</b>	<b>23,870</b>

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	4,875,299	
C2. Non-investment Net Cash Flow	1,973,975	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	7,297,670	
C4. Market Value of Assets, June 30, 2023	7,335,149	3,526,686
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	7,297,670	3,508,666

#### D. Rates of Return

D1. Market Value Rate of Return	9.0%
D2. Actuarial Value Rate of Return	7.6%



## V. MEMBER STATISTICS

### Valuation Data Summary

	June 30, 2023		June 30, 2022	
	Tiers 1 & 2	Tier 3	Tiers 1 & 2	Tier 3
<b>Actives</b>				
Number	7	2	8	2
Average Current Age	43.7	31.1	43.6	30.1
Average Age at Employment	28.6	29.3	28.4	29.3
Average Past Service	15.1	1.8	15.2	0.8
Average Annual Salary	\$90,585	\$80,257	\$88,510	\$68,965
<b>Actives (transferred)</b>				
Number	5	1	3	1
Average Current Age	35.2	33.0	36.2	32.0
Average Age at Employment	24.7	28.3	24.5	28.3
Average Past Service	10.5	4.8	11.7	3.8
Average Annual Salary	\$78,588	\$89,544	\$73,780	\$74,620
<b>Retirees</b>				
Number	17	0	16	0
Average Current Age	65.7	N/A	65.3	N/A
Average Annual Benefit	\$59,210	N/A	\$57,230	N/A
<b>Drop Retirees</b>				
Number	3	N/A	3	N/A
Average Current Age	47.0	N/A	47.5	N/A
Average Annual Benefit	\$53,922	N/A	\$61,315	N/A
<b>Beneficiaries</b>				
Number	1	0	1	0
Average Current Age	82.7	N/A	81.7	N/A
Average Annual Benefit	\$54,373	N/A	\$53,307	N/A
<b>Disability Retirees</b>				
Number	2	0	2	0
Average Current Age	63.3	N/A	62.3	N/A
Average Annual Benefit	\$42,028	N/A	\$41,204	N/A
<b>Inactive / Vested</b>				
Number	2	1	2	0
Average Current Age	53.1	36.8	52.1	N/A
Average Accumulated Contributions	\$7,858	\$8,351	\$7,858	N/A
<b>Total Number</b>	<b>37</b>	<b>4</b>	<b>35</b>	<b>3</b>
<b>Former Members (transferred)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### 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	30+			
<20	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0	0
30 - 34	0	2	0	0	0	0	0	2	150,055	75,028
35 - 39	0	1	4	2	0	0	0	7	583,271	83,324
40 - 44	0	0	0	1	0	0	0	1	85,069	85,069
45 - 49	0	0	0	0	0	0	0	0	0	0
50 - 54	0	0	0	1	0	0	0	1	84,755	84,755
55 - 59	0	0	0	1	0	0	0	1	123,885	123,885
60 - 64	0	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>1,027,035</b>	<b>85,586</b>

### 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	30+			
<20	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0	0
25 - 29	1	0	0	0	0	0	0	1	80,486	80,486
30 - 34	1	0	0	0	0	0	0	1	89,544	89,544
35 - 39	1	0	0	0	0	0	0	1	80,027	80,027
40 - 44	0	0	0	0	0	0	0	0	0	0
45 - 49	0	0	0	0	0	0	0	0	0	0
50 - 54	0	0	0	0	0	0	0	0	0	0
55 - 59	0	0	0	0	0	0	0	0	0	0
60 - 64	0	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>250,057</b>	<b>83,352</b>

### In-Payment Counts and Benefit Summary – All Tiers

Age	Count	Average Annual Benefit
< 40	0	0
40 - 44	0	0
45 - 49	0	0
50 - 54	1	46,015
55 - 59	2	60,988
60 - 64	4	48,527
65 - 69	9	58,427
70 - 74	3	67,561
75 - 79	0	0
80 - 84	1	54,373
85 - 89	0	0
90 - 94	0	0
95 - 99	0	0
100+	0	0
Total	20	57,250

*“In-Payment” refers to retired, beneficiary, and disabled members.*

## VI. ACTUARIAL ASSUMPTIONS AND METHODS

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### 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

\$115,868 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 1.03 for male members and 1.08 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 1.03 for male retirees and 1.11 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 0.98 for male beneficiaries and adjusted by a factor of 1.06 for female beneficiaries, with generational improvements using 85% of the most recent projection scale (currently Scale MP-2021).

***Disabled Lives:***

PubS-2010 Disabled mortality, adjusted by a factor of 1.08 for male disabled members and 1.01 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.

Retirement / DROP Rates

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 age 62 before attaining 20 years of service:***

Age-related rates based on age at retirement:

Police - 40% assumed at age 62 and 63, 35% assumed at age 64, 25% assumed at ages 65 and 66, 50% assumed at ages 67 – 69, and 100% assumed at age 70.

Fire - 25% assumed at age 62 and 63, 35% assumed at age 64, 25% assumed at ages 65 and 66, 50% assumed at ages 67 – 69, and 100% assumed at age 70.

***Tier 1 – reaching age 62 after attaining 20 years of service:***

Service-related rates based on service at retirement. See complete tables at the end of this section.

65% are assumed to enter the DROP program while the remaining 35% are assumed to retire and commence benefits immediately. DROP periods are assumed to be 5 years in length for future DROP elections.

***Tiers 2 & 3:***

Age-related rates based on age at retirement. 50% assumed at age 53, 30% assumed at ages 54 – 59, 60% assumed at ages 60 – 63, and 100% assumed at age 64.

Termination Rate

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.

Disability Rate

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. 90% of disablements are assumed to be duty-related.

Marital Status

For active members, 85% of males and 60% 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 four years older than female members and female spouses are assumed to be two years younger than males members.

Benefit Commencement

Deferred members are assumed to commence benefits as follows:

- Tier 1: immediate refund of contributions
- Tiers 2 & 3 (less than 15 years service): immediate refund of contributions
- Tier 2 (15+ years service): life annuity payable at age 52.5
- Tier 3 (15+ years service): life annuity payable at age 55

Health Care Utilization

For active members, 70% 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.

***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

2.00% per year. This is annual increase for total employer payroll.

**Changes to Actuarial Assumptions and Methods Since the Prior Valuation**

The payroll growth assumption was lowered from 2.50% to 2.00%.

There were no method changes since the prior valuation.

**Salary Increase Rates**

Age	Maricopa Police	Pima Police	Other Police	Maricopa Fire	Pima Fire	Other Fire
20	15.00%	12.00%	14.00%	15.00%	12.00%	13.00%
21	14.00%	6.00%	12.00%	14.00%	11.00%	12.00%
22	13.00%	6.00%	10.00%	13.00%	10.00%	11.00%
23	12.00%	6.00%	9.00%	12.00%	9.50%	10.00%
24	11.00%	6.00%	8.00%	11.00%	9.00%	9.00%
25	10.00%	6.00%	7.00%	10.00%	8.50%	8.00%
26	9.00%	5.50%	6.50%	9.50%	7.50%	7.50%
27	8.00%	5.50%	6.25%	9.00%	6.50%	7.50%
28	7.50%	5.50%	6.00%	8.50%	5.75%	7.00%
29	7.00%	5.50%	5.80%	8.00%	5.75%	6.50%
30	6.50%	5.25%	5.60%	8.00%	5.50%	6.50%
31	6.00%	5.25%	5.40%	7.50%	5.50%	6.00%
32	5.50%	5.00%	5.20%	7.00%	5.00%	5.50%
33	5.10%	5.00%	5.00%	6.50%	5.00%	5.50%
34	4.90%	5.00%	4.90%	6.50%	5.00%	5.50%
35	4.70%	4.50%	4.80%	6.00%	5.00%	5.50%
36	4.50%	4.50%	4.70%	5.50%	5.00%	5.50%
37	4.30%	4.50%	4.60%	5.25%	4.50%	5.00%
38	4.10%	4.00%	4.50%	5.00%	4.50%	5.00%
39	4.00%	4.00%	4.40%	4.75%	4.50%	5.00%
40	3.90%	4.00%	4.30%	4.75%	4.50%	5.00%
41	3.80%	3.80%	4.20%	4.50%	4.50%	4.50%
42	3.70%	3.60%	4.10%	4.50%	4.00%	4.50%
43	3.60%	3.40%	4.00%	4.50%	4.00%	4.50%
44	3.50%	3.20%	3.90%	4.50%	4.00%	4.00%
45	3.50%	3.00%	3.80%	4.25%	4.00%	4.00%
46	3.50%	3.00%	3.70%	4.25%	3.75%	4.00%
47	3.50%	3.00%	3.60%	4.25%	3.75%	3.75%
48	3.50%	3.00%	3.50%	4.00%	3.75%	3.75%
49	3.50%	3.00%	3.50%	4.00%	3.50%	3.75%
50	3.25%	3.00%	3.50%	3.75%	3.50%	3.75%
51	3.25%	3.00%	3.50%	3.75%	3.50%	3.75%
52	3.25%	2.75%	3.50%	3.75%	3.50%	3.75%
53+	3.25%	2.75%	3.50%	3.75%	3.25%	3.75%



**Tier 1 Retirement Rates– reaching age 62 after attaining 20 years of service**

Service	Maricopa Police	Pima Police	Other Police	Maricopa Fire	Pima Fire	Other Fire
20	28%	28%	35%	14%	20%	20%
21	25%	25%	35%	17%	20%	25%
22	15%	16%	22%	7%	13%	15%
23	12%	12%	12%	7%	7%	10%
24	8%	9%	12%	7%	7%	10%
25	30%	22%	25%	17%	22%	30%
26	42%	42%	40%	30%	26%	30%
27	32%	30%	28%	23%	30%	30%
28	32%	30%	28%	30%	30%	30%
29	32%	20%	28%	30%	30%	30%
30	35%	25%	35%	30%	30%	35%
31	35%	33%	30%	40%	30%	35%
32	60%	50%	70%	55%	30%	35%
33	60%	50%	70%	55%	60%	60%
34+	100%	100%	100%	100%	100%	100%

**Termination Rates**

Service	Maricopa Police	Pima Police	Other Police	Maricopa Fire	Pima Fire	Other Fire
0	13.0%	14.0%	13.5%	4.5%	10.0%	10.5%
1	8.0%	9.0%	11.5%	3.5%	6.0%	8.5%
2	6.0%	7.5%	10.5%	2.5%	4.5%	8.0%
3	4.5%	7.0%	9.5%	2.0%	4.0%	8.0%
4	3.6%	6.5%	9.0%	1.5%	4.0%	7.0%
5	3.3%	5.0%	8.0%	1.5%	4.0%	5.0%
6	3.3%	5.0%	7.0%	1.5%	4.0%	5.0%
7	3.3%	4.0%	6.5%	1.5%	3.0%	4.0%
8	2.4%	4.0%	6.5%	1.5%	3.0%	4.0%
9	2.4%	4.0%	6.0%	1.5%	3.0%	3.5%
10	2.4%	4.0%	5.0%	1.0%	2.0%	3.0%
11	1.8%	3.0%	4.0%	1.0%	2.0%	2.5%
12	1.8%	3.0%	4.0%	1.0%	1.5%	2.0%
13	1.3%	2.0%	3.5%	1.0%	1.0%	1.5%
14	1.3%	2.0%	3.0%	0.5%	1.0%	1.4%
15	0.8%	1.5%	2.5%	0.5%	1.0%	1.4%
16	0.8%	1.5%	2.0%	0.5%	0.5%	1.4%
17	0.8%	1.0%	2.0%	0.5%	0.5%	1.4%
18	0.8%	1.0%	1.8%	0.5%	0.5%	1.4%
19	0.8%	1.0%	1.8%	0.5%	0.5%	0.5%
20+	0.5%	1.0%	1.8%	0.4%	0.5%	0.5%

**Disability Rates**

Age	Maricopa Police	Pima Police	Other Police	Maricopa Fire	Pima Fire	Other Fire
20	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
21	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
22	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
23	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
24	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
25	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
26	0.100%	0.100%	0.160%	0.035%	0.020%	0.020%
27	0.100%	0.100%	0.160%	0.035%	0.020%	0.020%
28	0.100%	0.100%	0.160%	0.035%	0.020%	0.020%
29	0.100%	0.100%	0.160%	0.035%	0.020%	0.020%
30	0.100%	0.100%	0.160%	0.035%	0.020%	0.020%
31	0.230%	0.180%	0.240%	0.090%	0.100%	0.060%
32	0.230%	0.180%	0.240%	0.090%	0.100%	0.060%
33	0.230%	0.180%	0.240%	0.090%	0.100%	0.060%
34	0.230%	0.180%	0.240%	0.090%	0.100%	0.060%
35	0.230%	0.180%	0.240%	0.090%	0.100%	0.060%
36	0.450%	0.350%	0.320%	0.150%	0.150%	0.140%
37	0.450%	0.350%	0.320%	0.150%	0.150%	0.140%
38	0.450%	0.350%	0.320%	0.150%	0.150%	0.140%
39	0.450%	0.350%	0.320%	0.150%	0.150%	0.140%
40	0.450%	0.350%	0.320%	0.150%	0.150%	0.140%
41	0.520%	0.650%	0.550%	0.170%	0.300%	0.250%
42	0.520%	0.650%	0.550%	0.170%	0.300%	0.250%
43	0.520%	0.650%	0.550%	0.170%	0.300%	0.250%
44	0.520%	0.650%	0.550%	0.170%	0.300%	0.250%
45	0.520%	0.650%	0.550%	0.170%	0.300%	0.250%
46	0.650%	0.750%	0.750%	0.300%	0.420%	0.420%
47	0.650%	0.750%	0.750%	0.300%	0.420%	0.420%
48	0.650%	0.750%	0.750%	0.300%	0.420%	0.420%
49	0.650%	0.750%	0.750%	0.300%	0.420%	0.420%
50	0.650%	0.750%	0.750%	0.300%	0.420%	0.420%
51	0.800%	0.800%	0.800%	0.700%	0.750%	0.750%
52	0.800%	0.800%	0.800%	0.700%	0.750%	0.750%
53	0.800%	0.800%	0.800%	0.700%	0.750%	0.750%
54	0.800%	0.800%	0.800%	0.700%	0.750%	0.750%
55	0.800%	0.800%	0.800%	0.700%	0.750%	0.750%
56+	1.000%	0.850%	0.900%	1.100%	0.800%	1.000%

## VII. DISCUSSION OF RISK

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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.” For a better understanding of the overall Plan and the impact of these risks, please refer to the consolidated PSPRS valuation report.

### **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 \$31,059,044 for Tiers 1 and 2 and \$277,283,390 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.

## Plan Maturity Measures and Other Risk Metrics - Tiers 1 & 2

	6/30/2023	6/30/2022	6/30/2021	6/30/2020
<b>Support Ratio</b>				
Total Actives	12	11	13	14
Total Inactives	25	24	23	23
Actives / Inactives	48.0%	45.8%	56.5%	60.9%
<b>Asset Volatility Ratio</b>				
Market Value of Assets (MVA)	18,584,594	18,347,937	20,205,933	5,607,863
Total Annual Payroll	1,027,035	929,423	1,054,218	1,120,421
MVA / Total Annual Payroll	1,809.5%	1,974.1%	1,916.7%	500.5%
<b>Accrued Liability (AL) Ratio</b>				
Inactive Accrued Liability	17,500,312	16,782,253	15,329,252	14,518,345
Total Accrued Liability	21,035,885	20,538,606	19,884,116	19,179,700
Inactive AL / Total AL	83.2%	81.7%	77.1%	75.7%
<b>Funded Ratio</b>				
Actuarial Value of Assets (AVA)	18,927,171	18,847,435	18,472,615	6,037,915
Total Accrued Liability	21,035,885	20,538,606	19,884,116	19,179,700
AVA / Total Accrued Liability	90.0%	91.8%	92.9%	31.5%
<b>Net Cash Flow Ratio</b>				
Net Cash Flow <sup>1</sup>	(1,122,348)	(1,093,274)	12,234,060	190,964
Market Value of Assets (MVA)	18,584,594	18,347,937	20,205,933	5,607,863
Net Cash Flow / MVA	(6.0%)	(6.0%)	60.5%	3.4%

<sup>1</sup> 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 <sup>1</sup>

	6/30/2023	6/30/2022	6/30/2021	6/30/2020
<b>Support Ratio</b>				
Total Actives	3,052	2,417	2,560	1,408
Total Inactives	450	327	307	130
Actives / Inactives	678.2%	739.1%	833.9%	1,083.1%
<b>Asset Volatility Ratio</b>				
Market Value of Assets (MVA)	119,338,352	74,774,123	51,992,240	22,964,925
Total Annual Payroll	226,680,964	165,151,543	115,883,115	84,448,996
MVA / Total Annual Payroll	52.6%	45.3%	44.9%	27.2%
<b>Accrued Liability (AL) Ratio</b>				
Inactive Accrued Liability	9,349,377	4,598,114	2,290,610	1,173,104
Total Accrued Liability	110,961,191	68,939,204	42,733,537	23,239,599
Inactive AL / Total AL	8.4%	6.7%	5.4%	5.0%
<b>Funded Ratio</b>				
Actuarial Value of Assets (AVA)	119,101,476	76,171,857	45,863,401	23,570,444
Total Accrued Liability	110,961,191	68,939,204	42,733,537	23,239,599
AVA / Total Accrued Liability	107.3%	110.5%	107.3%	101.4%
<b>Net Cash Flow Ratio</b>				
Net Cash Flow <sup>2</sup>	36,208,171	25,802,686	18,607,209	13,192,598
Market Value of Assets (MVA)	119,338,352	74,774,123	51,992,240	22,964,925
Net Cash Flow / MVA	30.3%	34.5%	35.8%	57.4%

<sup>1</sup> Tier 3 results are shown for the Risk Sharing group, where applicable.

<sup>2</sup> 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

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*The following is a summary of the benefit provisions provided in Title 38, Chapter 5, Article 4 of the Arizona Revised Statutes.*

### Membership

Full-time employees of an eligible group, prior to attaining age 65, who are engaged to work for more than six months in a calendar year. Tier 3 Defined Contribution members are able to elect participation in post-retirement health insurance subsidy.

### Benefit Tiers

Benefits differ for members based on their hire date:

<u>Tier</u>	<u>Hire Date</u>
1	Hired before January 1, 2012
2	Hired on or after January 1, 2012 but before July 1, 2017
3	Hired on or after July 1, 2017

### Compensation

Compensation is the amount including base salary, overtime pay, shift and military differential pay, compensatory time used in lieu of overtime pay, and holiday pay, paid to an employee on a regular payroll basis and longevity pay paid at least every six months for which contributions are made to the System. For Tier 3 members, compensation is limited by statutory cap (\$110,000 with adjustments by the Board).

### Average Monthly Benefit Compensation

#### ***Tier 1:***

The highest compensation paid to member during three consecutive years out of the last 20 years of Credited Service, divided by months.

#### ***Tier 2:***

The highest compensation paid to member during five consecutive years out of the last 20 years of Credited Service, divided by months.

#### ***Tier 3:***

The highest compensation paid to member during five consecutive years out of the last 15 years of Credited Service, divided by months.

### Credited Service

Total periods of service, both before and after the member's date of participation, for which the member made contributions to the fund.

### Normal Retirement Date

#### ***Tier 1:***

First day of month following attainment of 1) 20 years of service or



2) 62<sup>nd</sup> birthday and completion of 15 years of service.

**Tier 2:**

First day of month following the attainment of age 52.5 and completion of 15 years of service.

**Tier 3:**

First day of month following the attainment of age 55 and completion of 15 years of service.

Benefit

**Tier 1:**

50% of Average Monthly Benefit Compensation, adjusted based on Credited Service as follows (maximum benefit of 80% of Average Monthly Benefit Compensation):

<u>Credited Service</u>	<u>Benefit Adjustment</u>
15 years, but less than 20	Reduced 4% per year less than 20
20 years, but less than 25	Plus 2% per year between 20 and 25
25+ years	Plus 2.5% per year above 20

**Tier 2:**

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

<u>Credited Service</u>	<u>Benefit Multiplier</u>
15 years, but less than 17	1.50%
17 years, but less than 19	1.75%
19 years, but less than 22	2.00%
22 years, but less than 25	2.25%
25+ years	2.50%

**Tier 3:**

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

<u>Credited Service</u>	<u>Benefit Multiplier</u>
15 years, but less than 17	1.50%
17 years, but less than 19	1.75%
19 years, but less than 22	2.00%
22 years, but less than 25	2.25%
25+ years	2.50%

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.
<u>Early Retirement</u>	<b><i>Only applicable to Tier 3 members:</i></b>
Date	Attainment of age 52.5 and 15 years of Credited Service.
Benefit	Actuarial equivalent of Normal Retirement benefit.
<u>Disability Benefit – Accidental (duty-related)</u>	
Eligibility	Total and permanent disability incurred in performance of duty.
Benefit Amount	A maximum of: a.) 50% of Average Monthly Benefit Compensation, and; b.) The monthly Normal Retirement pension that the member is entitled to receive if he or she retired immediately.
<u>Disability Benefit – Ordinary (not duty-related)</u>	
Eligibility	Total and permanent disability not incurred in performance of duty.
Benefit Amount	Normal Retirement pension that the member is entitled to receive, prorated based on Credited Service earned over the required Credited Service for Normal Retirement (maximum ratio of 1).
<u>Disability Benefit – Other</u>	
Temporary	Benefit equals 1/12 of 50% of compensation during year preceding date of disability. Payments terminate after 12 months.
Catastrophic	Benefit equals 90% of Average Monthly Benefit Compensation. After 60 months member receives greater of 62.5% Average Monthly Benefit Compensation and accrued normal pension.
<u>Pre-Retirement Death Benefit</u>	
Service Incurred	<i>Payable following death of active member</i> 100% of Average Monthly Benefit Compensation, reduced by child's pension.
Non-Service Incurred	80% of benefit based on calculation for accidental disability retirement.
Child's Pension	10% of pension for each child (maximum 20% paid) based on calculation for accidental disability retirement. Payable to dependent child under age 18 (23 if full-time student).

Guardian’s Pension Same as spouse’s pension. Payable (along with child’s pension) when no spouse is being paid and there is at least one child under 18 (23, if full-time student).

Accumulated Contributions Any contributions remaining upon the death of the last beneficiary shall be paid as a lump sum.

Vesting (Termination)

Vesting Service Requirement **Tier 1:**  
 10 years of Credited Service.  
**Tiers 2 & 3:**  
 15 years of Credited Service.

Non-Vested Benefit **Tier 1:**  
 Lump sum payment of accumulated contributions, plus additional amount based on years of Credited Service.

<u>Service</u>	<u>Additional % of Contributions</u>
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.

Vested Benefit **Tier 1:**  
 Deferred retirement 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.

**Tiers 2 & 3:**  
 Calculated same as normal retirement pension. Payable if contributions left in fund until reach age requirement. Member is entitled to survivor benefits, benefit increases, and group health insurance subsidy.

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. Adjustment does not apply while in DROP.

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 first calendar year after the 7<sup>th</sup> 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, 2017 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, 2017 is 90% or more;
- 1.5%, if funded ratio for members who are hired on or after July 1, 2017 is 80-90%;
- 1%, if funded ratio for members who are hired on or after July 1, 2017 is 70-80%.

Deferred Retirement Option Plan (DROP):

Eligibility	Tier 1 and 20 years of Credited Service.
DROP Period	Maximum 84 months.
Member Contributions	Cease upon DROP entry.
Benefit Amount	Calculated based on Credited Service and average monthly compensation as of the beginning of the DROP period, credited to DROP participation account for DROP period.

Interest on DROP Participation Account	<u>Beginning Year</u>	<u>Interest Rate</u>
	July 1, 2016	7.40%
	July 1, 2018	7.30%
	July 1, 2022	7.20%
Payment of DROP Participation Account	Payable as lump sum distribution to Public Safety Personnel Defined Contribution Retirement Plan at earlier of 1) end of DROP period, 2) at termination, or 3) five years.	
Payment Monthly Benefit	System commences payment of benefit amount at the earlier of 1) the end of the DROP period and 2) at termination.	

Post-Retirement Health Insurance Subsidy

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

Maximum Subsidy Amounts (monthly)		<u>Member Only</u>	<u>With Dependents</u>
	Medicare Eligible	\$100	\$170
	One w/ Medicare	N/A	\$215
	Not Medicare Eligible	\$150	\$260

Employee Contributions

**Tiers 1 & 2:**  
 7.65% (effective July 1, 2023).

**Tier 3:**  
 50% of total contribution, which is Normal Cost plus a level-dollar amortization of unfunded actuarial accrued liability over a closed period not to exceed 10 years.

Employer Contributions

**Tiers 1 & 2:**  
 Normal Cost plus amortization of unfunded actuarial accrued liability over a closed period not to exceed 20 years (subject to one-time election to extend to closed period not to exceed 30 years).

**Tier 3:**  
 50% of total contribution, which is Normal Cost plus 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

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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

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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.

**ARIZONA PUBLIC SAFETY PERSONNEL  
RETIREMENT SYSTEM**

**TUCSON AIRPORT AUTHORITY POLICE DEPT. (125)**

ACTUARIAL VALUATION  
AS OF JUNE 30, 2023

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



**FOSTER & FOSTER**  
ACTUARIES AND CONSULTANTS

December 2023

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

*Re: Actuarial Valuation Report as of June 30, 2023 for Tucson Airport Authority Police Dept. (125)*

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, 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.

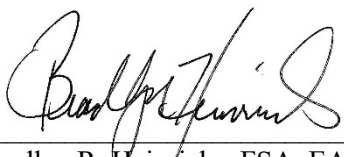
The undersigned are familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All sections of this report are considered an integral part of the actuarial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

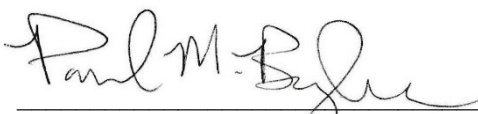
To our knowledge, no associate of Foster & Foster, Inc. working on valuations of the program has any direct financial interest or indirect material interest in the Arizona Public Safety Personnel Retirement System, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the 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 Tucson Airport Authority Police Dept., 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	29.23%	0.00%	29.23%	8.63%	0.12%	8.75%
Funded Status	94.9%	128.4%	95.3%	107.3%	212.5%	108.9%

## 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

Valuation Date	Tier 1 & Tier 2 Members			Tier 3 Members *		
	Pension	Health	Total	Pension	Health	Total
June 30, 2022	23.96%	0.00%	23.96%	8.69%	0.12%	8.81%
June 30, 2023	29.23%	0.00%	29.23%	8.63%	0.12%	8.75%

### Funded Status

Valuation Date	Tier 1 & Tier 2 Members			Tier 3 Members		
	Pension	Health	Total	Pension	Health	Total
June 30, 2022	95.4%	133.6%	95.8%	110.5%	212.1%	112.1%
June 30, 2023	94.9%	128.4%	95.3%	107.3%	212.5%	108.9%

\* 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	23.96%	0.00%	8.69%	0.12%
Asset Experience	0.45%	0.00%	(0.02%)	0.00%
Payroll Base	0.78%	(0.04%)	0.00%	0.00%
Liability Experience	(1.01%)	0.00%	(0.16%)	0.00%
Additional Contribution	0.00%	0.00%	0.00%	0.00%
Assumption/Method Change	0.00%	0.00%	0.00%	0.00%
Actuarial Audit	1.19%	0.00%	0.33%	0.00%
Other	<u>3.86%</u>	<u>0.04%</u>	<u>(0.21%)</u>	<u>0.00%</u>
Contribution Rate This Valuation	29.23%	0.00%	8.63%	0.12%

	Funded Status			
	Tier 1 & Tier 2		Tier 3 Members	
	Pension	Health	Pension	Health
Funded Status Last Valuation	95.4%	133.6%	110.5%	212.1%
Asset Experience	(0.3%)	0.0%	0.3%	1.1%
Liability Experience	0.6%	4.7%	2.5%	7.2%
Additional Contribution	0.0%	0.0%	0.0%	0.0%
Assumption/Method Change	0.0%	0.0%	0.0%	0.0%
Actuarial Audit	(0.6%)	(0.4%)	(1.6%)	(0.7%)
Other	<u>(0.2%)</u>	<u>(9.5%)</u>	<u>(4.4%)</u>	<u>(7.2%)</u>
Funded Status This Valuation	94.9%	128.4%	107.3%	212.5%

**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, 2023 was 7.7% for Tiers 1 and 2 and 9.2% for Tier 3. On a smoothed, actuarial value of assets basis, however, the average return was 6.9% for Tiers 1 and 2 and 7.3% for Tier 3. These returns nearly met the 2022 assumed earnings rate for Tiers 1 and 2 of 7.2% and exceeded the 2022 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 continued the decrease in the payroll growth assumption from 2.50% to 2.00%.

**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.

**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. This also includes the change due to HB2088, which removes the “maintenance of effort” adjustment to the unfunded liability amortization. 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, 2023 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 93.2% (instead of 94.9%) and the pension employer contribution requirement would be 31.87% of payroll (instead of 29.23%).

#### 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
<b>Pension</b>				
Normal Cost				
Total Normal Cost	28.54%	\$ 374,409	25.10%	\$ 379,614
Employee Cost	<u>(7.65%)</u>	<u>(100,358)</u>	<u>(7.65%)</u>	<u>(115,699)</u>
Employer (Net) Normal Cost	20.89%	274,051	17.45%	263,915
Amortization of Unfunded Liability	<u>8.34%</u>	<u>109,410</u>	<u>6.51%</u>	<u>98,458</u>
Total Employer Cost (Pension)	29.23%	383,461	23.96%	362,373
<b>Health</b>				
Normal Cost	0.32%	4,198	0.35%	5,293
Amortization of Unfunded Liability	<u>(0.32%)</u>	<u>(4,198)</u>	<u>(0.35%)</u>	<u>(5,293)</u>
Total Employer Cost (Health)	0.00%	0	0.00%	0
<b>Total Employer Cost (Pension + Health)</b>	<b>29.23%</b>	<b>383,461</b>	<b>23.96%</b>	<b>362,373</b>
Alternate Contribution Rate (ACR) *	8.34%		8.00%	
Underlying Payroll (as of valuation date)		1,286,152		1,475,519

\* 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 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, 2023	June 30, 2022
Applicable to Fiscal Year Ending	2025	2024

**Defined Benefit (DB) Retirement Plan**

	Rate	Dollar	Rate	Dollar
<b>Pension</b>				
Total Normal Cost	17.25%	\$ 61,986	17.37%	\$ 55,167
Amortization of Unfunded Liability	<u>0.00%</u>	<u>0</u>	<u>0.00%</u>	<u>0</u>
Total Pension Cost	17.25%	61,986	17.37%	55,167
Employee (EE) Pension Cost	8.63%	30,993	8.69%	27,584
Employer (ER) Pension Cost	8.63%	30,993	8.69%	27,584
<b>Health</b>				
Total Normal Cost	0.23%	826	0.24%	762
Amortization of Unfunded Liability	<u>0.00%</u>	<u>0</u>	<u>0.00%</u>	<u>0</u>
Total Health Cost	0.23%	826	0.24%	762
Employee (EE) Health Cost	0.12%	413	0.12%	381
Employer (ER) Health Cost	0.12%	413	0.12%	381
<b>Total</b>				
Total Calculated Tier 3 Required EE/ER Individual Cost	8.75%	31,406	8.81%	27,965
Funding Policy Tier 3 Required EE/ER Individual Cost <sup>1</sup>	8.89%	31,945	9.56%	30,363
ER Legacy Cost of Tiers 1 & 2 Amort of Unfunded Liabilities <sup>2</sup>	8.34%	29,969	6.51%	20,676
<b>Total Funding Policy Tier 3 Required ER Defined Benefit Cost</b>	<b>17.23%</b>	<b>61,914</b>	<b>16.07%</b>	<b>51,039</b>
Underlying Payroll (as of valuation date)		352,295		309,856

<sup>1</sup> The “Funding Policy” cost was adopted in 2023 and first reflected in the June 30, 2023 valuation.

<sup>2</sup> 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.

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

**Defined Contribution (DC) Retirement Plan**

	Rate	Dollar	Rate	Dollar
<b>Tier 2 &amp; 3 DB / Non-Social Security</b>				
Employee Cost	3.00%		3.00%	
Employer Cost <sup>1</sup>	3.00%		3.00%	
<b>Tier 3 DC Only</b>				
Employee Cost	9.00%	\$ 0	9.00%	\$ 0
Employee Health Subsidy Program Cost	0.23%	0	0.17%	0
Employee Disability Program Cost	<u>1.50%</u>	<u>0</u>	<u>1.43%</u>	<u>0</u>
<b>Total Employee Cost</b>	<b>10.73%</b>	<b>0</b>	<b>10.60%</b>	<b>0</b>
Employer Cost	9.00%	0	9.00%	0
Employer Health Subsidy Program Cost	0.23%	0	0.17%	0
Employer Disability Program Cost	<u>1.50%</u>	<u>0</u>	<u>1.43%</u>	<u>0</u>
<b>Total Employer Cost (before Legacy)</b>	<b>10.73%</b>	<b>0</b>	<b>10.60%</b>	<b>0</b>
ER Legacy Cost of Tiers 1 & 2 Amort of Unfunded Liabilities <sup>2</sup>	8.34%	0	6.51%	0
<b>Total Employer Cost</b>	<b>19.07%</b>	<b>0</b>	<b>17.11%</b>	<b>0</b>
Underlying Payroll (as of valuation date)		0		0

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

<sup>2</sup> 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		
Membership Date On or After	7/1/1968		1/1/2012		7/1/2017		
Participates in Social Security	N/A		Yes	No	Yes	No	N/A
Available Retirement Plan <sup>1</sup>	DB Only	DB Only	Hybrid	DB Only	Hybrid	DC Only	
<b>Employee Contribution Rate</b>							
PSPRS DB Rate	7.65%	7.65%	7.65%	8.89%	8.89%		
PSPRS DC Rate			3.00%		3.00%	9.00%	
Employer Health Subsidy Program Cost						0.23%	
PSPDCRP Disability Program Rate						1.50%	
<b>Total EE Contribution Rate</b>	7.65%	7.65%	10.65%	8.89%	11.89%	10.73%	
<b>Employer Contribution Rate</b>							
PSPRS DB Normal Cost	21.21%	21.21%	21.21%	8.89%	8.89%		
PSPRS DB Tier 1 & 2 Legacy Cost <sup>2</sup>	8.02%	8.02%	8.02%	8.34%	8.34%	8.34%	
PSPRS DC Rate <sup>3</sup>			4.00%		3.00%	9.00%	
Employer Health Subsidy Program Cost						0.23%	
PSPDCRP Disability Program Rate						1.50%	
<b>Total ER Contribution Rate</b>	29.23%	29.23%	33.23%	17.23%	20.23%	19.07%	

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

<sup>2</sup> 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.

<sup>3</sup> 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, 2023 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
<b>Impact On</b>											
Funded Status - June 30, 2023	94.9%	95.4%	95.8%	96.2%	96.6%	97.0%	97.4%	97.8%	98.2%	98.7%	99.1%
FYE 2025 Contribution Rate	29.23%	28.61%	27.99%	27.37%	26.75%	26.13%	25.51%	24.89%	24.27%	23.64%	23.02%

Table shows the hypothetical change in the funded status and contribution rate from the June 30, 2023 actuarial valuation results for Tiers 1 & 2 if an additional contribution of the amount shown had been made to the Fund on June 30, 2023. 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
<b>TIERS 1 &amp; 2</b>	2019	2021	12.59%	82.49%	95.08%	0.45%	(0.23%)	0.22%
	2020	2022	15.90%	81.63%	97.53%	0.39%	(0.37%)	0.02%
	2021	2023	17.03%	7.14%	24.17%	0.43%	(0.43%)	0.00%
	2022	2024	17.45%	6.51%	23.96%	0.35%	(0.35%)	0.00%
	2023	2025	20.89%	8.34%	29.23%	0.32%	(0.32%)	0.00%
<b>TIER 3 <sup>1</sup></b>	2019	2021	9.68%	0.00%	9.68%	0.26%	0.00%	0.26%
	2020	2022	9.68%	0.00%	9.68%	0.26%	0.00%	0.26%
	2021 <sup>2</sup>	2023	9.00%	0.00%	9.00%	0.12%	0.00%	0.12%
	2021	2023	9.68%	0.00%	9.68%	0.26%	0.00%	0.26%
	2022 <sup>2</sup>	2024	8.69%	0.00%	8.69%	0.12%	0.00%	0.12%
	2022	2024	9.30%	0.00%	9.30%	0.26%	0.00%	0.26%
	2023 <sup>2</sup>	2025	8.63%	0.00%	8.63%	0.12%	0.00%	0.12%
2023	2025	8.77%	0.00%	8.77%	0.12%	0.00%	0.12%	

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

<sup>2</sup> 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
<b>Pension</b>		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	\$ 18,381,578	\$ 17,337,960
DROP Members	1,838,160	1,722,922
Vested Members	364,400	130,139
Active Members	<u>6,155,991</u>	<u>6,959,808</u>
Total Actuarial Present Value of Benefits	26,740,129	26,150,829
Actuarial Accrued Liability (AAL)		
All Inactive Members	20,584,138	19,191,021
Active Members	<u>3,670,044</u>	<u>4,302,822</u>
Total Actuarial Accrued Liability	24,254,182	23,493,843
Actuarial Value of Assets (AVA)	23,027,511	22,415,389
Unfunded Actuarial Accrued Liability	1,226,671	1,078,454
PVB Funded Ratio (AVA / PVB)	86.1%	85.7%
AAL Funded Ratio (AVA / AAL)	94.9%	95.4%
<b>Health</b>		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	\$ 165,903	\$ 132,924
DROP Members	28,529	26,362
Active Members	<u>107,123</u>	<u>132,145</u>
Total Present Value of Benefits	301,555	291,431
Actuarial Accrued Liability (AAL)		
All Inactive Members	194,432	159,286
Active Members	<u>76,104</u>	<u>94,048</u>
Total Actuarial Accrued Liability	270,536	253,334
Actuarial Value of Assets (AVA)	347,242	338,460
Unfunded Actuarial Accrued Liability	(76,706)	(85,126)
PVB Funded Ratio (AVA / PVB)	115.2%	116.1%
AAL Funded Ratio (AVA / AAL)	128.4%	133.6%

Health liabilities were increased by \$11,912 under the lateral transfer methodology. Pension liabilities were not impacted.



### Liabilities and Funded Ratios by Benefit - Tier 3

	June 30, 2023	June 30, 2022
<b>Pension</b>		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	\$ 2,783,769	\$ 944,111
Vested Members	6,565,608	3,654,003
Active Members	<u>558,509,014</u>	<u>403,144,180</u>
Total Actuarial Present Value of Benefits	567,858,391	407,742,294
Actuarial Accrued Liability (AAL)		
All Inactive Members	9,349,377	4,598,114
Active Members	<u>101,611,814</u>	<u>64,341,090</u>
Total Actuarial Accrued Liability	110,961,191	68,939,204
Actuarial Value of Assets (AVA)	119,101,476	76,171,857
Unfunded Actuarial Accrued Liability	(8,140,285)	(7,232,653)
PVB Funded Ratio (AVA / PVB)	21.0%	18.7%
AAL Funded Ratio (AVA / AAL)	107.3%	110.5%
<b>Health</b>		
Actuarial Present Value of Benefits (PVB)		
Retirees and Beneficiaries	0	0
Active Members	<u>7,842,159</u>	<u>5,807,514</u>
Total Present Value of Benefits	7,842,159	5,807,514
Actuarial Accrued Liability (AAL)		
All Inactive Members	0	0
Active Members	<u>1,651,466</u>	<u>1,075,733</u>
Total Actuarial Accrued Liability	1,651,466	1,075,733
Actuarial Value of Assets (AVA)	3,508,666	2,281,928
Unfunded Actuarial Accrued Liability	(1,857,200)	(1,206,195)
PVB Funded Ratio (AVA / PVB)	44.7%	39.3%
AAL Funded Ratio (AVA / AAL)	212.5%	212.1%

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 Tucson Airport Authority Police Dept. 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, 2022	1,078,454	(85,126)	(7,232,653)	(1,206,195)
(2) Normal Cost Developed in Last Valuation	263,915	5,293	14,710,461	203,136
(3) Actual Contributions	386,691	0	18,581,041	1,010,859
(4) Expected Interest On (1), (2), and (3)	82,972	(5,748)	(118,890)	(107,979)
(5) Expected Unfunded Actuarial Accrued Liability as of June 30, 2023 (1)+(2)-(3)+(4)	1,038,650	(85,581)	(11,222,123)	(2,121,897)
(6) Changes to UAAL Due to Assumptions, Methods and Benefits	0	0	0	0
(7) Change to UAAL Due to Actuarial (Gain)/Loss	<u>188,021</u>	<u>8,875</u>	<u>3,081,838</u>	<u>264,697</u>
(8) Unfunded Actuarial Accrued Liability as of June 30, 2023	1,226,671	(76,706)	(8,140,285)	(1,857,200)

### Amortization of Unfunded Liabilities - Tiers 1 & 2

	Date Established	Outstanding Balance	Years Remaining	Amortization Rate
<b>Pension</b>	6/30/2019	0	13	0.00%
	6/30/2021	999,708	13	6.89%
	6/30/2022	31,745	14	0.21%
	6/30/2023	<u>195,218</u>	15	<u>1.24%</u>
	Total	1,226,671		8.34%
<b>Health</b>	6/30/2019	0	10	0.00%
	6/30/2021	0	10	0.00%
	6/30/2022	0	10	0.00%
	6/30/2023	<u>(45,687)</u>	10	<u>(0.37%)</u>
	Total	(45,687)		(0.37%)

### Amortization of Unfunded Liabilities - Tier 3

	Date Established	Outstanding Balance	Years Remaining	Amortization Rate *
<b>Pension</b>	6/30/2018	114,634	5	0.01%
	6/30/2019	(1,038,772)	6	(0.09%)
	6/30/2020	707,518	7	0.05%
	6/30/2021	(2,409,872)	8	(0.17%)
	6/30/2022	(4,031,414)	9	(0.26%)
	6/30/2023	<u>(1,482,379)</u>	10	<u>(0.09%)</u>
	Total	(8,140,285)		0.00%
<b>Health</b>	6/30/2018	(2,431)	5	0.00%
	6/30/2019	(94,973)	6	(0.01%)
	6/30/2020	(179,674)	7	(0.01%)
	6/30/2021	(348,185)	8	(0.02%)
	6/30/2022	(479,588)	9	(0.03%)
	6/30/2023	<u>(752,349)</u>	10	<u>(0.04%)</u>
	Total	(1,857,200)		0.00%

\* 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, 2023 Market Value Basis

	Tiers 1 & 2		Tier 3	
	Pension	Health	Pension	Health
<b>Additions</b>				
Contributions				
Member Contributions	\$ 117,410,792	\$ 0	\$ 40,441,215	\$ 0
Employer Contributions	1,211,172,334	0	40,447,269	0
Health Insurance Contributions	<u>0</u>	<u>3,595,544</u>	<u>0</u>	<u>1,975,775</u>
Total Contributions	1,328,583,126	3,595,544	80,888,484	1,975,775
Investment Income				
Net Increase in Fair Value	723,642,201	19,640,174	13,157,112	371,761
Interest and Dividends	205,449,236	5,576,041	3,735,435	105,547
Other Income	126,441,141	3,435,000	2,298,928	65,020
Less Investment Expenses	<u>(29,675,754)</u>	<u>(668,527)</u>	<u>(539,558)</u>	<u>(12,654)</u>
Net Investment Income	1,025,856,824	27,982,688	18,651,917	529,674
Non-investment Income	32,684	0	594	0
Transfers In	66,736	0	40,465	0
Total Additions	2,354,539,370	31,578,232	99,581,460	2,505,449
<b>Deductions</b>				
Distributions to Members				
Benefit Payments	1,067,901,240	0	382,013	0
Health Insurance Subsidy	0	17,880,074	0	1,800
Refund of Contributions	<u>12,146,940</u>	<u>0</u>	<u>1,476,602</u>	<u>0</u>
Total Distributions	1,080,048,180	17,880,074	1,858,615	1,800
Administrative Expenses	6,611,492	206,872	120,063	3,916
Transfers Out	433,659	0	0	0
Other	0	0	0	0
Total Deductions	1,087,093,331	18,086,946	1,978,678	5,716
<b>Net Increase / (Decrease)</b>	1,267,446,039	13,491,286	97,602,782	2,499,733
<b>Net Position Held in Trust</b>				
Prior Valuation	13,042,796,696	374,026,053	162,622,481	4,835,416
Beginning of the Year Adjustment	0	0	0	0
End of the Year	14,310,242,735	387,517,339	260,225,263	7,335,149

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

### A. Investment Income

A1. Actual Investment Income	\$ 1,019,245,332
A2. Expected Amount for Immediate Recognition	947,861,295
A3. Amount Subject to Amortization	71,384,037

B. Amortization Schedule	Year Ended June 30						
	2023	2024	2025	2026	2027	2028	2029
2023 Experience (A3 / 7)	10,197,720	10,197,720	10,197,720	10,197,720	10,197,720	10,197,720	10,197,717
2022 Experience	(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	238,978,745		
2020 Experience	(68,882,158)	(68,882,158)	(68,882,158)	(68,882,160)			
2019 Experience	(22,859,275)	(22,859,275)	(22,859,275)				
2018 Experience	(6,266,349)	(6,266,351)					
2017 Experience	33,380,148						
<b>Total Amortization</b>	<b>(19,902,419)</b>	<b>(53,282,569)</b>	<b>(47,016,218)</b>	<b>(24,156,945)</b>	<b>44,725,216</b>	<b>(194,253,529)</b>	<b>10,197,717</b>

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	13,397,869,480	
C2. Non-investment Net Cash Flow	248,200,707	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	14,574,029,063	
C4. Market Value of Assets, June 30, 2023	14,310,242,735	22,610,719
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	14,574,029,063	23,027,511

### D. Rates of Return

D1. Market Value Rate of Return	7.7%
D2. Actuarial Value Rate of Return	6.9%

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

### A. Investment Income

A1. Actual Investment Income	\$ 27,775,816
A2. Expected Amount for Immediate Recognition	26,424,570
A3. Amount Subject to Amortization	1,351,246

B. Amortization Schedule	Year Ended June 30						
	2023	2024	2025	2026	2027	2028	2029
2023 Experience (A3 / 7)	193,035	193,035	193,035	193,035	193,035	193,035	193,036
2022 Experience	(6,416,469)	(6,416,469)	(6,416,469)	(6,416,469)	(6,416,469)	(6,416,471)	
2021 Experience	9,257,478	9,257,478	9,257,478	9,257,478	9,257,481		
2020 Experience	(2,898,713)	(2,898,713)	(2,898,713)	(2,898,716)			
2019 Experience	(1,075,569)	(1,075,569)	(1,075,572)				
2018 Experience	(304,653)	(304,656)					
2017 Experience	1,532,136						
<b>Total Amortization</b>	<b>287,245</b>	<b>(1,244,894)</b>	<b>(940,241)</b>	<b>135,328</b>	<b>3,034,047</b>	<b>(6,223,436)</b>	<b>193,036</b>

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	380,136,214	
C2. Non-investment Net Cash Flow	(14,284,530)	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	392,563,499	
C4. Market Value of Assets, June 30, 2023	387,517,339	342,778
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	392,563,499	347,242

### D. Rates of Return

D1. Market Value Rate of Return	7.6%
D2. Actuarial Value Rate of Return	7.2%

### Development of Pension Actuarial Value of Assets - Tiers 3

#### A. Investment Income

A1. Actual Investment Income	\$ 18,531,854
A2. Expected Amount for Immediate Recognition	14,104,250
A3. Amount Subject to Amortization	4,427,604

B. Amortization Schedule	Year Ended June 30				
	2023	2024	2025	2026	2027
2023 Experience (A3 / 5)	885,521	885,521	885,521	885,521	885,520
2022 Experience	(3,259,379)	(3,259,379)	(3,259,379)	(3,259,381)	
2021 Experience	3,551,936	3,551,936	3,551,938		
2020 Experience	(351,296)	(351,294)			
2019 Experience	44,437				
<b>Total Amortization</b>	<b>871,219</b>	<b>826,784</b>	<b>1,178,080</b>	<b>(2,373,860)</b>	<b>885,520</b>

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	165,662,342	
C2. Non-investment Net Cash Flow	79,070,928	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	259,708,739	
C4. Market Value of Assets, June 30, 2023	260,225,263	119,338,352
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	259,708,739	119,101,476

#### D. Rates of Return

D1. Market Value Rate of Return	9.2%
D2. Actuarial Value Rate of Return	7.3%

### Development of Health Actuarial Value of Assets - Tiers 3

#### A. Investment Income

A1. Actual Investment Income	\$ 525,758
A2. Expected Amount for Immediate Recognition	406,400
A3. Amount Subject to Amortization	119,358

B. Amortization Schedule	Year Ended June 30				
	2023	2024	2025	2026	2027
2023 Experience (A3 / 5)	23,872	23,872	23,872	23,872	23,870
2022 Experience	(101,792)	(101,792)	(101,792)	(101,790)	
2021 Experience	128,963	128,963	128,961		
2020 Experience	(10,555)	(10,557)			
2019 Experience	1,508				
<b>Total Amortization</b>	<b>41,996</b>	<b>40,486</b>	<b>51,041</b>	<b>(77,918)</b>	<b>23,870</b>

C. Actuarial Value of Assets	Total	Employer
C1. Actuarial Value of Assets, June 30, 2022	4,875,299	
C2. Non-investment Net Cash Flow	1,973,975	
C3. Preliminary Actuarial Value of Assets, June 30, 2023 (A2 + B + C1 + C2)	7,297,670	
C4. Market Value of Assets, June 30, 2023	7,335,149	3,526,686
C5. Final Actuarial Value of Assets, June 30, 2023 (C3 Within 20% Corridor of C4)	7,297,670	3,508,666

#### D. Rates of Return

D1. Market Value Rate of Return	9.0%
D2. Actuarial Value Rate of Return	7.6%



## V. MEMBER STATISTICS

### Valuation Data Summary

	June 30, 2023		June 30, 2022	
	Tiers 1 & 2	Tier 3	Tiers 1 & 2	Tier 3
<b>Actives</b>				
Number	6	3	9	3
Average Current Age	45.9	27.6	46.5	26.9
Average Age at Employment	30.7	26.6	31.7	26.7
Average Past Service	15.2	1.0	14.8	0.2
Average Annual Salary	\$101,531	\$67,103	\$92,916	\$58,419
<b>Actives (transferred)</b>				
Number	7	2	7	2
Average Current Age	41.6	38.2	39.9	24.3
Average Age at Employment	28.3	36.5	27.4	23.9
Average Past Service	13.3	1.7	12.6	0.4
Average Annual Salary	\$90,049	\$66,713	\$83,503	\$58,919
<b>Retirees</b>				
Number	16	0	15	0
Average Current Age	65.6	N/A	65.3	N/A
Average Annual Benefit	\$53,206	N/A	\$52,212	N/A
<b>Drop Retirees</b>				
Number	2	N/A	2	N/A
Average Current Age	62.1	N/A	61.1	N/A
Average Annual Benefit	\$55,596	N/A	\$55,596	N/A
<b>Beneficiaries</b>				
Number	4	0	4	0
Average Current Age	70.7	N/A	69.7	N/A
Average Annual Benefit	\$51,957	N/A	\$50,938	N/A
<b>Disability Retirees</b>				
Number	8	0	8	0
Average Current Age	59.9	N/A	58.9	N/A
Average Annual Benefit	\$44,650	N/A	\$43,775	N/A
<b>Inactive / Vested</b>				
Number	5	1	3	0
Average Current Age	47.7	32.3	45.6	N/A
Average Accumulated Contributions	\$41,401	\$3,603	\$2,176	N/A
<b>Total Number</b>	<b>48</b>	<b>6</b>	<b>48</b>	<b>5</b>
<b>Former Members (transferred)</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>3</b>

### 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	30+			
<20	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0	0
30 - 34	0	2	0	0	0	0	0	2	175,786	87,893
35 - 39	0	2	1	0	0	0	0	3	275,508	91,836
40 - 44	0	0	0	3	0	0	0	3	322,294	107,431
45 - 49	0	0	0	0	0	0	0	0	0	0
50 - 54	0	0	0	4	0	0	0	4	389,551	97,388
55 - 59	0	0	0	0	0	1	0	1	76,391	76,391
60 - 64	0	0	0	0	0	0	0	0	0	0
65+	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	4	1	7	0	1	0	13	1,239,530	95,348

### 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	30+			
<20	0	0	0	0	0	0	0	0	0	0
20 - 24	1	0	0	0	0	0	0	1	74,446	74,446
25 - 29	2	0	0	0	0	0	0	2	142,734	71,367
30 - 34	1	0	0	0	0	0	0	1	59,516	59,516
35 - 39	0	0	0	0	0	0	0	0	0	0
40 - 44	0	0	0	0	0	0	0	0	0	0
45 - 49	0	0	0	0	0	0	0	0	0	0
50 - 54	1	0	0	0	0	0	0	1	58,039	58,039
55 - 59	0	0	0	0	0	0	0	0	0	0
60 - 64	0	0	0	0	0	0	0	0	0	0
65+	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	5	0	0	0	0	0	0	5	334,735	66,947

### In-Payment Counts and Benefit Summary – All Tiers

Age	Count	Average Annual Benefit
< 40	0	0
40 - 44	0	0
45 - 49	1	39,285
50 - 54	3	45,264
55 - 59	4	52,746
60 - 64	8	48,710
65 - 69	4	52,752
70 - 74	5	51,841
75 - 79	1	68,714
80 - 84	1	46,795
85 - 89	1	54,859
90 - 94	0	0
95 - 99	0	0
100+	0	0
Total	28	50,583

*“In-Payment” refers to retired, beneficiary, and disabled members.*

## VI. ACTUARIAL ASSUMPTIONS AND METHODS

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### 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

\$115,868 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 1.03 for male members and 1.08 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 1.03 for male retirees and 1.11 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 0.98 for male beneficiaries and adjusted by a factor of 1.06 for female beneficiaries, with generational improvements using 85% of the most recent projection scale (currently Scale MP-2021).

***Disabled Lives:***

PubS-2010 Disabled mortality, adjusted by a factor of 1.08 for male disabled members and 1.01 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.

Retirement / DROP Rates

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 age 62 before attaining 20 years of service:***

Age-related rates based on age at retirement:

Police - 40% assumed at age 62 and 63, 35% assumed at age 64, 25% assumed at ages 65 and 66, 50% assumed at ages 67 – 69, and 100% assumed at age 70.

Fire - 25% assumed at age 62 and 63, 35% assumed at age 64, 25% assumed at ages 65 and 66, 50% assumed at ages 67 – 69, and 100% assumed at age 70.

***Tier 1 – reaching age 62 after attaining 20 years of service:***

Service-related rates based on service at retirement. See complete tables at the end of this section.

65% are assumed to enter the DROP program while the remaining 35% are assumed to retire and commence benefits immediately. DROP periods are assumed to be 5 years in length for future DROP elections.

***Tiers 2 & 3:***

Age-related rates based on age at retirement. 50% assumed at age 53, 30% assumed at ages 54 – 59, 60% assumed at ages 60 – 63, and 100% assumed at age 64.

Termination Rate

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.

Disability Rate

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. 90% of disablements are assumed to be duty-related.

Marital Status

For active members, 85% of males and 60% 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 four years older than female members and female spouses are assumed to be two years younger than males members.

Benefit Commencement

Deferred members are assumed to commence benefits as follows:

- Tier 1: immediate refund of contributions
- Tiers 2 & 3 (less than 15 years service): immediate refund of contributions
- Tier 2 (15+ years service): life annuity payable at age 52.5
- Tier 3 (15+ years service): life annuity payable at age 55

Health Care Utilization

For active members, 70% 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.

***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**

2.00% per year. This is annual increase for total employer payroll.

**Changes to Actuarial Assumptions and Methods Since the Prior Valuation**

The payroll growth assumption was lowered from 2.50% to 2.00%.

There were no method changes since the prior valuation.

**Salary Increase Rates**

Age	Maricopa Police	Pima Police	Other Police	Maricopa Fire	Pima Fire	Other Fire
20	15.00%	12.00%	14.00%	15.00%	12.00%	13.00%
21	14.00%	6.00%	12.00%	14.00%	11.00%	12.00%
22	13.00%	6.00%	10.00%	13.00%	10.00%	11.00%
23	12.00%	6.00%	9.00%	12.00%	9.50%	10.00%
24	11.00%	6.00%	8.00%	11.00%	9.00%	9.00%
25	10.00%	6.00%	7.00%	10.00%	8.50%	8.00%
26	9.00%	5.50%	6.50%	9.50%	7.50%	7.50%
27	8.00%	5.50%	6.25%	9.00%	6.50%	7.50%
28	7.50%	5.50%	6.00%	8.50%	5.75%	7.00%
29	7.00%	5.50%	5.80%	8.00%	5.75%	6.50%
30	6.50%	5.25%	5.60%	8.00%	5.50%	6.50%
31	6.00%	5.25%	5.40%	7.50%	5.50%	6.00%
32	5.50%	5.00%	5.20%	7.00%	5.00%	5.50%
33	5.10%	5.00%	5.00%	6.50%	5.00%	5.50%
34	4.90%	5.00%	4.90%	6.50%	5.00%	5.50%
35	4.70%	4.50%	4.80%	6.00%	5.00%	5.50%
36	4.50%	4.50%	4.70%	5.50%	5.00%	5.50%
37	4.30%	4.50%	4.60%	5.25%	4.50%	5.00%
38	4.10%	4.00%	4.50%	5.00%	4.50%	5.00%
39	4.00%	4.00%	4.40%	4.75%	4.50%	5.00%
40	3.90%	4.00%	4.30%	4.75%	4.50%	5.00%
41	3.80%	3.80%	4.20%	4.50%	4.50%	4.50%
42	3.70%	3.60%	4.10%	4.50%	4.00%	4.50%
43	3.60%	3.40%	4.00%	4.50%	4.00%	4.50%
44	3.50%	3.20%	3.90%	4.50%	4.00%	4.00%
45	3.50%	3.00%	3.80%	4.25%	4.00%	4.00%
46	3.50%	3.00%	3.70%	4.25%	3.75%	4.00%
47	3.50%	3.00%	3.60%	4.25%	3.75%	3.75%
48	3.50%	3.00%	3.50%	4.00%	3.75%	3.75%
49	3.50%	3.00%	3.50%	4.00%	3.50%	3.75%
50	3.25%	3.00%	3.50%	3.75%	3.50%	3.75%
51	3.25%	3.00%	3.50%	3.75%	3.50%	3.75%
52	3.25%	2.75%	3.50%	3.75%	3.50%	3.75%
53+	3.25%	2.75%	3.50%	3.75%	3.25%	3.75%



**Tier 1 Retirement Rates– reaching age 62 after attaining 20 years of service**

Service	Maricopa Police	Pima Police	Other Police	Maricopa Fire	Pima Fire	Other Fire
20	28%	28%	35%	14%	20%	20%
21	25%	25%	35%	17%	20%	25%
22	15%	16%	22%	7%	13%	15%
23	12%	12%	12%	7%	7%	10%
24	8%	9%	12%	7%	7%	10%
25	30%	22%	25%	17%	22%	30%
26	42%	42%	40%	30%	26%	30%
27	32%	30%	28%	23%	30%	30%
28	32%	30%	28%	30%	30%	30%
29	32%	20%	28%	30%	30%	30%
30	35%	25%	35%	30%	30%	35%
31	35%	33%	30%	40%	30%	35%
32	60%	50%	70%	55%	30%	35%
33	60%	50%	70%	55%	60%	60%
34+	100%	100%	100%	100%	100%	100%

**Termination Rates**

Service	Maricopa Police	Pima Police	Other Police	Maricopa Fire	Pima Fire	Other Fire
0	13.0%	14.0%	13.5%	4.5%	10.0%	10.5%
1	8.0%	9.0%	11.5%	3.5%	6.0%	8.5%
2	6.0%	7.5%	10.5%	2.5%	4.5%	8.0%
3	4.5%	7.0%	9.5%	2.0%	4.0%	8.0%
4	3.6%	6.5%	9.0%	1.5%	4.0%	7.0%
5	3.3%	5.0%	8.0%	1.5%	4.0%	5.0%
6	3.3%	5.0%	7.0%	1.5%	4.0%	5.0%
7	3.3%	4.0%	6.5%	1.5%	3.0%	4.0%
8	2.4%	4.0%	6.5%	1.5%	3.0%	4.0%
9	2.4%	4.0%	6.0%	1.5%	3.0%	3.5%
10	2.4%	4.0%	5.0%	1.0%	2.0%	3.0%
11	1.8%	3.0%	4.0%	1.0%	2.0%	2.5%
12	1.8%	3.0%	4.0%	1.0%	1.5%	2.0%
13	1.3%	2.0%	3.5%	1.0%	1.0%	1.5%
14	1.3%	2.0%	3.0%	0.5%	1.0%	1.4%
15	0.8%	1.5%	2.5%	0.5%	1.0%	1.4%
16	0.8%	1.5%	2.0%	0.5%	0.5%	1.4%
17	0.8%	1.0%	2.0%	0.5%	0.5%	1.4%
18	0.8%	1.0%	1.8%	0.5%	0.5%	1.4%
19	0.8%	1.0%	1.8%	0.5%	0.5%	0.5%
20+	0.5%	1.0%	1.8%	0.4%	0.5%	0.5%

**Disability Rates**

Age	Maricopa Police	Pima Police	Other Police	Maricopa Fire	Pima Fire	Other Fire
20	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
21	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
22	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
23	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
24	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
25	0.050%	0.050%	0.120%	0.020%	0.020%	0.020%
26	0.100%	0.100%	0.160%	0.035%	0.020%	0.020%
27	0.100%	0.100%	0.160%	0.035%	0.020%	0.020%
28	0.100%	0.100%	0.160%	0.035%	0.020%	0.020%
29	0.100%	0.100%	0.160%	0.035%	0.020%	0.020%
30	0.100%	0.100%	0.160%	0.035%	0.020%	0.020%
31	0.230%	0.180%	0.240%	0.090%	0.100%	0.060%
32	0.230%	0.180%	0.240%	0.090%	0.100%	0.060%
33	0.230%	0.180%	0.240%	0.090%	0.100%	0.060%
34	0.230%	0.180%	0.240%	0.090%	0.100%	0.060%
35	0.230%	0.180%	0.240%	0.090%	0.100%	0.060%
36	0.450%	0.350%	0.320%	0.150%	0.150%	0.140%
37	0.450%	0.350%	0.320%	0.150%	0.150%	0.140%
38	0.450%	0.350%	0.320%	0.150%	0.150%	0.140%
39	0.450%	0.350%	0.320%	0.150%	0.150%	0.140%
40	0.450%	0.350%	0.320%	0.150%	0.150%	0.140%
41	0.520%	0.650%	0.550%	0.170%	0.300%	0.250%
42	0.520%	0.650%	0.550%	0.170%	0.300%	0.250%
43	0.520%	0.650%	0.550%	0.170%	0.300%	0.250%
44	0.520%	0.650%	0.550%	0.170%	0.300%	0.250%
45	0.520%	0.650%	0.550%	0.170%	0.300%	0.250%
46	0.650%	0.750%	0.750%	0.300%	0.420%	0.420%
47	0.650%	0.750%	0.750%	0.300%	0.420%	0.420%
48	0.650%	0.750%	0.750%	0.300%	0.420%	0.420%
49	0.650%	0.750%	0.750%	0.300%	0.420%	0.420%
50	0.650%	0.750%	0.750%	0.300%	0.420%	0.420%
51	0.800%	0.800%	0.800%	0.700%	0.750%	0.750%
52	0.800%	0.800%	0.800%	0.700%	0.750%	0.750%
53	0.800%	0.800%	0.800%	0.700%	0.750%	0.750%
54	0.800%	0.800%	0.800%	0.700%	0.750%	0.750%
55	0.800%	0.800%	0.800%	0.700%	0.750%	0.750%
56+	1.000%	0.850%	0.900%	1.100%	0.800%	1.000%

## VII. DISCUSSION OF RISK

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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.” For a better understanding of the overall Plan and the impact of these risks, please refer to the consolidated PSPRS valuation report.

### **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 \$35,293,387 for Tiers 1 and 2 and \$277,283,390 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.

## Plan Maturity Measures and Other Risk Metrics - Tiers 1 & 2

	6/30/2023	6/30/2022	6/30/2021	6/30/2020
<b>Support Ratio</b>				
Total Actives	13	16	18	16
Total Inactives	35	32	31	31
Actives / Inactives	37.1%	50.0%	58.1%	51.6%
<b>Asset Volatility Ratio</b>				
Market Value of Assets (MVA)	22,610,719	21,821,332	23,820,740	5,401,168
Total Annual Payroll	1,239,530	1,420,759	1,527,913	1,481,859
MVA / Total Annual Payroll	1,824.1%	1,535.9%	1,559.0%	364.5%
<b>Accrued Liability (AL) Ratio</b>				
Inactive Accrued Liability	20,584,138	19,191,021	18,153,736	17,570,309
Total Accrued Liability	24,254,182	23,493,843	22,684,942	22,309,081
Inactive AL / Total AL	84.9%	81.7%	80.0%	78.8%
<b>Funded Ratio</b>				
Actuarial Value of Assets (AVA)	23,027,511	22,415,389	21,777,335	5,815,369
Total Accrued Liability	24,254,182	23,493,843	22,684,942	22,309,081
AVA / Total Accrued Liability	94.9%	95.4%	96.0%	26.1%
<b>Net Cash Flow Ratio</b>				
Net Cash Flow <sup>1</sup>	(849,454)	(1,054,223)	15,830,277	(273,570)
Market Value of Assets (MVA)	22,610,719	21,821,332	23,820,740	5,401,168
Net Cash Flow / MVA	(3.8%)	(4.8%)	66.5%	(5.1%)

<sup>1</sup> 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 <sup>1</sup>

	6/30/2023	6/30/2022	6/30/2021	6/30/2020
<b>Support Ratio</b>				
Total Actives	3,052	2,417	2,560	1,408
Total Inactives	450	327	307	130
Actives / Inactives	678.2%	739.1%	833.9%	1,083.1%
<b>Asset Volatility Ratio</b>				
Market Value of Assets (MVA)	119,338,352	74,774,123	51,992,240	22,964,925
Total Annual Payroll	226,680,964	165,151,543	115,883,115	84,448,996
MVA / Total Annual Payroll	52.6%	45.3%	44.9%	27.2%
<b>Accrued Liability (AL) Ratio</b>				
Inactive Accrued Liability	9,349,377	4,598,114	2,290,610	1,173,104
Total Accrued Liability	110,961,191	68,939,204	42,733,537	23,239,599
Inactive AL / Total AL	8.4%	6.7%	5.4%	5.0%
<b>Funded Ratio</b>				
Actuarial Value of Assets (AVA)	119,101,476	76,171,857	45,863,401	23,570,444
Total Accrued Liability	110,961,191	68,939,204	42,733,537	23,239,599
AVA / Total Accrued Liability	107.3%	110.5%	107.3%	101.4%
<b>Net Cash Flow Ratio</b>				
Net Cash Flow <sup>2</sup>	36,208,171	25,802,686	18,607,209	13,192,598
Market Value of Assets (MVA)	119,338,352	74,774,123	51,992,240	22,964,925
Net Cash Flow / MVA	30.3%	34.5%	35.8%	57.4%

<sup>1</sup> Tier 3 results are shown for the Risk Sharing group, where applicable.

<sup>2</sup> 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

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*The following is a summary of the benefit provisions provided in Title 38, Chapter 5, Article 4 of the Arizona Revised Statutes.*

### Membership

Full-time employees of an eligible group, prior to attaining age 65, who are engaged to work for more than six months in a calendar year. Tier 3 Defined Contribution members are able to elect participation in post-retirement health insurance subsidy.

### Benefit Tiers

Benefits differ for members based on their hire date:

<u>Tier</u>	<u>Hire Date</u>
1	Hired before January 1, 2012
2	Hired on or after January 1, 2012 but before July 1, 2017
3	Hired on or after July 1, 2017

### Compensation

Compensation is the amount including base salary, overtime pay, shift and military differential pay, compensatory time used in lieu of overtime pay, and holiday pay, paid to an employee on a regular payroll basis and longevity pay paid at least every six months for which contributions are made to the System. For Tier 3 members, compensation is limited by statutory cap (\$110,000 with adjustments by the Board).

### Average Monthly Benefit Compensation

#### ***Tier 1:***

The highest compensation paid to member during three consecutive years out of the last 20 years of Credited Service, divided by months.

#### ***Tier 2:***

The highest compensation paid to member during five consecutive years out of the last 20 years of Credited Service, divided by months.

#### ***Tier 3:***

The highest compensation paid to member during five consecutive years out of the last 15 years of Credited Service, divided by months.

### Credited Service

Total periods of service, both before and after the member's date of participation, for which the member made contributions to the fund.

### Normal Retirement Date

#### ***Tier 1:***

First day of month following attainment of 1) 20 years of service or



2) 62<sup>nd</sup> birthday and completion of 15 years of service.

**Tier 2:**

First day of month following the attainment of age 52.5 and completion of 15 years of service.

**Tier 3:**

First day of month following the attainment of age 55 and completion of 15 years of service.

Benefit

**Tier 1:**

50% of Average Monthly Benefit Compensation, adjusted based on Credited Service as follows (maximum benefit of 80% of Average Monthly Benefit Compensation):

<u>Credited Service</u>	<u>Benefit Adjustment</u>
15 years, but less than 20	Reduced 4% per year less than 20
20 years, but less than 25	Plus 2% per year between 20 and 25
25+ years	Plus 2.5% per year above 20

**Tier 2:**

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

<u>Credited Service</u>	<u>Benefit Multiplier</u>
15 years, but less than 17	1.50%
17 years, but less than 19	1.75%
19 years, but less than 22	2.00%
22 years, but less than 25	2.25%
25+ years	2.50%

**Tier 3:**

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

<u>Credited Service</u>	<u>Benefit Multiplier</u>
15 years, but less than 17	1.50%
17 years, but less than 19	1.75%
19 years, but less than 22	2.00%
22 years, but less than 25	2.25%
25+ years	2.50%

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.
<u>Early Retirement</u>	<b><i>Only applicable to Tier 3 members:</i></b>
Date	Attainment of age 52.5 and 15 years of Credited Service.
Benefit	Actuarial equivalent of Normal Retirement benefit.
<u>Disability Benefit – Accidental (duty-related)</u>	
Eligibility	Total and permanent disability incurred in performance of duty.
Benefit Amount	A maximum of: a.) 50% of Average Monthly Benefit Compensation, and; b.) The monthly Normal Retirement pension that the member is entitled to receive if he or she retired immediately.
<u>Disability Benefit – Ordinary (not duty-related)</u>	
Eligibility	Total and permanent disability not incurred in performance of duty.
Benefit Amount	Normal Retirement pension that the member is entitled to receive, prorated based on Credited Service earned over the required Credited Service for Normal Retirement (maximum ratio of 1).
<u>Disability Benefit – Other</u>	
Temporary	Benefit equals 1/12 of 50% of compensation during year preceding date of disability. Payments terminate after 12 months.
Catastrophic	Benefit equals 90% of Average Monthly Benefit Compensation. After 60 months member receives greater of 62.5% Average Monthly Benefit Compensation and accrued normal pension.
<u>Pre-Retirement Death Benefit</u>	
Service Incurred	<i>Payable following death of active member</i> 100% of Average Monthly Benefit Compensation, reduced by child's pension.
Non-Service Incurred	80% of benefit based on calculation for accidental disability retirement.
Child's Pension	10% of pension for each child (maximum 20% paid) based on calculation for accidental disability retirement. Payable to dependent child under age 18 (23 if full-time student).

Guardian’s Pension Same as spouse’s pension. Payable (along with child’s pension) when no spouse is being paid and there is at least one child under 18 (23, if full-time student).

Accumulated Contributions Any contributions remaining upon the death of the last beneficiary shall be paid as a lump sum.

Vesting (Termination)

Vesting Service Requirement **Tier 1:**  
 10 years of Credited Service.  
**Tiers 2 & 3:**  
 15 years of Credited Service.

Non-Vested Benefit **Tier 1:**  
 Lump sum payment of accumulated contributions, plus additional amount based on years of Credited Service.

<u>Service</u>	<u>Additional % of Contributions</u>
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.

Vested Benefit **Tier 1:**  
 Deferred retirement 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.

**Tiers 2 & 3:**  
 Calculated same as normal retirement pension. Payable if contributions left in fund until reach age requirement. Member is entitled to survivor benefits, benefit increases, and group health insurance subsidy.

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. Adjustment does not apply while in DROP.

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 first calendar year after the 7<sup>th</sup> 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, 2017 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, 2017 is 90% or more;
- 1.5%, if funded ratio for members who are hired on or after July 1, 2017 is 80-90%;
- 1%, if funded ratio for members who are hired on or after July 1, 2017 is 70-80%.

Deferred Retirement Option Plan (DROP):

Eligibility	Tier 1 and 20 years of Credited Service.
DROP Period	Maximum 84 months.
Member Contributions	Cease upon DROP entry.
Benefit Amount	Calculated based on Credited Service and average monthly compensation as of the beginning of the DROP period, credited to DROP participation account for DROP period.

Interest on DROP Participation Account	<u>Beginning Year</u>	<u>Interest Rate</u>
	July 1, 2016	7.40%
	July 1, 2018	7.30%
	July 1, 2022	7.20%
Payment of DROP Participation Account	Payable as lump sum distribution to Public Safety Personnel Defined Contribution Retirement Plan at earlier of 1) end of DROP period, 2) at termination, or 3) five years.	
Payment Monthly Benefit	System commences payment of benefit amount at the earlier of 1) the end of the DROP period and 2) at termination.	

Post-Retirement Health Insurance Subsidy

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

Maximum Subsidy Amounts (monthly)		<u>Member Only</u>	<u>With Dependents</u>
	Medicare Eligible	\$100	\$170
	One w/ Medicare	N/A	\$215
	Not Medicare Eligible	\$150	\$260

Employee Contributions

**Tiers 1 & 2:**  
 7.65% (effective July 1, 2023).

**Tier 3:**  
 50% of total contribution, which is Normal Cost plus a level-dollar amortization of unfunded actuarial accrued liability over a closed period not to exceed 10 years.

Employer Contributions

**Tiers 1 & 2:**  
 Normal Cost plus amortization of unfunded actuarial accrued liability over a closed period not to exceed 20 years (subject to one-time election to extend to closed period not to exceed 30 years).

**Tier 3:**  
 50% of total contribution, which is Normal Cost plus 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

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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

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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.